

# The 1999 Vancouver IADR/AADR/CADR Program

All Sessions are located at the Vancouver Trade & Convention Centre.

**PROGRAM INDEX:** WEDNESDAY (Morning, Afternoon), THURSDAY (Morning, Afternoon), FRIDAY (Morning, Afternoon), SATURDAY (Morning, Afternoon)

**AUTHOR INDEX:** A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z

## NEW PROGRAM COMPONENTS AT VANCOUVER (Ballroom A) PLENARY SESSIONS

- Thursday, 8:15 to 9:00 am "Tissue Engineering and Biochemistry"  
**JOSEPH VACANTI (Children's Hospital, Boston, MA)**
- Friday, 8:15 to 9:00 am "Evidence-based Medicine: Selection of Proper Study Design"  
**JOHAN KARLBERG (Paediatrics, University of Hong Kong, CHINA)**
- Saturday, 8:15 to 9:00 am "Genes and Genomes: A Revolution in Medicine of the 21st Century"  
**LEROY HOOD (University of Washington, Seattle, WA)**

(Light continental breakfast served before PLENARY SESSIONS from 7:45 to 8:15 am)

## WEDNESDAY (Morning)

**Seq#: 1 Wednesday, 9:00 am – 12 Noon**  
**Symposium, Room 8**

**IADR Behavioral Sciences/Health Services Research Group and the AADS Section on Community Preventive Dentistry - Partnerships in Research: Dental Care Financing and Academia [Supported by Washington Dental Service, Seattle]**

**Chairpersons: P. Milgrom and M. Anderson**

- 0001** 9:00 Opening Comments.  
Part I: Defining Needs for Research and Collaboration.  
9:05 From the Point of View of a Delta Plan Carrier. J. GARRISON (*Washington Dental Service, Seattle, USA*).  
9:15 From the Point of View of a Commercial Carrier. T. GOTOWKA (*Aetna US Healthcare, Hartford, CT, USA*).  
9:25 From the Point of View of the Academic Community. P. ROBERTSON (*University of Washington, Seattle, USA*).  
9:35 Discussion  
Part II: Examples of Industry/Academic Collaboration.  
9:40 Intervention Research. D. GREMBOWSKI (*University of Washington, Seattle, USA*).  
9:50 Outcomes Research. S. EKLUND (*University of Michigan, Ann Arbor, USA*).  
10:00 Prevention Research. A. FORMICOLA (*Columbia University, New York, USA*).

- 10:10 Discussion.  
Part III: Examples of Data for Building Collaborations.  
10:15 Delta Dental Plans. M. ANDERSON (*Washington Dental Service, Seattle, USA*).  
10:25 Medicaid. P. MILGROM (*University of Washington, Seattle, USA*).  
10:35 Discussion.  
Part IV: Moving the Agenda Forward  
10:40 Partnerships in Healthcare Research. H. ARKINS (*Aetna Managed Care, Walnut Creek, CA, USA*).  
10:55 Summary and Agenda for Follow-up. J. GARRISON (*Washington Dental Service, Seattle, USA*).  
11:05 Discussion.

**Seq#: 2 Wednesday, 10:00 am – 12 Noon**  
**Symposium, Room 11**

**IADR Education Research and Experimental Pathology Groups and the AADS PBL Special Interest Group - Problem-based Learning in Dental Education – An Idea Whose Time Has Come**

**Chairperson: D.C. Clark**

- 0002** 10:00 Introduction and Overview of Program. D.C. CLARK (*University of British Columbia, Vancouver, Canada*).  
10:15 PBL Methodology and Learning. P. O'NEILL (*University of Texas, Houston, USA*).  
10:35 Experience with PBL Dental Curriculum. M. ROHLIN and G. SVENSATER (*Centre for Oral Health Sciences, Malmö, Sweden*).  
10:55 Obstacles to Change to PBL. S. ABRAHAMSON (*University of Southern California, Los Angeles, USA*).

11:15 PBL vs. Traditional (Debate/Panel Discussion).  
B. HENDRICKSON, D. CHAMBERS, L. TEDESCO, C. SHULER,  
and K. MATLIN (*University of Texas, San Antonio, USA*;  
*University of the Pacific, San Francisco, CA, USA*; *University of*  
*Michigan, Ann Arbor, USA*; *University of Southern California,*  
*Los Angeles, USA*; *Harvard School of Dentistry, Boston, MA,*  
*USA*).

11:45 Discussion.

11:55 Summation and Future Developments. M.  
ALDRED (*University of Melbourne, Australia*).

## WEDNESDAY (Afternoon)

**Seq#: 3 Wednesday, 2:00 pm – 4:00 pm**  
**Symposium, Room 11**

**Craniofacial Biology Group - Skeletal and Connective Tissue  
Remodeling in Orthodontic and Dentofacial Orthopedic  
Treatment**

**Chairpersons: G. King and S. Kapila**

**0003** 2:00 Opening Comments.  
2:05 Mechanotransduction in Bone. C.H. TURNER  
(*Indiana University, Indianapolis, USA*).  
2:25 Alveolar Bone Osteoclasts in Orthodontic Tooth  
Movement. G. KING (*University of Washington, Seattle, USA*).  
2:45 Alterations in Cell-Matrix Interactions Modulate  
Matrix Degradative Activity in Skeletal Tissue Cells. S. KAPILA  
(*University of California, San Francisco, USA*).  
3:05 Gene Expression in Periodontal Cells Induced by  
Orthodontic Stress. D. PAVLIN (*University of Texas, San*  
*Antonio, USA*).  
3:25 Orthodontics *in vitro*: Signal Transduction. E.  
YEN (*University of British Columbia, Vancouver, Canada*).  
3:45 Discussion.

**Seq#: 4 Wednesday, 2:00 pm – 4:00 pm**  
**Symposium, Room 3**

**IADR Education Research Group and the AADS, IFDEA, and  
ACFD - Evidence-based Medicine and Dentistry in Dental  
Education [Supported by IFDEA and AADS]**

**Chairpersons: M. Boyd and D. Donaldson**

**0004** 2:00 Opening Comments.  
2:05 Finding Evidence for Evidence-based Dentistry.  
J. BADER (*University of North Carolina, Chapel Hill, USA*).  
2:30 Bringing Science to the Clinic Floor. B. BAUM  
(*NIDCR/NIH, Bethesda, MD, USA*).  
2:55 Evidence-based Medicine and Its Anticipated  
Influence on Dental Education. B. SHAW (*University of*  
*Manchester, UK*).  
3:20 Summary and Conclusion. D. DONALDSON  
(*University of British Columbia, Vancouver, Canada*).  
3:30 Discussion.

**Seq#: 5 Wednesday, 2:00 pm – 4:00 pm**  
**Symposium, Room 1**

**Microbiology/Immunology Group - Emerging Concepts in  
Pathogen-Host Sensing and Response**

**Chairpersons: R.J. Lamont and H.F. Jenkinson**

**0005** 2:00 Opening Comments.  
2:05 Salmonella Interactions with Mammalian Cells.  
S. MILLER (*University of Washington, Seattle, USA*).  
2:25 Models of Periodontal Pathogen Invasion. P.  
FIVES-TAYLOR (*University of Vermont, Burlington, USA*).  
2:45 Epithelial Cell Responses to *P. gingivalis*. K.  
IZUTSU (*University of Washington, Seattle, USA*).  
3:05 Invasion of Vascular and Heart Epithelial Cells:  
Yet Another Pathogenic Strategy of the Bug That Causes Gum  
Disease. C.A. GENCO (*Boston University, MA, USA*).  
3:25 Calprotectin: In Defense of the Oral Mucosa. K.  
ROSS (*University of Minnesota, Minneapolis, USA*).  
3:50 Cytopathic Effects of *T. denticola* Surface  
Proteins. C. FENNO (*University of Michigan, Ann Arbor, USA*).

**Seq#: 6 Wednesday, March 10, 2:00 pm - 4:00 pm**  
**Oral Session, Room 13**

**Behavioral Sciences & Health Services Research - Oral  
Cancer Health Education and Practice**

**Chairpersons: P. Bivona and A. Horowitz**

**0006** 2:00 Coverage of Oral Cancer in Newspapers and  
Magazines: 1987-1998. M.T. CANTO\*, Y. KAWAGUCHI, and  
A.M. HOROWITZ (*NCI/NIH, Bethesda, MD, USA*; *Tokyo*  
*Medical and Dental University, Japan*; and *NIDCR/NIH,*  
*Bethesda, MD, USA*).  
**0007** 2:15 Assessment of Oral Cancer Educational  
Materials for the General Public: 1998. V. CHUNG\*, P.  
SIRIPHANT, A.M. HOROWITZ, and M.T. CANTO  
(*NIDCR/NIH, Bethesda, MD*; *College of Dental Medicine,*  
*Medical University of South Carolina, Charleston*; and *SPH,*  
*University of North Carolina, Chapel Hill, USA*).  
**0008** 2:30 Tobacco Education for Adolescents: An  
Expanded Study. R.B. HAYES\*, T.M. O'BRYAN, and K.C.  
CREWS (*School of Dentistry, University of Mississippi Medical*  
*Center, Jackson, USA*).  
**0009** 2:45 Oral Cancer Knowledge among Maryland Nurse  
Practitioners. P. SIRIPHANT, T.F. DRURY, A.M. HOROWITZ\*,  
and R.M. HARRIS (*National Institute of Dental and Craniofacial*  
*Research/National Institutes of Health, Bethesda, MD*; and  
*University of Maryland, Baltimore, USA*).  
**0010** 3:00 Effectiveness of an Oral Cancer Training  
Program for Health Professionals. M. McCUNIFF\*, K.  
WILLIAMS, G. BARKER, and B. BARKER (*University of*  
*Missouri Kansas City School of Dentistry, USA*).  
**0011** 3:15 Delphi-derived Factors for a Decision Analysis  
to Minimize Osteoradionecrosis. C.K. CRAMER, J.B. EPSTEIN,  
M.T. SCHECHTER\*, S.B. SHEPS, and J.R. BUSSER (*University*  
*of Mississippi Medical Center, Jackson, USA*; and *University of*  
*British Columbia, Vancouver, Canada*).  
**0012** 3:30 Motivating Smoking Cessation among Dental  
Patients: Developing a Behavioral Intervention. J.S. OSTROFF,  
J.L. HAY, L. PRIMAVERA, P. BIVONA\*, G.D. CRUZ, and R.Z.  
LeGEROS (*Memorial Sloan-Kettering Cancer Center, New York,*  
*NY*; and *New York University Dental School, NY, USA*).  
**0013** 3:45 Dental Health Promotion Practices of United  
States Army Dentists. M.C. CHISICK\* and M.J. PIOTROWSKI

(United States Army Center for Health Promotion and Preventive Medicine, Aberdeen Proving Ground, MD, USA).

**Seq#: 7**      **Wednesday, March 10, 2:00 pm - 4:00 pm**  
**Oral Session, Room 18**

### **Cariology Research - Dentin Caries, Atraumatic Methods**

**Chairpersons: M. Larmas and D. Inaba**

**0014** 2:00 Calcium Imbalance does not Explain Caries-inducing Effects of High Sucrose Diet in Rats. E. PEKKALA\*, E.-L. HIETALA, M. PUUKKA, and M. LARMAS (*University of Oulu and University Hospital of Oulu, Finland*).

**0015** 2:15 Protective Effects of Dentinal Fluid Flow on Root Surface Demineralization. D. INABA\*, Y. SOMEYA, and M. YONEMITSU (*Department of Preventive Dentistry, Iwate Medical University School of Dentistry, Morioka, Japan*).

**0016** 2:30 Bacterial and *Candida* Colonization of Protein-coated Type I Collagen. H. YAMASHIRO\*, H. NIKAWA, M. NISHIMURA, and T. HAMADA (*Department of Prosthetic Dentistry, Hiroshima University, Japan*).

**0017** 2:45 Measurement of Root Dentin Remineralization Using Confocal Microscopy. C. GONZÁLEZ-CABEZAS\*, M. FONTANA, M.E. WILSON, and G.K. STOOKEY (*Indiana University, Indianapolis, USA*).

**0018** 3:00 Chemo-mechanical Removal of Root Caries Compared with Drilling. S. FURE\*, P. LINGSTRÖM, and D. BIRKHED (*Department of Cariology, Göteborg University, Sweden*).

**0019** 3:15 Biochemical Analysis of Dentin Collagen Following Chemo-mechanical Caries Removal. S. JEPSEN, Y. AÇIL, B. ZUCH, and H.-K. ALBERS\* (*Kiel University Dental School, Germany*).

**0020** 3:30 Optimum Pulse Duration for CO<sub>2</sub> Laser Ablation of Dental Enamel. D. FRIED\*, M.W. MURRAY, O.P. OJEDA, C. DUHN, and K.M. DICKENSON (*University of California, San Francisco; and Argus Photonics Group, Jupiter, FL, USA*).

3:45 Discussion

**Seq#: 8**      **Wednesday, March 10, 2:00 pm - 4:00 pm**  
**Oral Session, Room 12**

### **Craniofacial Biology - Cleft Lip/Palate**

**Chairpersons: Y. Shapira and C.-A. Trotman**

**0021** 2:00 Dental Anomalies Associated with Isolated Dento-alveolar Clefts. M.J. HAUK\*, T. CARUSO, D.M. MUENCH, and M.E. MOSS (*EDD/University of Rochester, NY, USA*).

**0022** 2:15 Analysis of Candidate Loci for Non-syndromic Clefting. M. QUIMBY\*, S. DAACK-HIRSH, J. VANDERFLUGT, M. MARAZITA, M. COOPER, and J.T. MURRAY (*Craniofacial Center, University of Iowa, Iowa City; and Craniofacial Center, University of Pittsburgh, PA, USA*).  
**(1997 AADR Student Fellowship Recipient)**

**0023** 2:30 An Epidemiologic Review of a Population-based Cleft Palate Program. K.M. FRIESEN\* and O. ODLUM (*University of Manitoba, Winnipeg, Canada*).

**0024** 2:45 The Prevalence of Oral Clefts in Brazil, 1992-1994. L.C.M. LOFFREDO\* (*Araraquara Dental School, UNESP, Brazil*).

**0025** 3:00 Investigation of Associated Anomalies with Cleft Palate in Orthodontic Clinic. Y. BABA\*, N. MOTOHASHI, T. FUKAYA, K. OHYAMA, and T. KURODA (*2nd Department of Orthodontics, Tokyo Medical and Dental University, Japan*).

**0026** 3:15 Maxillary Growth in Unilateral Cleft Lip and Palate Patients. M. SERRA\*, A.A. FIGUEROA, M. COHEN, and J.W. POLLEY (*The Craniofacial Center at the University of Illinois at Chicago, USA*).

**0027** 3:30 Congenitally Absent Maxillary Lateral Incisors in Cleft Lip and Palate. Y. SHAPIRA\*, M.M. KUFTINEC, and E. LUBIT (*Department of Orthodontics, School of Dentistry, Tel Aviv University, Israel; and New York University, USA*).

**0028** 3:45 Incidence and Risk Factors of Cleft Lip/Palate in Ohio. M. TAM\*, J.A. LALUMANDIER, and S. NELSON (*Case Western University School of Dentistry, Cleveland, OH, USA*).

**Seq#: 9**      **Wednesday, March 10, 2:00 pm - 4:00 pm**  
**Oral Session, Room 14**

### **Craniofacial Biology - Tooth Movement Effects**

**Chairpersons: L. Iwasaki and C. Dolce**

**0029** 2:00 Human Gingiva Cytokine Expression and Velocity of Tooth Movement. L.R. IWASAKI\*, J.E. HAACK, J.C. NICKEL, and R.A. REINHARDT (*College of Dentistry, University of Nebraska Medical Center, Lincoln, USA*).

**0030** 2:15 Appearance of Osteoclasts Following Orthodontic Appliance Reactivation after Complete Decay. S. LEMERY\* and G.J. KING (*Department of Orthodontics, School of Dentistry, University of Washington, Seattle, USA*).

**0031** 2:30 Histological Responses of Periodontal Ligament in Rapid Orthodontic Tooth Movement are Distraction Osteogenesis. E. LIOU\*, A.A. FIGUEROA, M. ZAKI, and J.W. POLLEY (*Craniofacial Center, University of Illinois at Chicago, USA*).

**0032** 2:45 Inhibition of Osteoclast Number by Nerve Denervation during Tooth Movement. T. YAMASHIRO\*, K. FUJIYAMA, Y. FUJIYOSHI, N. INAGUMA, and T. TAKANO-YAMAMOTO (*Department of Orthodontics, Okayama University Dental School, Japan*).

**0033** 3:00 Matrix Metalloproteinase-2 (MMP-2) Expression during Orthodontic Tooth Movement. N.J. SAVASTANO\* and C. DOLCE (*Department of Orthodontics, University of Florida, Gainesville, USA*).

**0034** 3:15 Induction of *c-fos* during Orthodontic Tooth Movement in Rats. J.S. MALONE\* and C. DOLCE (*Department of Orthodontics, University of Florida, Gainesville, USA*).

**0035** 3:30 Mechanical Signaling from Integrins to Gene Expression. C. MEYER\*, J. FONG, and D. INGBER (*Harvard School of Dental Medicine and Children's Hospital, Boston, MA, USA*).

3:45 Discussion

**Seq#: 10**      **Wednesday, March 10, 2:00 pm - 4:00 pm**  
**Oral Session, Room 15**

### **Dental Materials - Adhesion Mechanism and Microstructure**

**Chairpersons: R. Blankenau and A. Meyer**

**0036** 2:00 "Hybrid Zone" Microstructure of Er:YAG-treated Dentin. M.A. LATTA, R.J. BLANKENAU\*, and R.W. ELLIS (*Creighton University School of Dentistry, Omaha, NE, USA*).

**0037** 2:15 Adhesion Mechanism of Resin to Etched Dentin Primed with HEMA. N. NISHIYAMA\*, K. KOMATSU, K. NEMOTO, and K. SUZUKI (*School of Dentistry, Nihon University, Chiba; and School of Dentistry, Okayama University, Japan*).

**0038** 2:30 Bonding and Decalcification Mechanism of Carboxylic Acids. B. VAN MEERBEEK\*, Y. YOSHIDA, Y. YAMASAKI, Y. NAKAYAMA, P. LAMBRECHTS, G. VANHERLE, and K. WAKASA (*Catholic University, Leuven, Belgium; and Hiroshima University and Toray Research Center, Japan*).

**0039** 2:45 Dynamics of Re-expansion of Dried, Acid-etched Dentin. J. HARMON, M. NAKAJIMA, F.A. RUEGGEBERG, J.L. BORKE, A. SMITH, and D.H. PASHLEY\* (*Tingay Clinic, Fort Gordon, GA; and Medical College of Georgia, Augusta, USA*).

**0040** 3:00 Ultramorphological Characterization of the Hybrid Layer/Unaffected Dentin Bonded Interface. J. PERDIGÃO\* and M. LOPES (*Department of Operative Dentistry and Dental Research Center, University of North Carolina at Chapel Hill, USA*).

**0041** 3:15 Effects of Phosphoric Acid and Gluma Desensitizer on Dentin Collagen. A.V. RITTER\*, J. PERDIGÃO, E.J. SWIFT, Jr., and M. YAMAUCHI (*Dental Research Center and Department of Operative Dentistry, University of North Carolina, Chapel Hill, USA*).

**0042** 3:30 Spectroscopic and Morphologic Imaging of the Dentin/Adhesive Interface. P. SPENCER\*, J.R. SWAFFORD, M. BROWN, and D.M. WIELICZKA (*University of Missouri—Kansas City School of Dentistry; and Department of Physics, Kansas City, MO, USA*).

**0043** 3:45 Internal Reflection Infrared Analyses of Human Dentin Denatured Prior to Bonding. A.E. MEYER\*, Y.K.E. ARIANTO, E. HERDA, and R.E. BAIER (*State University of New York at Buffalo, USA; and University of Indonesia, Jakarta, Indonesia*).

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**Seq#: 11** **Wednesday, March 10, 2:00 pm - 4:00 pm**  
**Oral Session, Room A-3**

**Dental Materials - Dental Ceramics:** *Novel Materials and Wear Evaluation*

**Chairpersons: K. Anusavice and J. Griggs**

**0044** 2:00 Chemical Durability of Fluorocanite Glass-ceramic in Artificial Saliva under Dynamic and Static Conditions. K.J. ANUSAVICE\*, N.-Z. ZHANG, and J.E. MOORHEAD (*Department of Dental Biomaterials and Department of Statistics, University of Florida, Gainesville, USA*).

**0045** 2:15 Flexural Strength of Glass- and Resin-infiltrated Ceramic Matrices. C. SABROSA, R. POBER, P. KITTIPIBUL, and R. GIORDANO\* (*Goldman School of Dental Medicine, Boston University, MA, USA*).

**0046** 2:30 Color Stability of a Resin Interpenetrating Phase Ceramic. C. ASVANUD\*, C. SABROSA, R. POBER, and R. GIORDANO (*Goldman School of Dental Medicine, Boston University, MA, USA*).

**0047** 2:45 Influence of Thermal Processing on Fracture Toughness of Barium Aluminosilicate Glass-Ceramics. J.A. GRIGGS\*, K.J. ANUSAVICE, and J.J. MECHOLSKY, Jr. (*University of Florida, Gainesville, USA*).

**0048** 3:00 Processing of Reticulate Ceramics as Mandibular Allografts. J. GASSNER\* and K. THORNE (*Department of Restorative Dentistry, University of Illinois at Chicago, USA*).

**0049** 3:15 The Wear of Human Enamel Opposing Dental Porcelains. D.W. FARLEY\*, D. SHIN, R.E. JONES, and C.M. AGRAWAL (*University of Texas Health Science Center, San Antonio; and University of Texas Pan American, Edinburg, USA*).

**0050** 3:30 *In vitro* Enamel Wear of Modified Porcelains. Y. IMAI\*, S. SUZUKI, and S. FUKUSHIMA (*Tsurumi University, Yokohama, Japan; and University of Alabama, Birmingham, USA*).

**0051** 3:45 A New Microwear Test Applied to a Hydrated Glass. S.T. RASMUSSEN\* and W.J. O'BRIEN (*School of Dentistry, University of Michigan, Ann Arbor, USA*).

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**Seq#: 12** **Wednesday, March 10, 2:00 pm - 4:00 pm**  
**Oral Session, Room A-2**

**Dental Materials - Casting Alloys**

**Chairpersons: W. Brantley and Z. Cai**

**0052** 2:00 Remarkable Composition-Mechanical Property Dependence for Two Pd-Cu-Ga Dental Alloys. W.A. BRANTLEY\*, Q. WU, J.C. MITCHELL, and S.G. VERMILYEA (*Ohio State University, Columbus; and Therm-O-Disc, Inc., Mansfield, OH, USA*).

**0053** 2:15 Rotating Ring Disk Voltammetry of High-Pd Ceramic Alloys. R. GRAVES\* and N.K. SARKAR (*LSU School of Dentistry, New Orleans, LA, USA*).

**0054** 2:30 Electrochemical Behavior of Oxidized High-Pd Ceramic Alloys. D. BERZINS\*, N.K. SARKAR, and I. KAWASHIMA (*LSU School of Dentistry, New Orleans, LA, USA; and Health Sciences University, Hokkaido, Japan*).

**0055** 2:45 *In vitro* Corrosion Behavior of As-received and Previously-cast Gold Alloy. M. AYAD\*, S.G. VERMILYEA, and S. ROSENSTIEL (*Elite Medical and Surgical Center, Riyadh, Saudi Arabia; and Ohio State University, Columbus, USA*).

**0056** 3:00 X-ray Diffraction Investigation of Dental Cast Titanium-Ceramic Interfaces. Z. CAI\*, M. NUNN, and T. OKABE (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**0057** 3:15 AFM Investigation of Electrochemical Modification of Titanium Oxide. J.P. BEARINGER\*, C. ORME, L.B. DA SILVA, D.J. MAITLAND, and J.L. GILBERT (*Lawrence Livermore National Lab, CA; and Northwestern University Dental School, Chicago, IL, USA*).

**0058** 3:30 Warping of Laser-welded Dental Alloys after Thermal Treatment. F. MACK\*, Th. KLINKE, T. TRAUTMANN, and R. BIFFAR (*Department of Prosthodontic and Dental Materials, College of Dentistry, University of Greifswald, Germany*).

**0059** 3:45 Plaque and Gingival Health in Titanium Restorations. M. WALTER\*, B. WOLF, K. BOENING, and A. SCHMIDT (*Department of Prosthetic Dentistry, University of Technology, Dresden, Germany*).

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**Seq#: 13** **Wednesday, 2:00 pm - 4:00 pm**  
**Oral Session, Room A-5**

**Dental Materials - Orthodontics & Miscellaneous****Chairpersons: R. Kapur and H.-B. Moon**

**0060** 2:00 Comparison of Load Generation and Bracket Deformation between Titanium and Stainless Steel Brackets. R. KAPUR\*, P.K. SINHA, and R.S. NANDA (*Departments of Orthodontics and Dental Materials, College of Dentistry, University of Oklahoma, Oklahoma City, USA*).

**0061** 2:15 Evaluation of Frictional Resistance between Orthodontic Brackets and Archwires. H.-B. MOON\*, A. DARENDELILER, and T.-J. JEONG (*Section of Orthodontics, UCLA School of Dentistry, Los Angeles, CA, USA; University of Sydney, Australia; and St. Mary's Hospital, Seoul, Korea*).

**0062** 2:30 Friction Reduction at the Orthodontic Wire/Ligature Interface by Wire-surface Modification. A.S. GILMAN and R.E. BAIER\* (*State University of New York at Buffalo, USA*).

**0063** 2:45 Effect of Beam Design on Frictional Forces at Molar Tube-Archwire Interface. J.H. GORDON, M. GANNON, V.B. DHURU, and D.J. FERGUSON\* (*Orthodontics, Marquette University, Milwaukee, WI; and Center for Advancement of Dental Education, St. Louis University, MO, USA*).

**0064** 3:00 Force Emission in Heat-treated NiTi Wires. A. WICHELHAUS, A. PALM\*, and F.G. SANDER (*Department of Orthodontics, University of Ulm, Germany*).

**0065** 3:15 Measurement of Vertical Forces in Three-dimensional Orthodontic Archwires. D.V. BUELOW\*, S.J. LINDAUER, K. UNDERWOOD, R.J. ISAACSON, and P.C. MOON (*School of Dentistry, MCV Campus, Virginia Commonwealth University, Richmond, USA*).

**0066** 3:30 The Magnetic Pole—Physical or Phantom? A.P. DIAS\* and B.W. DARVELL (*Oral Rehabilitation and Dental Materials Science, Faculty of Dentistry, University of Hong Kong, SAR*).

3:45 Discussion

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**Seq#: 14** **Wednesday, March 10, 2:00 pm - 4:00 pm**  
**Oral Session, Room A-4**

**Dental Materials - Properties of Composites & Fluoride-releasing Materials****Chairpersons: J. Kanca and S. Mitra**

**0067** 2:00 Class I Marginal Damage Consequent to Following Manufacturers' Instructions. J. KANCA\* (*Middlebury, CT, USA*).

**0068** 2:15 Interproximal Contact Measurement with High-viscosity Experimental Condensable Dental Composites. R.C. PETERSEN\* (*Division of Biological Materials, Northwestern University, Chicago, IL, USA*).

**0069** 2:30 Toothbrush Abrasion Resistance of a Plaque- and Acid-resistant Polymeric Coating. S.M. ROZZI\*, S.B. MITRA, C.C. KO, and W.H. DOUGLAS (*3M Company, St. Paul, MN; and University of Minnesota, Minneapolis, USA*).

**0070** 2:45 Color Standard Determination of Three Different Resin Composite Products. A. VICHI\*, M. FERRARI, and C.L. DAVIDSON (*University of Siena, Italy; and ACTA, University of Amsterdam, The Netherlands*).

**0071** 3:00 Photo-dynamic Mechanical Analysis: A Novel Method for Studying Dental Composites. D.A. TILBROOK\* and M. BRADEN (*IRC in Biomedical Materials, QMW College, London, UK*).

**0072** 3:15 Effects of Fluoride-releasing Materials on Dentin Demineralization *in vitro*. C. FRANCCI\*, T.G. DEATON, R.A. ARNOLD, E.J. SWIFT, Jr., J. PERDIGÃO, and J.W. BAWDEN (*University of São Paulo, Brazil; and the University of North Carolina, Chapel Hill, USA*).

**0073** 3:30 *In vitro* Comparison of Fluoride Release from Core Materials. R.I. GALVAN\*, F.J. ROBERTELLO, and T.A. LYNDE (*School of Dentistry, Virginia Commonwealth University, Richmond, USA*).

**0074** 3:45 Clinical Evaluation of ART Technique Using Fuji IX and Fuji Plus. E.M. SOUZA\*, R.S.S. TERADA, C.C. RODRIGUES, and M.F.L. NAVARRO (*Federal University of Parana; and Bauru Dental School, University of São Paulo, Brazil*).

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**Seq#: 15** **Wednesday, March 10, 2:00 pm - 4:00 pm**  
**Oral Session, Room 7**

**Experimental Pathology - HIV and AIDS****Chairpersons: S. Mallery and C. Barr**

**0075** 2:00 Infection of Papilloma-virus-transformed Oral Epithelial Cells by HIV-1. C. BARR\* and D. DORSKY (*University of Connecticut Health Center, Farmington, USA*).

**0076** 2:15 Reactivation Frequency of HSV-1 from Persistently Infected PC12 Cells. C.S. MILLER\*, R.J. DANAHER, C.S. FREEMAN, and R.J. JACOB (*College of Dentistry and Medicine, University of Kentucky, Lexington, USA*).

**0077** 2:30 Immune Profile of HIV-infected Minority Children with Oral Candidiasis. A. BARASCH\*, M.M. SAFFORD, E. VARAGIANNIS, R.N. LOPEZ, and R.V. KATZ (*University of Medicine and Dentistry of New Jersey, Newark; and University of Connecticut School of Dental Medicine, Farmington, USA*).

**0078** 2:45 Secretory Leukocyte Protease Inhibitor Expression and Regulation by EBV in Hairy Leukoplakia. J. WEBSTER-CYRIAQUE, D.C. SHUGARS\*, A. MAUSER, S. KENNEY, and N. RAAB-TRAUB (*University of North Carolina Schools of Dentistry and Medicine, Chapel Hill; and University of North Carolina Lineberger Cancer Research Center, Chapel Hill, USA*).

**0079** 3:00 Influence of Training on Accuracy of Diagnoses of HIV-related Oral Lesions. J.F. HILTON\*, A.J. CANCHOLA, A. FOX, R.M. GREENBLATT, D. GREENSPAN, J.S. GREENSPAN, H. KAMRATH, E. KOMAROF, M. KOMESU, M. LA MARRE, L. MacPHAIL, D. MAI, D. PETERSON, J. PHELAN, K. SCHORR, P. TSAKNIS, and M. REDFORD (*University of California, San Francisco, USA*).

**0080** 3:15 Circulating IgA Antibody-secreting Cells and Salivary IgA Antibodies to Candida Antigens in Acute and Chronic Oral Candidiasis. S.J. CHALLACOMBE\*, D. RAHMAN, E. ALBANIDOU-FARMAKI, I. KAYAVIS, and P. PAPANAYOTOU (*Department of Oral Medicine and Pathology, GKT at Guy's Hospital, London, UK; and Department of Stomatology, Aristotle University of Thessaloniki, Greece*).

**0081** 3:30 Redox-related Doxorubicin Cytotoxicity in AIDS-related Kaposi's Sarcoma Cells. S.R. MALLERY\*, P. PEI, Y.M. CLARK, G.M. NESS, and C.M. HOHL (*Ohio State University, Columbus, USA*).

**0082** 3:45 Oral Mucosal Langerhans Cells as Target, Vector, and Effector in HIV Infection. L. CHOU\*, D.M. WEST,

W. HE, and J.D. FIRTH (*Goldman School of Dental Medicine, Boston University, MA, USA*).

**Seq#: 16**      **Wednesday, March 10, 2:00 pm - 4:00 pm**  
**Oral Session, Room A-1**

**Microbiology/Immunology - Antibiotic-like Peptides/  
Endothelium Activation**

**Chairpersons: A. Weinberg and St.J. Crean**

**0083** 2:00 Bactericidal Activity of Leukocyte Defensins and Salivary Histatins. T.A. SAVELL\*, M.M. JEFFERSON, and E.L. THOMAS (*Dental Research Center and Biochemistry Department, University of Tennessee, Memphis, USA*).

**0084** 2:15 Detection of Human b-defensin-1 Peptide in Oral Epithelia. J. KIMBALL\*, B.A. DALE, A. WEINBERG, E. VALORE, and T. GANZ (*Departments of Oral Biology & Periodontics, University of Washington, Seattle; and Department of Medicine, UCLA, Los Angeles, CA, USA*).

**0085** 2:30 Expression of Human Beta-defensin-2 and Other Antimicrobial Peptides in Oral Tissues. Y. AÇIL\*, A. DUNSCHKE, R. SIEBERT, J.-M. SCHRÖDER, and S. JEPSEN (*Departments of Human Genetics and Dermatology, School of Dentistry, University of Kiel, Germany*).

**0086** 2:45 Inducible Expression of Human b-Defensin-2 (hBD-2) in Cultured Gingival Epithelial Cells. S. KRISANAPRAKORNKIT\*, A. WEINBERG, and B.A. DALE (*Departments of Oral Biology and Periodontics, University of Washington, Seattle, USA*).

**0087** 3:00 Post-translational Modifications of the Lantibiotic Mutacin II. T.T. MAI\*, P. CHEN, R.E. KRULL, L. COWARD, P.W. CAUFIELD, N.R. KRISHNA, S. BARNES, and J. NOVAK (*University of Alabama at Birmingham, USA*).

**0088** 3:15 Protein Kinase C-regulated Macrophage Spreading and Formation of Tubular Lysosomes. L. YUE and J. LI\* (*Department of Oral Biology, College of Dentistry, University of Illinois at Chicago, USA*).

**0089** 3:30 High-frequency Current in Endodontic Therapy: An *in vitro* Study. C. HAFFNER\*, C. BENZ, A. MEHL, M. FOLWACZNY, and R. HICKEL (*Department of Restorative Dentistry and Periodontology, University of Munich, Germany*).

**0090** 3:45 Endothelial Cell Activation by Surface-associated Material from *Staphylococcus aureus*. St.J. CREAN\*, S. MEGHJI, S. POOLE, M. WILSON, M. HARRIS, B. HENDERSON, and S. NAIR (*Departments of Maxillofacial Surgery & Microbiology Research, Eastman Dental Institute, London; and National Institute for Biological Standards and Control, UK*).

**Seq#: 17**      **Wednesday, March 10, 2:00 pm - 4:00 pm**  
**Oral Session, Room 17**

**Neuroscience/TMJ - Sensory and Motor Functions: Animal Studies**

**Chairpersons: D. Dessem and A. McMillan**

**0091** 2:00 Mustard Oil Application to Molar Tooth Induces Brainstem c-fos Expression. H. NOMURA, J.W. HU, and B.J. SESSLE\* (*Faculty of Dentistry, University of Toronto, Ontario, Canada*).

**0092** 2:15 Trigeminal Fos Expression Following Pulpal Inflammation in Ferrets. S. CHAISIN\*, A. SIGURDSSON, A.R.

LIGHT, M.V.O. NÄRHI, and W. MAIXNER (*Dental Research Center, Department of Endodontics, Department of Physiology, University of North Carolina at Chapel Hill, USA; and Department of Physiology, University of Turku, Finland*).

**0093** 2:30 Distribution of Fos-like Immunoreactivity Following Temporomandibular Joint Inflammation in Cats. B. ELLIS\* and N. CAPRA (*Oral and Craniofacial Biological Science, University of Maryland Dental School, Baltimore, USA*).

**0094** 2:45 Biophysical Characterization of Trigeminal Neurons Innervating the Rat Dental Pulp. D.J. CHIEGO, Jr.\* and R.M. BRADLEY (*School of Dentistry, University of Michigan School of Dentistry, Ann Arbor, USA*).

**0095** 3:00 Trigeminal Ganglion Masseter Muscle Afferent Neurons Exhibit Diverse Electrical Properties. D. DESSEM\*, W. CWEIBER, P. SOMOHANO, and P. LUO (*University of Maryland Dental School, Baltimore, USA*).

**0096** 3:15 Evidence that Neurons of Ventral and Dorsal Regions of Nucleus Pontis Caudalis Have Opposing Roles in Masticatory Pattern Generation. G. SCOTT\* and J.P. LUND (*McGill University and Université de Montréal, Montréal, Canada*).

**0097** 3:30 Relation between Isometric Force and Stimulation Rate in Rabbit Masseter Motor Units. S.H.S. KWA\* and W.A. WEIJS (*Department of Functional Anatomy, ACTA, Amsterdam, The Netherlands; Department of Prosthodontics, University of North Carolina, Chapel Hill, USA; and Department of Functional Morphology, University of Utrecht, The Netherlands*).

3:45 Discussion

**Seq#: 18**      **Wednesday, March 10, 2:00 pm - 4:00 pm**  
**Oral Session, Room 2**

**Periodontal Research – Diagnosis/Epidemiology - Assessment of Periodontal Disease and Progression in Populations**

**Chairpersons: M. Reddy and T. Rams**

**0098** 2:00 Estimating Periodontal Disease in a Multi-ethnic Urban Community. B. BODEN-ALBALA\*, R. SACCO, D. SADOWSKY, M. YOUNG, M. ELKIND, S. ENGBRETSON, P. PAPAPANOU, I. LAMSTER, and M. DESVARIEUX (*Columbia University, New York, NY, USA*).

**0099** 2:15 A Prospective Longitudinal Epidemiological Study on Periodontal Status in a Swedish Population. A. HUGOSON and L. LAURELL\* (*The Institute for Postgraduate Dental Education, Jönköping; and Postgraduate Dental Education Center, Örebro, Sweden*).

**0100** 2:30 Risk for Periodontal Disease. A Longitudinal Study. O. NORDERYD, A. HUGOSON\*, and G. GRUSOVIN (*The Institute for Postgraduate Dental Education, Jönköping, Sweden*).

**0101** 2:45 The Pattern of Initial Loss of Periodontal Attachment in Man. L. MAYFIELD, H. LÖE\*, H. BOYSEN, Å. ÅNERUD, N.P. LANG, and W. BÜRGIN (*School of Dental Medicine, University of Bern, Switzerland*).

**0102** 3:00 Risk of Periodontitis Recurrence by Tooth Surface Location. T.E. RAMS\*, M.A. LISTGARTEN, and J. SLOTS (*Temple University and University of Pennsylvania, Philadelphia; and University of Southern California, Los Angeles, USA*).

**0103** 3:15 Longitudinal Study of Alveolar Crest Height and Tooth Loss. E.E. MACHTEI\*, M. KRETCHMER, R.

DUNFORD, E. HAUSMANN, G. DAVIES, M. SHLOSSMAN, S.G. GROSSI, and R.J. GENCO (*Department of Oral Biology, State University of New York, Buffalo, USA; and Periodontal Unit, I.I.T.-Rambam, Haifa, Israel*).

**0104** 3:30 Clinical Indicators of Periodontal Disease Progression: A Discriminant Analysis. M. REDDY\*, H.M. PROSKIN, R.L. JEFFCOAT, N.C. GEURS, and M.K. JEFFCOAT (*School of Dentistry, University of Alabama at Birmingham, USA*).

**0105** 3:45 The Value of Partial Recording in Periodontal Research—Multilevel Analysis. M.S. GILTHORPE\*, A.T. ZAMZURI, and G.S. GRIFFITHS (*Eastman Dental Institute, University of London, UK*).

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**Seq#: 19**      **Wednesday, March 10, 2:00 pm - 4:00 pm**  
**Oral Session, Room 8**

### Periodontal Research – Therapy - Gingival Recession

**Chairpersons: R. Caffesse and H.-L. Wang**

**0106** 2:00 Clinical Comparison of Two Techniques for Treatment of Gingival Recession. H.-L. WANG\*, R.L. MACNEIL, M. LABADIE, Y. SHYR, and P. BUNYARATAVEJ (*University of Michigan, Ann Arbor; and Vanderbilt University, Nashville, TN, USA*).

**0107** 2:15 BioMend™ Collagen Grafts for Gingival Recession Treatment in Humans. R.A. YUKNA, G.H. EVANS, and E.T. MAYER\* (*Louisiana State University School of Dentistry, New Orleans, USA*).

**0108** 2:30 Comparison of Free Autogenous Connective Tissue Grafts and Bioabsorbable Membranes in the Treatment of Gingival Recession. M. GRAMKEE\*, D. ASSAD, B. PAUL, and B. NICOLL (*Naval Dental School, Bethesda, MD, USA*).

**0109** 2:45 Clinical Study of Connective Tissue Grafts for Root Coverage on Teeth with Cervical Lesions With and Without Restorations. S.D. THANIK\* and N. BISSADA (*Case Western Reserve University, Cleveland, OH, USA*).

**0110** 3:00 Citric Acid Demineralization and Subepithelial Connective Tissue Grafts. R.G. CAFFESSE\*, M. DELAROSA R., N. GARZA, A. MUNNE, L.J. MONDRAGON, and R. WELTMAN (*University of Texas at Houston Dental Branch, USA; and University of Nuevo Leon, Monterrey, Mexico*).

**0111** 3:15 AlloDerm Acellular Dermal Matrix Used for Root Coverage. M.E. AICHELMANN-REIDY\*, R.A. YUKNA, H.F. NASR, and E.T. MAYER (*Louisiana State University School of Dentistry, New Orleans, USA*).

**0112** 3:30 Treatment of Recessions with GTR and Enamel Matrix Proteins in Monkeys. A. SCULEAN\*, N. DONOS, E. REICH, M. BRECX, and T. KARRING (*Department of Periodontology, University of the Saarland, Homburg, Germany; and Department of Periodontology, University of Aarhus, Denmark*).

**0113** 3:45 Revascularization and Histological Evaluation of the Connective Tissue Graft. R. GUIHA\*, R.G. CAFFESSE, and L. MOTA (*Dental Branch, University of Texas at Houston Health Science Center, USA*).

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**Seq#: 20**      **Wednesday, March 10, 2:00 pm - 4:00 pm**  
**Oral Session, Room 16**

**Pharmacology, Therapeutics, & Toxicology - Pain**  
**Control: Analgesics and Anesthetics**

**Chairpersons: G. Jeffers and R. Seymour**

**0114** 2:00 The Effect of Pre-emptive and Post-operative Ibuprofen for Orthodontic Pain. M. BERNHARDT, K.A. SOUTHARD, K. BATTERSON\*, K. BAKER, J.R. JAKOBSEN, and H. LOGAN (*University of Iowa, Iowa City, USA*).

**0115** 2:15 Buffered Ketoprofen in Post-operative Pain after Third Molar Surgery. R.A. SEYMOUR\* and J.R. HAWKESFORD (*Departments of Restorative Dentistry and Oral Surgery, University of Newcastle upon Tyne, UK*).

**0116** 2:30 Post-operative Pain Experience after Third Molar Surgery. M.B. COMFORT\*, A.S.K. TSE, and A.C.C. TSANG (*Faculty of Dentistry, University of Hong Kong, China*).

**0117** 2:45 Dose-Range Evaluation of Nitroglycerin for Post-operative Pain following Oral Surgery. L. JABER\*, J.S. BRAHIM, J. ROWAN, and R.A. DIONNE (*NIDCR/NIH, Bethesda, MD, USA*).

**0118** 3:00 Comparison of Two Topical Anesthetics for Anesthesia of Human Gingiva. J.G. MEECHAN\* and A.S. McMILLAN (*University of Newcastle upon Tyne, UK; and University of Hong Kong*).

**0119** 3:15 Clinical Comparison of Capsaicin and Common Anesthetic Agents for Topical Intra-oral Anesthesia. P. FOTOS\* and P.D. ELEAZER (*University of Louisville School of Dentistry, KY, USA*).

**0120** 3:30 Potential Use of Adjuvant Drugs to Enhance Lidocaine Local Anesthesia. E.Y. LEE\* and F.L. SMITH (*School of Dentistry, Medical College of Virginia Campus of Virginia Commonwealth University, Richmond, USA*).

**0121** 3:45 Tissue Adhesives in the Treatment of Aphthous Ulcers. M.J. KUTCHER\*, J.B. LUDLOW, A.D. SAMUELSON, and S. PUSEK (*University of North Carolina, Chapel Hill, USA*).

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**Seq#: 21**      **Wednesday, March 10, 2:00 pm - 4:00 pm**  
**Oral Session, Room 10**

### Prosthodontics - Arthur R. Frechette Research Award Competition/Bur Efficiency/Maxillofacial Prosthesis

**Chairpersons: S. Rosenstiel and N. Chaffee**

**0122** 2:00 Bond Strengths of Polymer-glass to Three Cast Alloys. K. KURTZ\*, C. OHKUBO, A. LAVACCA, and T. OKABE (*School of Dental and Oral Surgery, Columbia University, New York; Baylor College of Dentistry, TAMUS, Dallas, TX; and Montefiore Medical Center, Bronx, NY, USA*).

**0123** 2:15 Physical and Chemical Properties of Failed Hydroxyapatite-coated Dental Implants. D. MacDONALD\*, F. BETTS, S. DOTY, and A.L. BOSKEY (*Veterans' Administration Medical Center, Bronx, NY; Columbia University School of Engineering, New York, NY; and Hospital for Special Surgery, New York, NY, USA*).

**0124** 2:30 Wear Measurement of Posterior Resin Composite Restorations Using Profilometry. A.K. OLSON\*, I.J. PESUN, and G.C. ANDERSON (*School of Dentistry, University of Minnesota, Minneapolis, USA*).

**0125** 2:45 Osteoblast Response to Ti Implant Surface Roughness is Regulated by 1,25-(OH)<sub>2</sub>D<sub>3</sub> and Mediated by Phospholipase A<sub>2</sub> and Protein Kinase A. R. SAGUN\*, C.H. LOHMANN, V.L. SYLVIA, D.D. DEAN, Z. SCHWARTZ, and B.D. BOYAN (*University of Texas Health Science Center and Lackland Air Force Base, San Antonio, USA; and Hebrew University, Jerusalem, Israel*).

**0126** 3:00 A Comparison of Implant Impression Materials. A.G. WEE\* and P. MONAGHAN (*College of Dentistry, Ohio State University, Columbus, USA*).

**0127** 3:15 Evaluation of Single-patient-use Dental Diamond Burs. E.S. PILCHER\*, J.D. TIETGE, and R.A. DRAUGHN (*College of Dental Medicine, Medical University of South Carolina, Charleston, USA*).

**0128** 3:30 Effects of Fibers on Silicone Resin Bonding for Maxillofacial Prostheses. R. YOUNG\*, R.R. WANG, and T.R. JASINEVICIUS (*CWRU School of Dentistry, Cleveland, OH, USA*).

**0129** 3:45 Protective Skin Dressing Effects on Adhesive Retention of Maxillofacial Prostheses. S. KIAT-AMNUAY\*, L. GETTLEMAN, Z. KHAN, and L.J. GOLDSMITH (*School of Dentistry, University of Louisville, KY, USA*).

**Seq#: 22** **Wednesday, March 10, 2:00 pm - 4:00 pm**  
**Oral Session, Room 9**

### **Pulp Biology - PA Lesions, Leakage, Odontoblasts**

**Chairpersons: P. Stashenko and R. Pileggi**

**0130** 2:00 Quantitation of Periapical Bone Destruction in Mice by Micro-computed Tomography. K. BALTO, R. MÜLLER, D.C. CARRINGTON, and P. STASHENKO\* (*Department of Cytokine Biology, Forsyth Dental Center; and Biomechanics Laboratory, Beth Israel Deaconess Hospital, Boston, MA, USA*).

**0131** 2:15 Efficacy of Root-end Filling Materials in Ferrets Using Radioactive Bacteria. R. PILEGGI\*, G.N. GLICKMAN, and G.R. HOLLAND (*University of Texas, Houston; and University of Michigan, Ann Arbor, USA*).

**0132** 2:30 Etching Agents' Influence on Smear Plugs of Resected Root Ends. M. MAJOR\*, A. HAND, C.B. PEARSON, and K. SAFAVI (*University of Connecticut, Farmington, USA*).

**0133** 2:45 Partial Characterization and Localization of Decorin and Biglycan in Bovine Pulp and Predentin. H. CHENG\*, K. UZAWA, S. YAMAUCHI, and M. YAMAUCHI (*Dental Research Center, University of North Carolina at Chapel Hill, USA*).

**0134** 3:00 Characterization of a 1.7-kb 3' end Extension of PEX cDNA in Rat Odontoblasts. R. DEY\* and M.-I. CHO (*Department of Oral Biology, State University of New York at Buffalo, USA*).

**0135** 3:15 Reactionary Dentinogenesis, Cell Survival, and Tissue Treatments *in vitro*. P.E. MURRAY, A.J. SMITH\*, P.J. LUMLEY, and H.F. ROSS (*Schools of Dentistry and Medicine, University of Birmingham, UK*).

**0136** 3:30 TGF- $\beta$  Isoform Expression in Healthy and Carious Mature Human Molars. A.J. SLOAN\*, J.B. MATTHEWS, and A.J. SMITH (*Oral Biology, School of Dentistry, University of Birmingham, UK*).

**0137** 3:45 Rat Pulp Hypoxia from Local Anesthesia and Cavity Preparation. K.R. BAUMGARDNER\* (*University of Michigan, Ann Arbor, USA*).

**THURSDAY (Morning)**

**PLENARY SESSION #1**

**Thursday, 8:15 to 9:00 am Ballroom A**

**"Tissue Engineering and Biochemistry"**

**JOSEPH VACANTI**  
**(Children's Hospital, Boston, MA)**

**Seq#: 23** **Thursday, 9:00 am - 11:00 am**  
**Symposium, Ballroom A**

**Craniofacial Biology, Dental Materials, Implantology Research, Mineralized Tissue, and Periodontal Research Groups - Paths to Engineering Craniofacial and Oral Tissue Behavior**

**Chairpersons: J.C. Keller and C.M. Stanford**

**0138** 9:00 Opening Comments.  
9:10 Gene Expression and the Manipulation of Craniofacial and Oral Hard Tissues. M. MacDOUGALL (*University of Texas, San Antonio, USA*).

9:35 Technological Development of Biologically Interactive Materials. K.E. HEALY (*Northwestern University, Chicago, IL, USA*).

10:00 Inhibition of Tissue Responses by Infectious Agents. M. TONETTI (*Universität Bern, Switzerland*).

10:25 Panel Discussion.

**Seq#: 24** **Thursday, 9:00 am - 11:00 am**  
**Symposium, Ballroom B**

**Neuroscience and Pulp Biology Groups - Neuronal Modulators of Wound Healing**

**Chairpersons: K.E. Alley and N. Capra**

**0139** 9:00 Opening Comments.  
9:05 Psychological Stress Slows Human Wound Healing. P.T. MARUCHA (*Ohio State University, Columbus, USA*).

9:30 Cannabinoid Regulation of Capsaicin-sensitive Fibers in Dental Pulp. K.M. HARGREAVES (*University of Texas, San Antonio, USA*).

9:55 Dental Injury Models and Neuroinflammatory Interactions. M.R. BYERS (*University of Washington, Seattle, USA*).

10:20 Neuroendocrine Modulation of Wound Healing in a Murine Model. J.F. SHERIDAN (*Ohio State University, Columbus, USA*).

10:50 Discussion.

**Seq#: 25** **Thursday, 9:00 am - 11:00 am**  
**Symposium, Room 2**

**CADR - Life at the Edge: Matrix Remodeling at Cell Adhesions**

**Chairpersons: C. McCulloch and M. McKee**

**0140** 9:00 Opening Comments.  
9:15 Cell-Substratum Frontiers in the Periodontium and in Implantology. M. MCKEE (*McGill University, Montreal, Canada*).

9:40 Deformation of the Extracellular Matrix by the Cytoskeleton. P. JANMEY (*Brigham and Women's Hospital, Boston, MA, USA*).



10:05 Role of Integrins in Remodeling Periodontal Tissues in Health and Disease. H. LARJAVA (*University of British Columbia, Vancouver, Canada*).

10:30 Cell Surface Binding and Activation of Matrix Metalloproteinases. C. OVERALL (*University of British Columbia, Vancouver, Canada*).

10:55 Discussion.

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**Seq#: 26 Thursday, March 11, 9:00 am - 11:00 am  
Poster Discussion Session, Room 13**

**Behavioral Sciences & Health Services Research -  
Epidemiological Methods**

**Chairpersons: V. Spolsky and M. Macek**

**0141** 9:00 The Assessment of Bias in Oral Health Longitudinal Studies. H.L. KIRCHNER\*, J.H. LEMKE, and S.M. LEVY (*Colleges of Dentistry and Medicine, University of Iowa, Iowa City, USA*).

**0142** 9:15 Changes in Prevalence of Xerostomia among Rheumatoid Arthritis Patients (1993-1997). S.L. RUSSELL\* and S. REISINE (*College of Dentistry, New York University; and University of Connecticut Health Center, Farmington, USA*).

**0143** 9:30 Predicting the OHSI from Partial Mouth Scores. V.W. SPOLSKY\*, M. MARCUS, and C. DER-MARTIROSIAN (*University of California at Los Angeles School of Dentistry and Public Policy and Social Research; and University of California at Los Angeles/Drew Minority Oral Health Research Center, USA*).

**0144** 9:45 Family Aggregation of Periodontal Status in a Two-generation Cohort. S.A. GANSKY\*, J.A. WEINTRAUB, S. SHAIN, and MULTI-PIED INVESTIGATORS (*University of California, San Francisco, USA*).

**0145** 10:00 Caries in Scottish Pre-school Children Assessed at Two Diagnostic Thresholds. N.B. PITTS\*, Z.J. NUGENT, H. BALLANTYNE, C. LONGBOTTOM, and J. RADFORD (*Dental Health Services Research Unit and Dental School, University of Dundee, Scotland, UK*).

**0146** 10:15 Delphi Approach for Complex Clinical Problems, Decision Analysis, and Research. C.K. CRAMER\*, M.T. SCHECHTER, J.R. BUSSE, S.B. SHEPS, and J.B. EPSTEIN (*University of Mississippi Medical Center, Jackson, USA; and University of British Columbia, Vancouver, Canada*).

**0147** 10:30 Meta-analysis of Surgical Treatment of Root Coverage. F. DALL'OLMO, C. HAYES\*, J. HANRATTY, E. COHEN, and C. LEONE (*Schools of Dental Medicine, Tufts University and Harvard University, Boston, MA, USA*).

**0148** 10:45 Bibliometric Analysis of Evidence-based Dental Therapeutics Literature. R. BADOVINAC\*, S. CONWAY, and R. NIEDERMAN (*Office of Evidence-based Dentistry, Harvard School of Dental Medicine; and Countway Library of Medicine, Boston, MA, USA*).

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**Seq#: 27 Thursday, March 11, 9:00 am - 11:00 am  
Oral Session, Room 3**

**Cariology Research - Preventive Agents**

**Chairpersons: J. Wefel and H. Duschner**

**0149** 9:00 Remineralization of Artificial Enamel Lesions Using an Experimental Two-paste System Dentifrice. A. OMRAN

and J.S. WEFEL\* (*Dows Institute for Dental Research, University of Iowa, Iowa City, USA*).

**0150** 9:15 Evaluation of Slow-release Fluoride Tablet *in vivo*. Y. GE\* and Q. WANG (*Caries Research Lab, School of Stomatology, Beijing Medical University, China*).

**0151** 9:30 Effect of F-releasing Restorative Material on De/Remineralization of Roots. T.H. JORDAN\*, R. BRADSHAW, S. FRAHM, M.M. HOGAN, A. SEGURA, K.J. DONLY, J.D. HARLESS, and J.S. WEFEL (*University of Iowa, Iowa City, and Cornell College, Iowa, USA*).

**0152** 9:45 Adhesive Restorative Materials' Effects on Secondary Root Caries: An *in vitro* Polarized Light Microscopic Study. J. HICKS\* and C. FLAITSZ (*Texas Children's Hospital; Baylor College of Medicine; and University of Texas-Houston Health Science Center Dental Branch, USA*).

**0153** 10:00 Penetration of an Antimicrobial Primer into Artificial Caries Lesions. S. IMAZATO\*, A.W.G. WALLS, D. JOHNSON, and S. EBISU (*Faculty of Dentistry, Osaka University, Japan; and Dental School, University of Newcastle upon Tyne, UK*).

**0154** 10:15 Comparative Study of Preventive Effects of Lanthanides and Fluoride on Human Experimental Root Surface Caries-like Lesion. W. ZHANG\*, H. JIN, and A. LIU (*Department of Cariology, Shanghai Research Institute of Stomatology, China*).

**0155** 10:30 Interactions of Stannous Fluoride and Amine Fluorides with Human Enamel *in vitro*. K. SCHENK-MEUSER\*, H.A. DUSCHNER, H. DUSCHNER, and H. JUNGCLAS (*Universities of Mainz and Marburg, Germany*).

**0156** 10:45 Effect of Calcium on Fluoride Taken Up by Enamel. A.E. WINSTON\*, D.P. JOHNSON, and A. NUNEZ (*Enamelon Inc., Cranbury, NJ, USA*).

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**Seq#: 28 Thursday, March 11, 9:00 am - 11:00 am  
Oral Session, Room 12**

**Craniofacial Biology - TMJ Morphology: Experimental Studies  
(joint session w/ Neuroscience/TMJ)**

**Chairpersons: A. Hannam and S. Herring**

**0157** 9:00 Effects of Orthopedic Forces on the Articular Eminence. M. OBERHEIM\*, M. TASSICK, R.A. COOPER, and J.J. MAO (*Departments of Orthodontics and Dentofacial Orthopedics and Human Engineering, University of Pittsburgh, PA, USA*).

**0158** 9:15 Strain-rate-dependent Anisotropic Properties of the Porcine TMJ Disc. M.J. BRUNO\*, M.W. BEATTY, J.C. NICKEL, and L.R. IWASAKI (*College of Dentistry, University of Nebraska Medical Center, Lincoln, USA*).

**0159** 9:30 Prediction of Masticatory Biomechanics in the Pig Temporomandibular Joint. G.E.J. LANGENBACH\*, A.G. HANNAM, Z.J. LIU, and S.W. HERRING (*University of British Columbia, Vancouver, Canada; and University of Washington, Seattle, USA*).

**0160** 9:45 Bone Strains and Internal Bony Pressures during Masticatory Muscle Contraction. Z.J. LIU\*, K. RAFFERTY, S.C. PEDERSEN, and S.W. HERRING (*Department of Orthodontics, University of Washington, Seattle, USA*).

**0161** 10:00 Weeping Lubrication and Fluid Dynamics of the TMJ Disc. J.C. NICKEL\*, L.R. IWASAKI, D.E. FEELY, and K.D. STORMBERG (*College of Dentistry, University of Nebraska Medical Center, Lincoln; and San Diego, CA, USA*).

**0162** 10:15 The Relationship of Gender to Temporomandibular Retrodiscal Tissues. A. MARIOTTI, D. RUMPF\*, O. MALAKOVA, and B. COOPER (*Ohio State University, Columbus; and University of Florida, Gainesville, USA*).

**0163** 10:30 BrdU Immunocytochemistry of Cell Proliferation within the Pig TMJ. J.D. DECKER\* and S.W. HERRING (*University of Washington, Seattle, USA*).

10:45 Discussion

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**Seq#: 29** **Thursday, March 11, 9:00 am - 11:00 am**  
**Poster Discussion Session, Room 14**

**Craniofacial Biology - Perception and Soft Tissue Changes**

**Chairpersons: A. Aljundi and B.-H. Joo**

9:00 Poster Viewing Time

**0164** 9:30 Orthodontic Consultation: A Comparison of Traditional and Computer-based Methods. M.B. ECKLER, F.J. SOBKOWSKI, D.J. FERGUSON, and K.T. JARRELL\* (*Center for Advancement of Dental Education, St. Louis University, MO, USA*).

**0165** 9:38 The Relationship between Perception of Self and Perception of Others Regarding Profile Esthetics. V.K. CUMBEE, F.J. SOBKOWSKI, D.J. FERGUSON, and J.L. CASKEY\* (*Center for Advancement of Dental Education, St. Louis University, MO, USA*).

**0166** 9:46 Orthodontist's and Lay Person's Perception of Facial Profile Following Bionator and Headgear Therapies. A.R. OSSII\*, S.D. KEELING, S.P. MCGORRAY, G.J. KING, C. DOLCE, and T.T. WHEELER (*Department of Orthodontics, University of Florida, Gainesville, USA*).

**0167** 9:54 Anthropometric Bases of Ethnic Classification of Asian Faces. N.K. ANDERSON\*, M. PARK, V.S. JOHNSTON, and D.B. GIDDON (*Harvard School of Dental Medicine; Columbia University; and New Mexico State University, USA*).

**0168** 10:02 Soft Tissue Profile Changes during Orthodontic Treatment of Growing Subjects. T.-M. XU\*, S. BAUMRIND, S. CARLSON, and R.L. BOYD (*University of the Pacific, San Francisco, CA; University of Medicine and Dentistry of New Jersey, Newark, USA; and Beijing Medical College, China*).

**0169** 10:10 Soft Tissue Changes of Extraction and Non-extraction Class II Div I Malocclusion. B.H. JOO\*, M. BECK, and K. VIG (*Ohio State University, Columbus, USA*).

**0170** 10:18 Facial Profile Changes Resulting from Orthodontic Treatment of Class I "Borderline" Extraction Cases. A. ALJUNDI\*, F.J. SOBKOWSKI, and D.J. FERGUSON (*Center for Advancement of Dental Education, St. Louis University, MO, USA*).

**0171** 10:26 The Effect of Anterior Tooth Retraction on Lip Position of Orthodontically-treated Adult Asians. J. KUSNOTO\* (*Department of Orthodontics, College of Dentistry, University of Illinois at Chicago, USA*).

10:34 Poster Discussion Time

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**Seq#: 30** **Thursday, March 11, 9:00 am - 11:00 am**  
**Oral Session, Room A-4**

**Dental Materials - Ceramics & Bioceramics: Fracture Mechanics and Microstructure**

**Chairpersons: I. Denry and R. Mackert**

**0172** 9:00 Failure Mode and Fracture Resistance of Bilayered Ceramic Disks. N. WAKABAYASHI\* and K.J. ANUSAVICE (*Tokyo Medical and Dental University, Japan; and University of Florida, Gainesville, USA*).

**0173** 9:15 Bonding of Low-fusing Dental Porcelain to Silver-coated Titanium. M. KÖNÖNEN\*, P. VARPAVAARA, and J. KIVILAHTI (*University of Helsinki and Helsinki University of Technology, Finland; and University of Aarhus, Denmark*).

**0174** 9:30 Crystallization of Leucite in Dental Porcelains in the Temperature Range 650°-1000° C. J.R. MACKERT, Jr.\*, A.L. WILLIAMS, and C.M. RUSSELL (*Medical College of Georgia, Augusta, USA*).

**0175** 9:45 Effect of Annealing on Crack Healing Behavior of a Machinable Dental Ceramic. I.L. DENRY\* and J.A. HOLLOWAY (*Ohio State University, Columbus, USA*).

**0176** 10:00 Dispersion Strengthening of CICERO All-ceramic Core Ceramic. M. BOSMAN, J.M. van der ZEL\*, and C.L. DAVIDSON (*Department of Dental Materials Science, Academic Centre for Dentistry, Amsterdam; and Elephant Dental bv, Hoorn, The Netherlands*).

**0177** 10:15 Stress Corrosion Crack Growth in Bioactive Glasses. D.R. BLOYER\*, J.M. McNANEY, A.P. TOMSIA, S.J. MARSHALL, and G.W. MARSHALL (*Lawrence Berkeley National Laboratory, CA; and University of California at San Francisco, USA*).

**0178** 10:30 Graded Bioactive Glass Coatings on Ti6Al4V Implants. J.M. GOMEZ-VEGA\*, E. SAIZ, A.P. TOMSIA, G.W. MARSHALL, and S.J. MARSHALL (*Lawrence Berkeley National Laboratory, CA; and University of California, San Francisco, USA*).

**0179** 10:45 Sol-gel Processing of High-yield, Dense Stabilized Zirconia BioCeramics. T. SHAH\* and K. THORNE (*Department of Restorative Dentistry, University of Illinois at Chicago, USA*).

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**Seq#: 31** **Thursday, March 11, 9:00 am - 11:00 am**  
**Oral Session, Room A-5**

**Dental Materials - Polyalkenoate/Resin Cements and Fluoride Release**

**Chairpersons: J. Powers and R. Van Noort**

**0180** 9:00 Laboratory Evaluation of Hybrid and Conventional Glass-ionomer Band Cements. D.T. MILLETT\*, A. CUMMINGS, S. LETTERS, E. ROGER, and J. LOVE (*Orthodontic Unit, Glasgow Dental School; Dental Materials Science, Glasgow Dental Hospital; and Robertson Centre for Biostatistics, University of Glasgow, UK*).

**0181** 9:15 Sorption-Desorption Kinetics of Thin Resin Films. M.D. CHAZAKIS and R. VAN NOORT\* (*Department of Restorative Dentistry, School of Clinical Dentistry, University of Sheffield, UK*).

**0182** 9:30 *In vitro* Wear of Resin-modified Glass Ionomer and Compomer. K. SHINKAI\*, Y. KATOH, and S. SUZUKI (*Nippon Dental University at Niigata, Japan; and University of Alabama at Birmingham, USA*).

**0183** 9:45 Properties of Resin Cements as Affected by Curing Modes. P. DORAY\*, D. LI, M. EL-SHEIKH, and J.M. POWERS (*Houston Biomaterials Research Center, TX, USA; and Tanta University, Egypt*).

**0184** 10:00 Early Strength and Fluoride Release of Three Different Glass Ionomers. W.A. WILTSHIRE\*, S.J. BOTHA, F. BOTHA, and R. SENEKAL (*University of Manitoba, Winnipeg, Canada; and University of Pretoria, South Africa*).

**0185** 10:15 Fluoride Glass-ionomer Cement (GIC) Interactions: Effects of Different Counterions. P. HADLEY\*, R.W. BILLINGTON, and G.J. PEARSON (*Eastman Dental Institute, London, UK*).

**0186** 10:30 Variables Influencing the Fluorine Ion Release from Glass-ionomer Cements. C. SHEN\*, N.J. GRIMAUDO, and S.-P. SHEN (*Department of Dental Biomaterials, College of Dentistry, University of Florida, Gainesville, USA*).

**0187** 10:45 Real-time Kinetics of Fluoride Release from Dental Restorative Materials. C.M. CAREY\* and K.M. HOFFMAN (*American Dental Association Health Foundation, Paffenbarger Research Center, National Institute of Standards and Technology, Gaithersburg, MD, USA*).

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**Seq#: 32** **Thursday, March 11, 9:00 am - 11:00 am**  
**Oral Session, Room A-3**

### Dental Materials - Polymer Degradation and Cellular Response

**Chairpersons: A. Petschelt and D. Nathanson**

**0188** 9:00 Extractable Ingredients of Aged Composites and Compomers. A. PETSCHELT\*, W. DISTLER, H. BRÖNNER, and M. PELKA (*Policlinic for Operative Dentistry and Periodontology, University of Erlangen-Nuremberg, Germany*).

**0189** 9:15 Effects of Extraction Media upon Fluoride Release from a Resin-modified GIC. W. GEURTSSEN, P. BUBECK\*, G. LEYHAUSEN, and F. GARCÍA-GODOY (*Medical University Hannover, Germany; and University of Texas at San Antonio, USA*).

**0190** 9:30 Biodegradation of Model Composites: Dependence on Resin Chemistry. Y. FINER\* and J.P. SANTERRE (*Faculty of Dentistry, University of Toronto, ON, Canada*).

**0191** 9:45 Chlorhexidine Release from Cold Cure Methacrylates. P.D. RIGGS\*, M.P. PATEL, and M. BRADEN (*Biomaterials in Relation to Dentistry, IRC in Biomedical Materials, QMW, University of London, UK*).

**0192** 10:00 Release of Residual Monomers from Light-cured and Autopolymerized Dental Polymers. V.M. MIETTINEN\* and P.K. VALLITTU (*Institute of Dentistry and Biomaterials Project, University of Turku, Finland*).

**0193** 10:15 Microstructural Control of CAD-based Tissue Engineering Scaffolds. B.M. WU\*, M.J. CIMA, and L.G. GRIFFITH (*Goldman School of Dental Medicine, Boston University; and Massachusetts Institute of Technology, USA*).

**0194** 10:30 *In vitro* Estrogenic Activity of Leachable Components from Dental Sealants and Composites. D. NATHANSON\*, M. GHULMAN, N. ASHAYERI, and L. CHOU (*Goldman School of Dental Medicine, Boston University, MA, USA*).

**0195** 10:45 Comparative Studies of Cytotoxicity of Dental Acrylates *in vitro*. Y. LIU\*, S. MA, P. SUGARMAN, M. BJON HOLM, and J. EKSTRAND (*Karolinska Institutet, Huddinge, Sweden; and University of Queensland, St. Lucia, Australia*).

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**Seq#: 33** **Thursday, March 11, 9:00 am - 11:00 am**  
**Oral Session, Room A-2**

### Dental Materials - Tooth Structure, Biological Interactions

**Chairpersons: P. Messersmith and M. Otsuki**

**0196** 9:00 20-year Analysis of Basic vs. Applied DMG-IADR Research Abstracts. S.C. BAYNE\* and S.J. MARSHALL (*School of Dentistry, University of North Carolina, Chapel Hill; and School of Dentistry, University of California at San Francisco, USA*).

**0197** 9:15 Tensile Strength of Crown and Root Dentin of Bovine Teeth. K. TONAMI\*, F. NAKANO, H. TAKAHASHI, F. NISHIMURA, and N. KUROSAKI (*Faculty of Dentistry, Tokyo Medical and Dental University, Japan*).

**0198** 9:30 Detection of Apical Microleakage in Teeth by Means of Computerized Axial Tomography. C.M. AGUILAR, C.J.M. JUNCO, B.S. ANTUNA, M. SAAVEDRA, and L. GARCIA-ARANDA\* (*Universidad Nacional Autónoma de México*).

**0199** 9:45 Pulpal Response to Two Adhesive Systems Using Self-etching Primer. M. OTSUKI\*, H. SONODA, Y. KITASAKO, M. ARAKAWA, and J. TAGAMI (*Department of Operative Dentistry, Tokyo Medical and Dental University, Japan*).

**0200** 10:00 Biomimetic Compartmental Control of Transglutaminase Enzyme Activity and Protein Crosslinking. E. WESTHAUS and P. MESSERSMITH\* (*Northwestern University, Chicago, IL, USA*).

**0201** 10:15 The Antibacterial Properties of a Bioactive Glass. I. ALLAN\*, H.N. NEWMAN, and M. WILSON (*Departments of Microbiology and Periodontology, Eastman Dental Institute, London, UK*).

**0202** 10:30 Cooperative Adhesion of *Candida albicans* with Bacteria in Saliva. K.W. MILLSAP\*, R. BOS, H.C. van der MEI, and H.J. BUSSCHER (*Laboratory for Materia Technica, University of Groningen, The Netherlands*).

10:45 Discussion

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**Seq#: 34** **Thursday, March 11, 9:00 am - 11:00 am**  
**Oral Session, Room 15**

### Experimental Pathology - Oral Cancer and Carcinogenesis

**Chairpersons: D. Wong and S. Shahnavaz**

**0203** 9:00 p53 Gene Mutations in Sequential Oral Epithelial Dysplasias and Carcinomas. S.A. SHAHNAVAZ\*, J.A. REGEZI, G. BRADLEY, I.D. DUBÉ, and R.C.K. JORDAN (*S&WCHSC, Faculties of Dentistry, University of Toronto, Canada, and UCSF, USA*).

**0204** 9:15 Effects of Acetaldehyde on *c-jun* Expression in SCC Cell Lines. S. TIMMONS\*, F. DOMANN, and S. SQUIER (*College of Dentistry, the University of Iowa, Iowa City, USA*).

**0205** 9:30 Immunohistochemical Expression of ErbB Family Receptors in Oral Carcinomas. R. BEI, G. POMPA\*, D. VITOLO, M. QUARANTA, and R. MURARO (*University "La Sapienza" Rome; and "G. D'Annunzio", Chieti, Italy*).

**0206** 9:45 DOC-1, a Putative Tumor Suppressor, is a Biological Partner of CDK2. S. SHINTANI, Y. NAKAHARA, T. TSUJI, J. McBRIDE, R. TODD, H. OHYAMA, and D.T.W. WONG\* (*Harvard School of Dental Medicine, Boston, MA, USA*).

**0207** 10:00 RXR $\gamma$  Induces Terminal Differentiation of Oral Squamous Cell Carcinoma Lines. D.L. CROWE\* and C.F. SHULER (*Center for Craniofacial Molecular Biology, University of Southern California, Los Angeles, USA*).

**0208** 10:15 Increased Allelic Loss in Early Oral Dysplasia from High-risk Sites. L. ZHANG, K.J. CHEUNG\*, R. PRIDDY, and M.P. ROSIN (*Dentistry, University of British Columbia; and School of Kinesiology, Simon Fraser University, Canada*).

**0209** 10:30 High Frequency of Allelic Loss in Lichenoid Lesions with Dysplasia. L. ZHANG\*, Y.-H. LI, X. CHENG, R. PRIDDY, J. LOVAS, P. FREEMAN, T. DALEY, and M.P. ROSIN (*OMBS, Dentistry, University of British Columbia; and School of Kinesiology, Simon Fraser University, Canada*).

**0210** 10:45 Modulation of Malignant Progression in a Tissue Model of Pre-neoplasia. M. VACCARIELLO, A. JAVAHERIAN, J. KAREN, Y. WANG, N.E. FUSENIG, and J. GARLICK\* (*State University of New York, Stony Brook, USA; and German Cancer Research Center, Heidelberg, Germany*).

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**Seq#: 35** **Thursday, March 11, 9:00 am - 11:00 am**  
**Oral Session, Room 17**

**Geriatric Oral Research - Epidemiology, Implants, and Health-related Quality of Life**

**Chairpersons: R. Ettinger and J. Jones**

**0211** 9:00 Oral Health Perception of Need in the Keokuk County Rural Health Study. R.L. ETTINGER\*, J.S. HAND, S.M. LEVY, J.J. WARREN, J.A. MERCHANT, and A.M. STROMQUIST (*College of Dentistry and Medicine, University of Iowa, Iowa City, USA*).

**0212** 9:15 Caries Findings in Norwegian Elderly People—A Preliminary Report. B.M. HENRIKSEN\* and T.E. AXÉLL (*Department of Oral Surgery and Oral Medicine, Faculty of Dentistry, University of Oslo, Norway*).

**0213** 9:30 Smoking and 5-year Rates of Tooth Loss in Older Adults. H. ÁGÚSTSDÓTTIR\*, G.D. SLADE, and J.D. BECK (*University of North Carolina, Chapel Hill, USA*).

**0214** 9:45 Health Locus of Control in Dentate and Edentulous Older Adults. H.P. LAWRENCE\*, D. LOCKER, A. JOKOVIC, and M. CLARKE (*Faculty of Dentistry, University of Toronto, ON, Canada*).

**0215** 10:00 A Comparison of Long and Short Versions of the Oral Health Impact Profile in an Edentulous Population. P.F. ALLEN\* and A.S. McMILLAN (*University of Newcastle, UK; and University of Hong Kong, China*).

**0216** 10:15 Personality Affects Ratings of Oral-health-related Quality of Life. N.R. KRESSIN\*, S. REISINE, A. SPIRO, III, and J.A. JONES (*Center for Health Quality, Outcomes and Economic Research, VAMC, Bedford, MA; Boston University, MA; and University of Connecticut Health Center, Farmington, USA*).

**0217** 10:30 Comparing Mandibular Implant Overdentures with Conventional Dentures. M.A. AWAD, J.P. LUND, E. DUFRESNE, C.M.L. CLOKIE, and J.S. FEINE\* (*McGill University, Montreal, Canada*).

**0218** 10:45 The Oral Health of Patients with Conventional and 2-implant Overdentures. M.A. AWAD\*, D. LOCKER, J.P. LUND, E. DUFRESNE, C.M.L. CLOKIE, and J.S. FEINE (*McGill University, Montreal; and University of Toronto, Canada*).

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**Seq#: 36** **Thursday, March 11, 9:00 am - 11:00 am**  
**Oral Session, Room A-1**

**Microbiology/Immunology - Analysis of *Actinobacillus actinomycetemcomitans***

**Chairpersons: D. Meyer and E. Kraig**

**0219** 9:00 Identification of Rough Colony Phenotype-specific Proteins of *Actinobacillus actinomycetemcomitans*. E.M. HAASE\*, J. ZMUDA, and F.A. SCANNAPIECO (*Department of Oral Biology, State University of New York, Buffalo, USA*).

**0220** 9:15 Construction and Characterization of a Strain of *Actinobacillus actinomycetemcomitans* Mutant for an Inner Membrane Protein. K. MINTZ\* and P. FIVES-TAYLOR (*University of Vermont, Burlington, USA*).

**0221** 9:30 *Actinobacillus actinomycetemcomitans* Binds Specifically to the Plus End of Microtubules. J.E. ROSE\*, D. MEYER, and P. FIVES-TAYLOR (*University of Vermont, Burlington, USA*).

**0222** 9:45 Cloning and Sequencing *ftsZ*, the Cytokinesis Gene, in *A. actinomycetemcomitans*. J.E. ROSE, D. MEYER\*, and P. FIVES-TAYLOR (*University of Vermont, Burlington, USA*).

**0223** 10:00 *Actinobacillus actinomycetemcomitans* Immunosuppressive Factor (ISF) is a Member of the Family of Cytolethal Distending Toxins. B.J. SHENKER\*, T.L. MCKAY, S. DATAR, M.A. MILLER, and D.R. DEMUTH (*University of Pennsylvania, Philadelphia, USA*).

**0224** 10:15 Characterization of the Murine T-cell Response to *Actinobacillus actinomycetemcomitans* Leukotoxin. P. EZZO, P.D. INFANTE, B.E. GELB, D. KOLODRUBETZ, J.L. EBERSOLE, and E. KRAIG\* (*University of Texas Health Science Center, San Antonio, USA*).

**0225** 10:30 Identification of Residues in RTX Toxins Crucial to Hemolytic Activity. I.R. KIEBA\* and E.T. LALLY (*Leon Levy Research Center for Oral Biology, University of Pennsylvania, Philadelphia, USA*).

**0226** 10:45 Complex Regulation of Leukotoxin Transcription in *Actinobacillus actinomycetemcomitans*. E. KRAIG, L. PHILLIPS, A. BURGUM, P. EZZO, and D. KOLODRUBETZ\* (*University of Texas Health Science Center, San Antonio, USA*).

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**Seq#: 37** **Thursday, March 11, 9:00 am - 11:00 am**  
**Oral Session, Ballroom C**

**Mineralized Tissue - Ameloblasts – Enamel Proteins**

**Chairpersons: J. Simmers and P. DenBesten**

**0227** 9:00 Development and Characterization of an Immortalized Ameloblast-like Cell Line. P. DENBESTEN\*, W. LI, C. GAO, and D. GRUENERT (*Department of Growth and Development and Cardiovascular Research Institute, University of California at San Francisco, USA*).

**0228** 9:15 Cadherin-Catenin Complex and APC in Developing Rat Molar Teeth. J.M. DOBECK\*, M. WANG, S. WANG, B. SORKIN, and Z. SKOBE (*Forsyth Dental Center and Harvard School of Dental Medicine, Boston, MA, USA*).

**0229** 9:30 Calcium Receptor Knockout Mouse Enamel Matrix Does Not Mineralize. Y. TANIKAWA, E.M. BROWN, C. KOS, M. POLLACK, and J.W. BAWDEN\* (*University of North Carolina, Chapel Hill; and Harvard University, Boston, MA, USA*).

**0230** 9:45 The Chondrogenic/Osteogenic Factor in Dentin is a 6.7-kDa Amelogenin. A. VEIS, K. TOMPKINS\*, K. WEI, X.

WANG, and L. WANG (*Northwestern University, Chicago, IL, USA*).

10:00 Discussion

**0231** 10:15 Cleavage of Recombinant Amelogenin by Recombinant Enamelysin. O.H. RYU\*, C.-C. HU, A.G. FINCHAM, J.D. BARTLETT, H.C. MARGOLIS, and J.P. SIMMER (*University of Texas Health Science Center at San Antonio; Center for Craniofacial Molecular Biology, Los Angeles, CA; and Forsyth Dental Center, Boston, MA, USA*).

**0232** 10:30 Cloning the Human cDNA and Gene Encoding Enamel Matrix Serine Proteinase 1. J.P. SIMMER\*, B. DUPONT, C. ZHANG, Q. QIAN, and C.-C. HU (*University of Texas Health Science Center at San Antonio, USA*).

**0233** 10:45 Enamelysin (Matrix Metalloproteinase-20) Displays a Highly Tissue-restricted Pattern of Expression. J.D. BARTLETT\*, J. XUE, and J.T. WRIGHT (*Department of Biomineralization, Forsyth Dental Center, Boston, MA; and Department of Pediatric Dentistry, University of North Carolina, Chapel Hill, USA*).

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**Seq#: 38**      **Thursday, March 11, 9:00 am - 11:00 am**  
**Oral Session, Room 9**

**Oral/Dental Hygiene - Oral Cancer Exam, Plaque Assessment and Removal**

**Chairpersons: B. Schemehorn and M. Cugini**

**0234** 9:00 Dental Hygienists' Knowledge and Opinions Related to Providing Oral Cancer Examinations. J.L. FORREST\*, A.M. HOROWITZ, T.F. DRURY, and Y. SHMUELY (*Thomas Jefferson University, Philadelphia, PA; and NIDCR/NIH, Bethesda, MD, USA*).

**0235** 9:15 Effect of Supragingival Plaque Control on Supra- and Subgingival Species. A.D. HAFFAJEE\*, L.A. XIMENEZ-FYVIE, S. SOM, and S.S. SOCRANSKY (*Forsyth Dental Center, Boston, MA, USA*).

**0236** 9:30 Method to Assess Dental Plaque Quantitatively. M.W. HALL, T.M. PALMER, S.L. SMITH, S.H. WOOLF, D.K. HEIN\*, and R.P. CHRISTENSEN (*Clinical Research Associates, Provo, UT, USA*).

**0237** 9:45 Comparison of Gingivitis Indices. C.F. CAO\*, Y.Q. SHA, S.F. GENG, Q.X. LUAN, K.A. VASTOLA, C.H. YEH, and J.L. WINSTON (*School of Stomatology, Beijing Medical University, China; and The Procter & Gamble Company, Cincinnati, OH, USA*).

**0238** 10:00 A Gingivitis Methodology Study. R.D. BARTIZEK, J.L. WINSTON\*, and S.F. MCCLANAHAN (*The Procter & Gamble Company, Cincinnati, OH, USA*).

**0239** 10:15 Reduction of Gingivitis in a Chinese Population. C.F. CAO, Y.Q. SHA, S.F. GENG, Q.X. LUAN, K.A. VASTOLA\*, C.H. YEH, and J.L. WINSTON (*School of Stomatology, Beijing Medical University, China; and The Procter & Gamble Company, Cincinnati, OH, USA*).

**0240** 10:30 Anti-gingivitis Efficacy of a Triclosan Dentifrice vs. Placebo. R.D. BARTIZEK, J.L. WINSTON, and S.F. MCCLANAHAN\* (*The Procter & Gamble Company, Cincinnati, OH, USA*).

10:45 Discussion

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**Seq#: 39**      **Thursday, March 11, 9:00 am - 11:00 am**  
**Oral Session, Room 7**

**Oral & Maxillofacial Surgery - Wound Healing**

**Chairpersons: A. Lee and M. Sharawy**

**0241** 9:00 Role of HIF-1 in Hypoxia-induced Angiogenesis. A.D. LE\*, G.T.-J. HUANG, D.V. MESSADI, and C.N. BERTOLAMI (*School of Dentistry, University of California, Los Angeles and San Francisco, USA*).

**0242** 9:15 Expression of TGF- $\beta$  Ligands, Receptors, and Modulators in Fetal Skin. S.J. KIM\*, C. SOO, and K. TING (*University of California at Los Angeles, USA*).

9:30 Discussion

**0243** 9:45 Vascularized Fibula and Soft Tissue Transfer in Mandibulofacial Reconstruction. C.E. ZIMMERMANN\*, A. HASSE, and P. SIEG (*Department of Maxillofacial Surgery, Medical University of Lübeck, Germany*).

**0244** 10:00 Fate of Xenograft and Cranial Bone Grafts in Maxillary Sinus. M. SHARAWY\* and I. AL-MADANY (*Medical College of Georgia, Augusta, USA*).

**0245** 10:15 The Septa of the Maxillary Sinus—A Study in View of the Insertion of Osseointegrated Dental Implants. D. RINK\*, B. KLESPER, J.E. ZÖLLER, and J. KOEBKE (*Department of Oral and Maxillofacial Surgery and Anatomy, University of Cologne, Germany*).

**0246** 10:30 Formation of Jaw Bone Tuberosities by DBM and Guided Tissue Regeneration. N. MARDAS\*, A. STAVROPOULOS, L. KOSTOPOULOS, and T. KARRING (*Department of Periodontology, Royal Dental College, University of Aarhus, Denmark*).

**0247** 10:45 Matching of Real Data to Computer-tomography-assisted Mandible Models. J. PIFFKO\*, U. MEYER, S. BENTHAUS, E. FELSZEGI, D. VOLLMER, and U. JOOS (*Clinic for Craniofacial Surgery, University of Münster, Germany; and Clinic for Forensic Medicine, University of Budapest, Hungary*).

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**Seq#: 40**      **Thursday, March 11, 9:00 am - 11:00 am**  
**Oral Session, Room 1**

**Periodontal Research – Pathogenesis - Heat Shock Proteins**

**Chairpersons: V.-J. Uitto and J. Albandar**

**0248** 9:00 Effects of GroEL-like Heat-stress Protein of *Actinobacillus actinomycetemcomitans* on Epithelial Migration and Integrin Expression. V.-J. UITTO\*, A. HAFEZI, L. ZHANG, S. PAJU, F. GOULHEN, D. GRENIER, D. MAYRAND, and J. HEINO (*University of British Columbia, Vancouver; Université Laval, Quebec, Canada; and Universities of Helsinki and Turku, Finland*).

9:15 Discussion

**0250** 9:30 Effects of GroEL-like Heat-stress Protein of *Actinobacillus actinomycetemcomitans* on Epithelial Signal Transduction. L. ZHANG\*, F. GOULHEN, D. GRENIER, D. MAYRAND, and V.-J. UITTO (*University of British Columbia, Vancouver; Université Laval, Quebec, Canada; and Universities of Helsinki and Turku, Finland*).

**0251** 9:45 Expression and Immunoreactivity of the HSP60 Gene from *Bacteroides forsythus*. H.I. REID\* and M.P. RIGGIO (*Infection Research Group, Glasgow Dental School, UK*).

**0252** 10:00 Antibodies to Human and *P. gingivalis* hsp 60 Families in Periodontitis. K. TABETA\*, K. YAMAZAKI, H. HOTOKEZAKA, and K. HARA (*Department of Periodontology, Niigata University School of Dentistry; and Department of Orthodontics, Nagasaki University School of Dentistry, Japan*).

**0253** 10:15 T-cell Response to Human Heat Shock Protein 60 in Periodontitis Patients. T. NAKAJIMA\*, K. YAMAZAKI, K. TABETA, Y. OHSAWA, T. AOYAGI, and K. HARA (Department of Periodontology, Niigata University School of Dentistry, Japan).

**0254** 10:30 The Effect of Periodontal Therapy on Patients' Humoral Immune Response. M. PODMORE\*, I.B. DARBY, and D.F. KINANE (Glasgow University, UK).

**0255** 10:45 Serum IgG Level to *P. gingivalis* in Healthy and Early-onset Periodontitis Individuals. J.M. ALBANDAR\* and E. De NARDIN (Division of Periodontology, University of Bergen, Norway; and Department of Oral Biology, SUNY at Buffalo, NY, USA).

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**Seq#: 41** **Thursday, March 11, 9:00 am - 11:00 am**  
**Oral Session, Room 8**

### Periodontal Research – Therapy - Mechanical Therapy

**Chairpersons: P. Heasman and N. Bissada**

**0256** 9:00 *In vivo* Ultrasonic Instrumentation Forces. M. RUPPERT\*, J. CADOSCH, V. AILLAIN, J.S. GUINDY, and U.E. ZAPPA (Department of Periodontology, Endodontology, and Cariology, University of Basel, Switzerland).

**0257** 9:15 Ultrasonic Instrumentation and Marginal Integrity of Resin Composite Restorations. J. SKELTON, T. McCONNELL, R.J. MITCHELL, R. SCHUMACHER\*, and S. McEVOY (University of Kentucky, Lexington, USA).

**0258** 9:30 Influence of Smoking on Response to Non-surgical Therapy in Chronic Periodontitis. P.M. PRESHAW, F. STACEY, and P.A. HEASMAN\* (Ohio State University, Columbus, USA; and University of Newcastle upon Tyne, UK).

**0259** 9:45 Clinical Evaluation of Nd:YAG Laser Curettage on Periodontitis and Periodontal Pathogens. H. GREENWELL\*, D. HARRIS, K. PICKMAN, J. BURKART, F.M. PARKINS, and T. MYERS (University of Louisville, KY, USA).

**0260** 10:00 Efficacy of Orthodontic Treatment on Periodontal Splinting: A Four-year Report. L.M. VAN ZEGHBROECK\* and A. ASHAYERI (Dental Schools, University of Gent and University of Leuven, Belgium).

**0261** 10:15 Prevention of Periodontal Pockets on Mandibular Second Molars after Third Molar Removal. K.W. KAN\*, J.K.S. LIU, W.K. LEUNG, E.C.M. LO, and E.F. CORBET (Faculty of Dentistry, University of Hong Kong, China).

**0262** 10:30 Captek Alloy Reduces Dental Plaque Accumulation. M. GOODSON\*, I. SHOHER, S. IMBER, and S. SOM (Forsyth Dental Center, Boston, MA, USA; and School of Dental Medicine, Tel Aviv University, Israel).

10:45 Discussion

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**Seq#: 42** **Thursday, March 11, 9:00 am - 11:00 am**  
**Oral Session, Room 11**

### Pharmacology, Therapeutics, & Toxicology - Fluorides: Mouthrinses and Dentifrices

**Chairpersons: G. Whitford and Y. Li**

**0263** 9:00 Drinking Water Fluoride and Bone Fractures. Y. LI\*, C. LIANG, C. SLEMENDA, R. JI, S. GAO, B. KATZ, C. EMSLEY, M. LIAO, S. NIU, and C. JOHNSTON (Loma Linda University, CA; Indiana University, Indianapolis, USA; and IEHE, Beijing, China).

**0264** 9:15 Determination of Fluoride Intake from Urinary Fluoride Excretion Data. C.E. KETLEY\* and M.A. LENNON (Department of Clinical Dental Sciences, School of Dentistry, University of Liverpool, UK).

**0265** 9:30 Effects of Fluoride vs. MFP and Acidity on the Gastric Mucosa. G.M. WHITFORD\* (Department of Oral Biology, School of Dentistry, Medical College of Georgia, Augusta, USA).

**0266** 9:45 Stannous Fluoride and Herbal Triclosan Dentifrice Effects on Plaque. D.J. WHITE\*, E.R. COX, and P.A. SAGEL (The Procter & Gamble Co., Mason, OH, USA).

**0267** 10:00 Intra-oral Fluoride: Short-term Kinetics after Using Fluoride Dentifrices. G.M. WHITFORD, S.M. ADAIR, T.E. SCHAFER\*, C.W. TRIOL, and A.E. WINSTON (Medical College of Georgia, Augusta; and Enamelon Research, East Brunswick, NJ, USA).

**0268** 10:15 Relationships between Fluoride in Whole Saliva, Ductal Saliva, and Plasma in Children. J.E. THOMAS\*, S.M. ADAIR, and G.M. WHITFORD (Medical College of Georgia, Augusta, USA).

**0269** 10:30 Blinding in Clinical Trials: Evidence from the Contemporary Dentifrice Literature. R.W. GERLACH\* (Procter & Gamble Company, Cincinnati, OH, USA).

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**Seq#: 43** **Thursday, March 11, 9:00 am - 11:00 am**  
**Oral Session, Room 10**

### Prosthodontics - Impression Accuracy/Articulation

**Chairpersons: R. Weed and G. Johnson**

**0270** 9:00 Accuracy of Casts from Four Impression Trays and Two Impression Materials. M.J. CAYOUEPTE\*, J.O. BURGESS, R.E. JONES, and B.K. NORLING (UTHSCSA, San Antonio, TX; LSUMC, New Orleans, LA; and UTPA, Edinburg, TX, USA).

**0271** 9:15 Accuracy of Double Arch Impressions. L.C. BREEDING\* and D.L. DIXON (University of Kentucky, Lexington; and University of Alabama at Birmingham, USA).

**0272** 9:30 The Effect of Impression Material Thickness on Accuracy of Resulting Casts. J. SKELTON, H. WRIGHT\*, and L.C. BREEDING (University of Kentucky, Lexington, USA).

**0273** 9:45 Detail Reproduction for Single- vs. Dual-viscosity Impression Techniques. G.H. JOHNSON\*, X. LEPE, and T.C. AW (Restorative Dentistry, University of Washington, Seattle, USA).

**0274** 10:00 Interchangeability of Hanau Wide-Vue Arcon Articulators. R. PHOENIX\* and G. HARTMAN (UTHSCSA, San Antonio, TX, USA).

**0275** 10:15 Accuracy Verification of the Interchangeable Hanau Wide-Vue Articulator. R. WEED\*, J. FUNK, and R. DALE (University of Texas Health Science Center at San Antonio Dental School, USA).

**0276** 10:30 Three-dimensional Measurements of Casts Mounted with Different Methods. B. SCHWAHN\*, B. KORDASS, M. ROSIN, and E. SCHWAHN (Department of Prosthodontics, Dental School, University of Greifswald, Germany).

10:45 Discussion

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**Seq#: 44** **Thursday, March 11, 9:00 am - 11:00 am**  
**Oral Session, Room 18**

**Pulp Biology - Neural, Pulpal Blood Flow, Dentinal Fluid****Chairpersons: M. Närhi and W. Raab**

**0277** 9:00 Changes in Dentinal and Predentinal Development after Desensitization with Capsaicin. T. KRAGE\*, A. STIEFEL, C. TELLI, and W.H.-M. RAAB (*Department of Operative Dentistry, Heinrich Heine University, Duesseldorf; and Martin-Luther-University Halle, Germany*).

**0278** 9:15 Changes in the Formation of Reparative Dentin after Desensitization with Capsaicin. T. KRAGE, C. TELLI, and W.H.-M. RAAB\* (*Department of Operative Dentistry, Heinrich-Heine-University Duesseldorf, Germany*).

**0279** 9:30 Functional Coupling between Pulpal Cells and Nerves in the Cat? J. USHIYAMA, S. WANACHANTARARAK, and B. MATTHEWS\* (*Department of Physiology, University of Bristol, UK*).

**0280** 9:45 Pulp Nerve Responses in Developing Cat Teeth. M.V.O. NÄRHI\* and T. HIRVONEN (*Institute of Dentistry, University of Turku; and Department of Physiology, University of Kuopio, Finland*).

**0281** 10:00 Neuropeptide Y Modulates Capsaicin-evoked iCGRP Release from Dental Pulp. K.M. HARGREAVES\*, A. POON, P.A. CLAUDE, N.B. GRACIA, L. WAGNER, and C.M. FLORES (*Departments of Endodontics & Pharmacology, University of Texas Health Science Center at San Antonio, USA*).

**0282** 10:15 Role of Nitric Oxide in the Regulation of Pulpal Blood Flow. E. BERGGREEN\* and K.J. HEYERAAS (*Department of Physiology, University of Bergen, Norway*).

**0283** 10:30 Intrapulpal Oxygen Distribution and Vascular Regulation in Rat Incisor Pulp. Y. YU\*, N. BOYD, S. CRINGLE, V. ALDER, and D. YU (*School of Oral Health Sciences, Lions Eye Institute, University of Western Australia, Perth*).

**0284** 10:45 Effects of Vasoconstrictors on Dentinal Fluid Flow *in vivo*. M. TATSANAVIVAT, N. VONGSAVAN, V. KERDVONGBUNDIT\*, M. SOO-AMPON, and B. MATTHEWS (*Faculty of Dentistry, Mahidol University, Bangkok, Thailand; and Department of Physiology, University of Bristol, UK*).

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**Seq#: 45** **Thursday, March 11, 9:00 am - 11:00 am**  
**Oral Session, Room 16**

**Salivary Research - Salivary Proteins/Molecules****Chairpersons: L. Tabak and S. Ruhl**

**0285** 9:00 Structure/Function Analysis of UDP-GalNAc:Polypeptide N-Acetylgalactosaminyltransferase Fold. F.K. HAGEN, R. RAFFO, B. HAZES, D. DESA, and L.A. TABAK\* (*Center for Oral Biology, University of Rochester, NY, USA; and Department of Medical Microbiology and Immunology, University of Alberta, Edmonton, Canada*).

**0286** 9:15 Immunoquantitation of Human Salivary Mucin MG1 in Stimulated Whole Saliva. S.A. RAYMENT\*, B. LIU, G.D. OFFNER, F.G. OPPENHEIM, and R.F. TROXLER (*Boston University Medical Center, MA, USA*).

**0287** 9:30 Independent Binding of Salivary Mucin MG2 and sIgA to Oral *Streptococci*. B. LIU\*, S.A. RAYMENT, F.G. OPPENHEIM, and R.F. TROXLER (*Boston University Medical Center, MA, USA*).

**0288** 9:45 Pleiomorphy of Secretory Proteins in Human Oral Fluid. A.J. THAKKER\*, D.B. MORRISSETTE, T. CROSBY, J.J. BURKE, and M.I. MEDNIEKS (*College of Dentistry, University of Illinois, Chicago, USA*).

**0289** 10:00 Salivary Proteins and Glycoproteins during the First Year of Infancy. S. RUHL\* and G. SCHMALZ (*Department of Operative Dentistry and Periodontology, Dental School, University of Regensburg, Germany*).

10:15 Discussion

**0290** 10:30 Sorting of Parotid Secretory Protein in Endocrine Cells. M. CHU\* and S.-U. GORR (*Department of Biological and Biophysical Sciences, Louisville School of Dentistry, KY, USA*).

**0291** 10:45 Salivary Micelle-like Globules as a Locus for Enzyme Activity. J.D. RUDNEY\*, N.G. HALSTEAD, and C.A. STRAIT (*Department of Oral Science, School of Dentistry, University of Minnesota, Minneapolis, USA*).

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**Seq#: 46** **Thursday, March 11, 11:00 am 1:30 pm**  
**Workshop #1, Room 10**

**NIDCR - Grant Writing: Getting Your Message Out****Chairperson: D. Mangan**

**0292** Opening Comments.

Participants are asked to check the NIDCR Website ([www.nidcr.nih.gov](http://www.nidcr.nih.gov)) in February for more information about this workshop.

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**Seq#: 47** **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Pulp Biology - Neural, Inflammation, Cytokines**

**0293** Effects of Potassium Ions on Dentin Sensitivity in the Cat. S. WANACHANTARARAK\* and B. MATTHEWS (*Department of Physiology, University of Bristol, UK*).

**0294** Opioid Agonists Induce iCGRP Release from Rat Dental Pulp. J.L. SAUNDERS\*, L. WAGNER, K.M. HARGREAVES, and P.A. CLAUDE (*Department of Endodontics, University of Texas Health Science Center at San Antonio, USA*).

**0295** GAP-43 & PGP 9.5 in the Inflamed Dog Dental Pulp. D.P. KOEHN\*, G.R. HOLLAND, M.V.O. NÄRHI, and P. LANDRY (*University of Michigan, Ann Arbor, USA; and University of Turku, Finland*), (1998 AADR Student Fellowship Recipient)

**0296** Immunohistological Analysis of Cyclooxygenase-2 in Human Dental Pulp. T. NAKANISHI\*, H. SHIMIZU, and T. MATSUO (*Department of Conservative Dentistry, Tokushima University School of Dentistry, Japan*).

**0297** Class II Antigens and Nerve Fibers in Human Carious Teeth. N. YOSHIBA\*, K. YOSHIBA, M. IWAKU, and H. OZAWA (*Niigata University School of Dentistry, Japan*).

**0298** Three-dimensional *in vitro* Culture of Human Dental-papilla-derived Cells. E. HAYASHI\*, K. SATOMURA, and M. NAGAYAMA (*First Department of Oral and Maxillofacial Surgery, School of Dentistry, Tokushima University, Japan*).

**0299** Angiogenic Growth Factors in Dentin Matrix. D. ROBERTS-CLARK\* and A.J. SMITH (*School of Dentistry, University of Birmingham, UK*).

**0300** Role of Neutrophils in Pulpal Inflammation. M. YAMASAKI\*, K. NAKAMURA, A. IWAMA, I. IMAIZUMI, K. NAKATA, Y. MAEKAWA, and H. NAKAMURA (*Department of Endodontics, School of Dentistry, Aichi Gakuin University, Nagoya, Japan*).

**0301** Cytokines and Bacterial Extracts Modulate MMPs/TIMPs Production in Pulp Cells. K. NAKATA\*, M. YAMASAKI, T. IWATA, K. SUZUKI, and H. NAKAMURA (*Department of Endodontics, School of Dentistry, University of Aichi-Gakuin, Nagoya, Japan*).

**0302** Role of Gallium and IL-1 in Pulp Cell Protease Production. J. CHRISTOPHER\*, F. PANAGAKOS, and E. KUMAR (*New Jersey Dental School—UMDNJ, Newark, USA*).

**0303** Type 1 and Type 2 Cytokine mRNA in Dental Pulp. C.-L. HAHN\* and M.-Y. YANG (*Virginia Commonwealth University School of Dentistry, Richmond, USA*).

**0304** Effect of Experimental Ligature-induced Periodontitis on Dental Pulp. R.A. BARKHORDAR\* and Z.M. HUSSAIN (*School of Dentistry, University of California, San Francisco, USA*).

**0305** Experimental Incidence of Internal and External Resorptions in Rat Molar Roots. Y. SHIMAZU\*, C. KONDO, I. KATSUUMI, and T. AOBA (*Departments of Pathology and Endodontics, Nippon Dental University, Tokyo, Japan*).

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**Seq#: 48**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Prosthodontics - Bleaching/Investments/General**

**0306** Treatment Time Analysis of Amalgam, Composite, and Direct Gold Restorations. W. KAMANN\* and P. GAENGLER (*School of Dental Medicine, University of Witten/Herdecke, Germany*).

**0307** Evaluating MEDLINE Search Strategies for Randomized Controlled Trials in Prosthodontics. H.B. DUMBRIGUE\*, J.S. JONES, and J.F. ESQUIVEL (*Department of Prosthodontics, University of Florida, Gainesville, USA*).

**0308** Developing a Register for Randomized Controlled Trials in Prosthodontics. H.B. DUMBRIGUE, J.S. JONES\*, and J.F. ESQUIVEL (*Department of Prosthodontics, University of Florida, Gainesville, USA*).

**0309** The Effect of Coolant Flow Rates on Bur Cutting Efficiency. S.C. SIEGEL, S. FELDMAN\*, and J.A. von FRAUNHOFER (*Dental School, University of Maryland, Baltimore, USA*).

**0310** Two Methods of Elastic Modulus Measurement for Investment Materials. D. LOW\* and M.V. SWAIN (*Biomaterials Science Research Unit, University of Sydney, Australia*).

**0311** Effect of Mold Materials on Thermal Expansion of Pure Titanium Casting Investment. C.C. HUNG\*, C.C. HUANG, and Y.Y. LIAO (*Department of Prosthodontics, School of Dentistry, Kaohsiung Medical College, Taiwan, ROC*).

**0312** Clinical Evaluation of a Combined In-office and At-home-applied Bleaching Agent. C.A. MUNOZ, J.R. DUNN, J. SY-MUNOZ\*, Y. LI, and J. KIM (*Loma Linda University, CA, USA*).

**0313** Evaluation of Pulp Size in Nightguard Vital Bleaching Subjects. C.D. BENTLEY\*, B.J. COOK, R.H. LEONARD, and J.B. LUDLOW (*University of North Carolina Dental School, Chapel Hill, USA*).

**0314** Nightguard Vital Bleaching of Tetracycline-stained Teeth: 4.5 Years Post-treatment. R.H. LEONARD\*, V.B. HAYWOOD, J.C. EAGLE, G.E. GARLAND, K.P. MATTHEWS, and N.D. TART (*University of North Carolina, Chapel Hill; and MCG, Augusta, GA, USA*).

**0315** Safety Issues of 10% and 16% Carbamide Peroxide Whitening Solutions. R.H. LEONARD, G.E. GARLAND\*, J.C.

EAGLE, and D.J. CAPLAN (*University of North Carolina, Chapel Hill, USA*).

**0316** Bonding to Bleached Composite Resin: An *in vitro* Study. N. BARGHI and J. ONTIVEROS\* (*Department of Restorative Dentistry, University of Texas Health Science Center at San Antonio, USA*).

**0317** An Evaluation of PREMA in Removing Stains from Teeth. R.B. PRICE, R.W. LONEY, J. WILSON\*, G. DOYLE, and M.B. MOULDING (*Dalhousie University, Halifax, Nova Scotia; and University of Saskatchewan, Saskatoon, Canada*).

**0318** Evaluation of Spontaneous Alignment of Intrusive Type of Fracture to Primary Anterior Teeth. V. VIJAYAKUMARAN\* (*Department of Paedodontics, Faculty of Dental Sciences, University of Peradeniya, Sri Lanka*).

**0319** Effects of Palatal Plate on Articulatory Function during Pronunciation. M. HAGIWARA\*, T. KAWAMOTO, A. TANAKA, M. NISIKAWA, and Y. MORIYA (*Nihon University School of Dentistry, Tokyo, Japan*).

**0320** Disconcordance of Skeletal and Skin Points in Prosthetic Plane Determination. D. SINOBAD-STANISIC, S.D. POSTIC, and V.M. POPOVIC\* (*Clinic of Prosthodontics, Faculty of Stomatology, University of Belgrade, Yugoslavia*).

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**Seq#: 49**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Prosthodontics - Occlusion & Masticatory Performance**

**0321** Comparison of Masticatory Function Measures. T. GLUHAK\*, S.M. RIVERA, J.P. HATCH, J.D. RUGH, V. VELIZ, S. YAMASHITA, and S. SAKAI (*University of Texas Health Science Center at San Antonio, USA*).

**0322** Modulation of Chewing Related to Occlusal Change. F. AL-ALI\*, M.R. HEATH, J.F. PRINZ, and P.S. WRIGHT (*Saint Bartholomew's and Royal London School of Medicine and Dentistry, University of London, UK*).

**0323** Modulation of Chewing Forces in Response to Food Quality. J.R. MORRIS\*, A.M. FERMAN, J.F. PRINZ, and M.R. HEATH (*Saint Bartholomew's and Royal London School of Medicine and Dentistry, University of London, UK*).

**0324** The Relationship between the Anterior and Posterior Disclusive Angles. S.J. DONEGAN, D.T. ALLEN\*, G.J. ZIEBERT, and V.B. DHURU (*School of Dentistry, Marquette University, Milwaukee, WI*).

**0325** Observations of Interproximal Contact Relationship during Clenching. K. KASAHARA\*, M. KURIYAMA, H. MIURA, and S. HASEGAWA (*Department of Fixed Prosthodontics, Tokyo Medical and Dental University, Japan*).

**0326** Synthetic Evaluation of Habitual Mastication Side. Y. HAYASHI\*, T. ASANO, K. SO, and K. KOBAYASHI (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**0327** The Effect of the New Electronic "Intraoral Pressure-dependent Registration" on the Intermaxillary Relationship. I. THEDERAHN\*, B. SCHWAHN, and R. BIFFAR (*Department of Prosthodontics and Dental Materials, Dental School, University of Greifswald, Germany*).

**0328** Jaw Position and Shock Absorption: With and Without Mouthguard. Y. YONEHATA\*, Y. MAEDA, H. YOSHIDA, and S. TSUTSUMI (*Osaka University and Kyoto University, Japan*).

**0329** Determining the Accuracy of Articulator Interchangeability and Hinge Axis Reproducibility. P. HATZI\*,



A. MAYA, and P. MILLSTEIN (*School of Dental Medicine, Tufts University, Boston, MA, USA*).

**0330** Effect of Occlusal Splint Designs on Nocturnal Masticatory Muscle Activities. R. ICHIKI\*, K. KOYANO, and Y. TUKIYAMA (*Department of Removable Prosthodontics, Kyushu University, Fukuoka, Japan*).

**0331** Buccal Mucosa Ridging and Tongue Indentation: Incidence and Associated Factors. K. SAKURAI\*, K. PIQUERO, T. ANDO, and H. KANAI (*Department of Complete Denture Prosthodontics, Tokyo Dental College, Japan*).

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**Seq#: 50**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### Dental Materials - Adhesion/Bonding – Prosthodontics

**0332** Influence of Time Lapse after Metal Primer Treatment on Bond Strength. S. YAMAGUCHI\*, A. ARITA, S. AKAHANE, K. HINOURA, and K. HIROTA (*Research and Development Department, GC Corporation, Tokyo; and Hinoura Dental Clinic, Tokyo, Japan*).

**0333** Bond Strengths of Several Bonding Systems Following Various Surface Treatments of In-Ceram. G.W. SHEEN\*, S.A. AQUILINO, F.A. RUEGGEBERG, A.M. DIAZ-ARNOLD, and C.M. STANFORD (*Medical College of Georgia, Augusta; and University of Iowa, Iowa City, USA*).

**0334** Characteristics of a New Fluoride-releasing Adhesive Resin Cement. M. KAWASHIMA\*, M. HARADA, K. NAKATSUKA, and J. OHTSUKI (*Kuraray Company, Ltd., Osaka, Japan*).

**0335** Bond Strength of Silicone Lining Materials to Poly(methyl methacrylate). L. BORCHERS\* (*Department of Prosthodontics, School of Dentistry, Medical University of Hannover, Germany*).

**0336** The Effectiveness of Coupling Agents as Adhesion Promoters to Au and Pd Alloys. S. SUDSANGIAM\* and R. VAN NOORT (*Department of Restorative Dentistry, School of Clinical Dentistry, University of Sheffield, UK*).

**0337** Bonding Denture Base Resin to Wrought Titanium. K.B. MAY\*, Z. RASHID, and A. KORAN (*University of Michigan, Ann Arbor, USA*).

**0338** Marginal Sealability of Composite Inlays with a New Luting Composite. M. IRIE\*, K. SUZUKI, and R. RICHTER (*Okayama University Dental School, Japan; and ESPE, Seefeld, Germany*).

**0339** Effect of Thiouracil Primer on Bond Strength to Noble Alloys. K. KAMADA\*, H. MATSUMURA, N. TANOUE, and M. ATSUTA (*Nagasaki University School of Dentistry, Japan*).

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**Seq#: 51**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### Dental Materials - Dentin Physical Properties/Orthodontics

**0340** Effects of Tubule Density on Bond Strength to Dentin. M. GIANNINI\*, R.M. CARVALHO, L.R.M. MARTINA, and D.H. PASHLEY (*FOP-Unicamp, FOB-USP, Brazil; and Medical College of Georgia, Augusta, USA*).

**0341** Influence of Strain Rate on Shear Bond Testing to Dentin. L.G. WATANABE\*, A. HARNER, G.T. NONOMURA, G.W. MARSHALL, and S.J. MARSHALL (*University of California, San Francisco, USA*).

**0342** Dentin Shear Strength: Effect of Depth and Location. N. JESSOP, G.E. DENEHY\*, and M.A. VARGAS (*College of Dentistry, University of Iowa, Iowa City, USA*).

**0343** Humidity Effects on Water Content and Stiffness of Demineralized Dentin. K. AGEE, E.L. PASHLEY\*, Y. ZHANG, and D.H. PASHLEY (*Medical College of Georgia, Augusta, USA*).

**0344** Development of H<sup>+</sup>-induced Isometric Tension in Demineralized Dentin. Y. ZHANG\*, B.S. SACHAR, K. AGEE, J.L. BORKE, and D.H. PASHLEY (*Medical College of Georgia, Augusta, USA*).

**0345** Effects of Depth and Direction on Ultimate Tensile Strength of Dentin. H. SANO\*, P.N.R. PEREIRA, C. KAWAMOTO, R.M. CARVALHO, M. NAKAJIMA, J. TAGAMI, and D.H. PASHLEY (*Hokkaido University, Japan; Medical College of Georgia, Augusta, USA; and Tokyo Medical and Dental University, Japan*).

**0346** Mapping of Deformation Caused by Moisture Change Using Moiré Interferometry. J.D. WOOD\* and D.H. PASHLEY (*Virginia Polytechnic Institute and State University, Blacksburg; and Medical College of Georgia, Augusta, USA*).

**0347** Support of Occlusal Enamel Provided by Restorative Materials. C.J. LATINO\*, J.B. SUMMITT, and K.B. TROENDLE (*Health Science Center, University of Texas, San Antonio, USA*).

**0348** LCP—A Suitable Substitute for Human/Bovine Dentin in *in vitro* Tests. T. PLEIN\*, M. ROSENTRITT, M. BEHR, R. LANG, and G. HANDEL (*Department of Prosthetic Dentistry, University of Regensburg, Germany*).

**0349** Failure Probability of Orthodontic Brackets Bonded with Fluoride-releasing Adhesives. J. MARIM\*, W. LACEFIELD, R.B. MAZER, S. SUZUKI, and R.W. TAYLOR (*School of Dentistry, University of Alabama, Birmingham, USA*).

**0350** Effect of Using Single-step Adhesives when Bonding Orthodontic Brackets. L. VonWALD\* and S.E. BISHARA (*College of Dentistry, University of Iowa, Iowa City, USA*).

**0351** Effect of Etching on Bracket Bond Strength Using a Glass-Polyalkenoate Cement. W.L. SCHLENKER\*, C.A. MUNOZ, S. WITHROW, N. JESSOP, and A.H.L. TJAN (*Loma Linda University, CA, USA*).

**0352** Shear Bond Strength Using Two Bracket Bonding Agents. S. CABREJOS\*, M. ADRIAZOLA, M.A. SARAVIA, and J.M. POWERS (*Universidad Peruana Cayetano Heredia, Lima—Perú; and Houston Biomaterials Research Center, TX, USA*).

**0353** Caries Prevention and Bond Strengths of Five Bonding Systems in Orthodontics. S. HATIBOVIC-KOFMAN\*, A. TASSI, T.F. FOLEY, and A. ALI (*University of Western Ontario, London, Canada*).

**0354** Comparison of Shear Bond Strength of Various Orthodontic Bonding Adhesives. R.J. MORI, B. SHROFF, D.P. GIPE, T.S. JENKINS\*, S.J. LINDAUER, and D. AROLA (*University of Maryland, Baltimore; University of Maryland, Baltimore County; and Virginia Commonwealth University, Richmond, USA*).

**0355** Dissolution of Type I Collagen. A.N. BAHN\*, G.P. STEWART, and Y.-H. CHANG (*Center for Advancement of Dental Education, St. Louis University, MO; Dentistry, Southern Illinois University, Alton; and Biochemistry, St. Louis University, Medical School, MO, USA*).

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**Seq#: 52**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Ceramics: Processing, Strength, Fatigue, and Microstructure**

**0356** Strength of Alumina-Glass Dental Composites by Melt-infiltration Processing. S.G. AHN\*, D.H. WON, J.H. LEE, and T.S. BAE (*Institute of Oral Bioscience, Chonbuk National University, Korea*).

**0357** Processing of Near-net Shape, Translucent 100% Alumina BioCeramics. M. YOGYA\*, P. SAINT PIERRE, and K. THORNE (*Department of Restorative Dentistry, University of Illinois at Chicago, USA*).

**0358** A Novel Preparation Method for All-ceramic Crown Using Alumina Tapes. S.-H. KWON\*, M.-H. KIM, M.-H. LEE, and D.-J. KIM (*We Dong-Myung Co. and KIST, Seoul, Korea*).

**0359** Mechanical Properties and Marginal Fit of All-ceramic Crown Fabricated from Alumina Tapes. M.-H. LEE\*, D.-J. KIM, S.-H. KWON, M.-H. KIM, N.-S. OH, and K.-W. LEE (*KIST; We Dong-Myung Co., Seoul; and Yonsei University, Korea*).

**0360** Strength and Fatigue of CAD/CAM Machinable Dental Materials. A. GRAF\*, A. KERN, and A. PETSCHL (*Polyclinic for Operative Dentistry, University of Erlangen-Nuremberg, Germany*).

**0361** Contact Fatigue Thresholds and Strength Degradation in Dental Ceramics. Y.-G. JUNG\*, I.M. PETERSON, and B.R. LAWN (*National Institute of Standards and Technology, Gaithersburg, MD, USA*).

**0362** Strengthening of a Dental Ceramic by Microwave Ion-exchange. I.L. DENRY, J.A. HOLLOWAY, and L.A. TARR\* (*Ohio State University, Columbus, USA*).

**0363** The Flexural Strength of Ceramics Processed Using Different Press Furnaces. M.J. CATTELL\*, J.C. KNOWLES, and E. LYNCH (*Department of Conservative Dentistry, Saint Bartholomew's and Royal London School of Medicine and Dentistry; and Eastman Dental Institute, London, England, UK*).

**0364** Biaxial Flexure Strength of Feldspathic Porcelains Dispersed with Cubic Leucite. K. MATSUO\*, S. BAN, N. MIZUTANI, and J. HASEGAWA (*School of Dentistry, Aichi-Gakuin University, Nagoya, Japan*).

**0365** Influence of Specific Surface Layer on Deflection of a Glass-ceramic. S. ASANO\*, T. YAMAMOTO, M. TAKAMIZU, and A. KOHNO (*Tsurumi University School of Dental Medicine, Yokohama, Japan*).

**0366** Surface Roughness and Flexural Strength of Laminated In-Ceram/Vitadur Alpha Porcelain. C.S. CHU\*, N. FRANKEL, and D.J. SETCHELL (*Faculty of Dentistry, University of Hong Kong, China; and Eastman Dental Institute, University of London, UK*).

**0367** Influence of Supporting Substrate on Fracture Mode for Fluorocanalite Glass-ceramic. N.-Z. ZHANG\*, K.J. ANUSAVICE, and J.E. MOORHEAD (*Department of Dental Biomaterials and Department of Statistics, University of Florida, Gainesville, USA*).

**0368** Effect of Tempering Shoulder Porcelain in Silicone Fluids on Flexural Strength. K.J. ANUSAVICE, T.J. HILL\*, A.A. BARRETT, and J.E. MOORHEAD (*Departments of Dental Biomaterials and Biostatistics, University of Florida, Gainesville, USA*).

**0369** Lattice Parameter Change of Leucite with Substitution for Potassium. S. BAN\*, K. MATSUO, N. MIZUTANI, and J. HASEGAWA (*School of Dentistry, Aichi-Gakuin University, Nagoya, Japan*).

**0370** Fracture Strength of Ceramic Brackets Undergoing Cyclic Stress. M. HENDERSON, E. KUDLICK\*, and F.C.

EICHMILLER (*College of Dentistry, Howard University, Washington, DC, USA*).

**Seq#: 53** **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Calcium Phosphate Cements**

**0371** Properties of Calcium Phosphate Cements with Different Ca/P Ratios. S. HIRAYAMA\*, S. TAKAGI, and L.C. CHOW (*Nihon University, Chiba, Japan; and American Dental Association Health Foundation-Paffenbarger Research Center, National Institute of Standards and Technology, Gaithersburg, MD, USA*).

**0372** Histopathological Reaction of Calcium Phosphate Cement for Alveolar Ridge Augmentation. A. SUGAWARA\*, K. FUJIKAWA, K. KUSAMA, M. NISHIYAMA, S. MURAI, I. MORO, S. TAKAGI, and L.C. CHOW (*Nihon University School of Dentistry, Tokyo, Japan; and American Dental Association Health Foundation, Paffenbarger Research Center at National Institute of Standards and Technology, Gaithersburg, MD, USA*).

**0373** Properties of a Non-rigid Resorbable Calcium Phosphate Cement. S. TAKAGI\*, L.C. CHOW, S. HIRAYAMA, and F.C. EICHMILLER (*American Dental Association Health Foundation-Paffenbarger Research Center, National Institute of Standards and Technology, Gaithersburg, MD, USA; and Nihon University, Chiba, Japan*).

**0374** Mechanical Properties and Tissue Reactions of OCP/a-TCP Settings. Y. NAKANO\*, M. OHGAKI, S. NAKAMURA, Y. TAKAGI, and K. YAMASHITA (*Department of Pedodontic Dentistry and Institute for Medical and Dental Engineering, Tokyo Medical and Dental University, Japan*).

**0375** Studies on the Physical Properties of Polymeric Calcium Phosphate Cements Derived from PMVE-Ma. H.J. HAN\*, B.S. LIM, and C.W. KIM (*Department of Dental Biomaterials, College of Dentistry, Seoul National University, Korea*).

**0376** Hard Tissue Deposition in Pulp: Tetracalcium Phosphate vs. Ca(OH)<sub>2</sub>. M. YOSHIKAWA\* and T. TODA (*Department of Endodontics, Osaka Dental University, Japan*).

**0377** Influence of Water on Hardness of Calcium Phosphate Cements. A.E. HUBER and W.C. WAGNER\* (*School of Dentistry, University of Michigan, Ann Arbor, USA*).

**Seq#: 54** **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Composite Bond Strength: Bonding to Enamel, Orthodontic Brackets**

**0378** Shear Bond Strengths of Stainless Steel to Enamel. P.D. JOHNSON, B. JAFARNIA\*, E. MONDRAGON, T.T. WHEELER, and K.-J.M. SÖDERHOLM (*University of Florida, Gainesville, USA*).

**0379** Bond Strengths of Two Resin-modified Glass Ionomers to Porcelain. C.-H. CHUNG\*, E.J. BRENDLINGER, D.L. BRENDLINGER, V. BERNAL, and F.K. MANTE (*University of Pennsylvania and Temple University, Philadelphia, USA*).

**0380** Bond Strength of New Crown and Bridge Composites to Different Metals. O. LOEFFEL\*, H. LÜTHY, and P. SCHÄRER (*Center for Dental and Oral Medicine, University of Zürich, Switzerland*).

- 0381** Bond Strengths of Veneering Composite Resins to the Gold Alloy. P. PFEIFFER, I. NERGIZ, and U. PLATZER\* (*University at Cologne and University of Hamburg, Germany*).
- 0382** Effect of Primers on Bonding Resin Composite to Noble Alloy. K. YOSHIDA\*, K. KAMADA, Y. TAIRA, H. MATSUMURA, and M. ATSUTA (*Nagasaki University School of Dentistry, Japan*).
- 0383** Bond Strength of Ti-Core Using Multi- and Single-step Bonding Agents. B.I. COHEN\*, M.K. PAGNILLO, B.L. MUSIKANT, and A.S. DEUTSCH (*Essential Dental Laboratories, S. Hackensack, NJ, USA*).
- 0384** Effect of Light Intensity on Bond Strength of Orthodontic Brackets. M.T. WEIS\*, J. BEYER, S.J. LINDAUER, and P.C. MOON (*School of Dentistry, MCV Campus, Virginia Commonwealth University, Richmond, USA*).
- 0385** Working Time and Bracket Positioning Effects on Composite Bond Strengths. J. BEYER\*, T.M. McCASKEY, S.J. LINDAUER, and P.C. MOON (*Virginia Commonwealth University School of Dentistry, Richmond, USA*).
- 0386** Shear Bond Strengths of One-bottle Filled Adhesives to Enamel. M.W. DEVANEY\*, E.J. SWIFT, Jr., and J. PERDIGÃO (*Department of Operative Dentistry, University of North Carolina at Chapel Hill, USA*).
- 0387** Bond Strength of Composite to Enamel Using Various Conditioning Techniques. M.A. LATTA\* and W.W. BARKMEIER (*Creighton University School of Dentistry, Omaha, NE, USA*).
- 0388** Bond Strengths of "Esterfill" Primer/Adhesive System. S.V. OKRATCHKOVA\*, A.P. POLYKARPOVA, H.M. BARER, and A.H. ANDREEVA (*Medical Stomatological Institute, Moscow, Russia*).
- 0389** Micro-tensile Bond Strength and SEM Study of Hydrophilic Adhesives on Enamel. P.E.C. CARDOSO and F.T. SADEK\* (*Department of Dental Materials, University of São Paulo, Brazil*).
- 0390** Effect of Composite Type and Viscosity on Enamel Bond Strengths. J. PERDIGÃO, S. GERALDELI\*, H.O. HEYMANN, B.T. ROSA, G.C. LOPES, and M.F. NUNES (*University of North Carolina, Chapel Hill, USA; and University of Braz Cubas, University of Santa Catarina, Brazil*).

**Seq#: 55** **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Composite Bond Strength: Microleakage, Polymerization Stresses**

- 0391** Radioisotope and Dye Microleakage Evaluation of Three Single-bottle Adhesives. J.G. FITCHIE, B. ROBERTS\*, L. ANDERSON, and A. PUCKETT (*School of Dentistry, University of Mississippi, Jackson, USA*).
- 0392** Margin Adaptation of a Condensable Composite Restorative. T.A. FALER\* and R.B. MAZER (*School of Dentistry, University of Alabama, Birmingham, USA*).
- 0393** Microleakage with Incremental vs. Bulk Placement Utilizing Condensable Composites. M.S. AFFLECK\*, G.E. DENEHY, M.A. VARGAS, and V.J. SETIEN (*University of Iowa, Iowa City, USA*).
- 0394** Effects of Surface Sealing on the Microleakage of Bonded Restorations. C.E. BARONE-SMITH\* and S.H. DICKENS (*Naval Dental School, National Naval Dental Center, Bethesda; and ADAHF, NIST, Gaithersburg, MD, USA*).

- 0395** Bone Cement as a Retrofill Material: A Preliminary Study. G. HOLT\* and T. DUMSHA (*BCDS, Department of Endodontics, University of Maryland, Baltimore, USA*).
- 0396** Microleakage of Class II Composite Restorations: A Dye Penetration Study. G. WIBOWO\*, L.W. STOCKTON, and M. SUZUKI (*University of Manitoba, Winnipeg, Canada*).
- 0397** Microleakage of Class V Composite Restorations with Different Visible-light-curing Methods. R.S. WALKER\* and J.O. BURGESS (*Louisiana State University School of Dentistry, New Orleans, USA*).
- 0398** Marginal Adaptation of Two Composites in a Dentin Cavity Mediated with Single Bond Dental Adhesive System. T. HASEGAWA\*, W. YUKITANI, T. YAMASHITA, K. ITOH, S. WAKUMOTO, and H. HISAMITSU (*Showa University School of Dentistry, Tokyo, Japan*).
- 0399** Effects of Ramped Curing and Oxygen Inhibition on a Dual-cured Resin Cement. K.T. KALANTA\* and K.E. DIEFENDERFER (*Naval Dental School, National Naval Dental Center, Bethesda, MD, USA*).
- 0400** Gingival Gap Formation in Bulk Cured Flowable and Condensable Composites. P. WHITE\*, C.N. BROOKS, and P.C. MOON (*MCV Dental School, Virginia Commonwealth University, Richmond, USA*).
- 0401** Comparison of Two Models for Tooth Fragment Fracture Generation. G. BULLARD\*, J. DEAN, D. ZIMMERMAN, and B.K. MOORE (*Indiana University School of Dentistry, Indianapolis, USA*).
- 0402** A Bonding Agent Effect on Cuspal Deflection after One Year. Z. KASLOFF\* and P.T. WILLIAMS (*University of Colorado, Denver, USA; and University of Manitoba, Winnipeg, Canada*).

**Seq#: 56** **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Dental Composites - Mechanical Properties**

- 0403** Strengths of Condensable Composite Resins with Flowable Liners. R. RASHID\*, J. RICKS, and P. MONAGHAN (*Ohio State University College of Dentistry, Columbus, USA*).
- 0404** Study on the Curing and Mechanical Properties of Resin Composites for Crown and Bridge. A. FUJISHIMA\*, T. MIYAZAKI, and M. SUZUKI (*School of Dentistry, Showa University, Tokyo, Japan*).
- 0405** The Flexural Strength of Targis-Vectris System with/without Targis Base. C.C. PENG\*, W.C. LU, F.H. LIN, T.I. CHAI, and Y.Y. SHIAU (*School of Dentistry, National Taiwan University, ROC*).
- 0406** Mechanical Properties and Wear Behavior of New Compomer Materials. J.Y. THOMPSON\*, D.E. RUDDLELL, P.J. STAMATIADES, J.C. WARD, S.C. BAYNE, and E.R. SHELLARD (*University of North Carolina, Chapel Hill; and Kerr Corporation, Orange, CA, USA*).
- 0407** Mechanical Properties and Wear Behavior of Condensable Composites. D.E. RUDDLELL\*, J.Y. THOMPSON, P.J. STAMATIADES, J.C. WARD, S.C. BAYNE, and E.R. SHELLARD (*University of North Carolina, Chapel Hill; and Kerr Corporation, Orange, CA, USA*).
- 0408** Fracture Toughness of Condensable Posterior Composite Resins. E.D. BONILLA\*, G.H. MARDIROSIAN, and A.A. CAPUTO (*Restorative Dentistry and Biomaterials Science, University of California at Los Angeles School of Dentistry, USA*).

- 0409** Low-frequency Modulus Measurements of Condensable and Flowable Composite Resins. B. WHITE\*, P.C. MOON, and T.W. HAAS (*Virginia Commonwealth University, Richmond, USA*).
- 0410** Coefficient of Thermal Expansion of Six Composite Resin Materials. X.Y. YU\* and D. GLACE (*Den-Mat Corporation, Santa Maria, CA, USA*).
- 0411** Physical Properties of Condensable vs. Conventional Composites. K.M. MacGREGOR\*, D.S. COBB, and M.A. VARGAS (*University of Iowa, Iowa City, USA*).
- 0412** Physical Properties of Compomer Restorative Materials. M.A. LATTA and C.J. RANDALL\* (*Creighton University School of Dentistry, Omaha, NE, USA*).
- 0413** Properties of Advanced Laboratory Composites. C. TRAJTENBERG, M. ELDIWANY\*, D. LI, and J.M. POWERS (*Houston Biomaterials Research Center, University of Texas at Houston Dental Branch, USA*).
- 0414** Hardness and Degree of Conversion of Posterior Condensable Composite Resins. R. KERBY, J. LEE\*, L. KNOBLOCH, and R. SEGHI (*Ohio State University, Columbus, USA*).
- 0415** Fracture Toughness of Posterior Condensable Composite Resins. R. KERBY, J. BERLIN\*, and L. KNOBLOCH (*Ohio State University, Columbus, USA*).
- 0416** Physical Properties of Four Dual-cure Core Materials. V.J. SETIEN\*, M.A. VARGAS, and G.E. DENEHY (*College of Dentistry, University of Iowa, Iowa City, USA*).
- 0417** Mechanical Properties of Fluoride-releasing Materials. G. IAZZETTI, J.O. BURGESS, and C. TAVARES\* (*School of Dentistry, Louisiana State University, New Orleans, USA; and WHO Collaboration Center, UFRJ, Brazil*).
- 0418** Comparison of Mechanical Properties of Commercial Carbon Graphite Fiber Root Canal Posts. K.K. NARVA\*, L.V.J. LASSILA, and P.K. VALLITTU (*Institute of Dentistry and Biomaterials Project, University of Turku, Finland*).
- 0419** Sensitivity of Fatigue Crack Growth Rate for Degradation of Composites. F. TAKESHIGE\*, N. UEGAKI, Y. KAWAKAMI, and S. EBISU (*Department of Conservative Dentistry, Faculty of Dentistry, Osaka University, Japan*).
- 0420** Effect of Aging and Thermal Cycling on the Tensile Strength of Light-cured Restorative Composites. T.S. BAE\*, S.H. BAEK, D.H. WON, S.G. AHN, and C.W. PARK (*Institute of Oral Bioscience, Chonbuk National University, Korea*).
- 0421** *In vitro* Study of Fracture Resistance of Metal-free Artglass Crowns. G. EICKEMEYER\*, P. RAMMELSBURG, P. POSPIECH, and W. GERNET (*Department of Prosthodontics, University of Munich, Germany*).

**Seq#: 57** **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Dental Materials - Direct Placement – Metallic Alloys**

- 0422** Expansion of Gallium Alloy Restorations. A. HUANG\*, H.R. LASWELL, R.J. MITCHELL, and T. McCONNELL (*University of Kentucky College of Dentistry, Lexington, USA*).
- 0423** DSC Analyses of a Gallium-based Restorative Alloy. R.E. SHAKER\*, W.A. BRANTLEY, Q. WU, and B.M. CULBERTSON (*McGill University, Montreal, Canada; Ohio State University, Columbus; and Therm-O-Disc, Inc., Mansfield, OH, USA*).

- 0424** Effect of Dimensional Change on Sealing Characteristics of Dental Amalgam. L.J. ABBOTT\*, A.L. NEME, and B.B. MAXSON (*University of Detroit Mercy, MI, USA*).
- 0425** Photoelastic Expansion and Dimensional Change of Amalgam. J.W. OSBORNE\* (*University of Colorado Health Science Center, Denver, USA*).
- 0426** Shot-impact Testing of Consolidated Silver and Amalgam Margins. R. GUNNING\*, F.C. EICHMILLER, A. MAXWELL, and A.A. GIUSEPPETTI (*Naval Dental School, Bethesda, MD; and ADA Paffenbarger Research Center, NIST, Gaithersburg, MD, USA*).
- 0427** Mercury Vapor Release from Two Amalgams Using Two Condensation Techniques. J.B. LINGER\*, A.L. NEME, B.B. MAXSON, and F.E. PINK (*University of Detroit Mercy, MI, USA*).
- 0428** Vaporization of Hg from Amalgams Made from Pd-containing Alloys. J.D. ADEY\*, J.L. FERRACANE, H. NAKAJIMA, and T. OKABE (*Oregon Health Sciences University, Portland, USA; Meikai University, Japan; and Baylor College of Dentistry, Dallas, TX, USA*).
- 0429** Biocorrosion of Amalgam and Copper Alloy Induced by *Streptococcus mutans*. A.C. ZAVANELLI\*, F.C. PIMENTA, H. PANZERI, and I.Y. ITO (*F.O. and F.C.F. Ribeirão Preto, USP, Brazil*).
- 0430** Ability of Metal Ions to Alter Glutathione Levels of Monocytes. J.C. WATAHA\*, J.B. LEWIS, and P.E. LOCKWOOD (*Medical College of Georgia, Augusta, USA*).

**Seq#: 58** **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Dental Materials - Fluoride Release & Biological Effects**

- 0431** Fluoride Release and Recharge of Fluoride-releasing Restorative Materials. X. XU, J.O. BURGESS, and J.S. TURPIN-MAIR\* (*School of Dentistry, Louisiana State University, New Orleans, USA*).
- 0432** Enhanced Caries Resistance Using Fluoride-releasing Resin Materials. T. KASHIWADA\*, M. MORITA, T. HASHIMOTO, and S. KATO (*Keiai Dental Clinic, Tokyo, Japan*).
- 0433** Fluoride Release from Composite Resin-Adhesive System. S. AKAHANE\*, K. MATSUNAE, and K. HIROTA (*Research and Development Department, GC Corporation, Tokyo, Japan*).
- 0434** *In vitro* Properties of Ca-PO<sub>4</sub> Resin Cements with Remineralization Potential. G.M. FLAIM\*, S.H. DICKENS, T.L. GALLOUCIS, and S. TAKAGI (*American Dental Association Health Foundation-Paffenbarger Research Center at National Institute of Standards and Technology, Gaithersburg, MD; and United States Army Dental Activity, Walter Reed Army Hospital, Washington, D.C., USA*).
- 0435** Cytotoxicity of Various Mouthwashes and Dentifrices *in vitro*. S. DOGAN, G. LEYHAUSEN\*, and W. GEURTSSEN (*Department of Conservative Dentistry and Periodontology, Medical University Hannover, Germany*).
- 0436** *In vitro* Study of Components Released from Fissure Sealants and Their Estrogenicity. M. MATSUZAWA\*, A. KAWATA, S. KURATA, N. UCHIMURA, and T. KAWASE (*Departments of Pediatric Dentistry and Dental Bioengineering, Kanagawa Dental College, Yokosuka, Japan*).

**0437** Biological Performance of Hydroxyapatite Obtained from the Echinoderm's Skeleton. M.A. ARAIZA\*, L.A. GAITAN-CEPEDA, M. GARCÍA-GARDUÑO, and V. CASTAÑO (*Facultad de Odontología, UNAM; and Instituto de Física, UNAM, México*).

**0438** Delivery of Non-steroidal Anti-inflammatory Drugs from Dental Materials. W.M. VAUGHAN\*, G.L. BARNETT, and R.F. PUCHYR (*United States Army Dental Research Detachment, Great Lakes, IL, USA*).

**0439** Allergic Response to Rubber Dam: Clinical and Immunohistochemical Study. S. PONCE\*, M. PECH, I. MORALES, and J.A. LUGO-RÍOS (*Facultad de Odontología, UNAM, México*).

**0440** *In vitro* Biocompatibility of an Experimental Liquid Crystal Monomer. D. CARNES\*, C. DUPLANTIS, S.T. WELLINGHOFF, J.L. ONG, and M. MacDOUGALL (*University of Texas Health Science Center, San Antonio; and Southwest Research Institute, San Antonio, TX, USA*).

**0441** Adherence of *S. mutans* on Different Filling Materials—An *in vitro* Study. S. EICK\*, E. GLOCKMANN, B. BRANDL, W. PFISTER, and E. STRAUBE (*Department of Microbiology and Department of Conservative Dentistry, University of Jena, Germany*).

**0442** Bactericidal Activity of MDPB Measured by a Viability Staining Method. K. OHMORI\*, S. IMAZATO, N. MAEDA, A. KOHNO, and R.R.B. RUSSELL (*Tsurumi University and Osaka University, Japan; and University of Newcastle, UK*).

**0443** Dentinal Adhesive Systems Used in Treatment of Furcation Perforations. *In vivo* Study. J.P. TORRES\*, C.A. GALLARDO, C. ESPINOZA, H. VILLENA, and M.A. SARAIVA (*Universidad Peruana Cayetano Heredia, Lima—Perú*).

**0444** Biocompatibility of Two Current Adhesive Resins. C.A.S. COSTA, H.M. TEIXEIRA, A.B.L. NASCIMENTO\*, and J. HEBLING (*Araraquara School of Dentistry-UNESP; and Pernambuco School of Dentistry-UPE, Brazil*).

**0445** Computer-generated Implantable Hollow Mold for Implementation of Guided Tissue Regeneration. R.K. ALDER\* and M.E. ALDER (*Dental School, University of Texas Health Science Center at San Antonio, USA*).

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**Seq#: 59**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Diagnostic Systems - Abfraction/Imaging/Sound**

**0446** A Comparison of Contact and Optical Methods for Measuring Abfraction Wear. R. DeLONG\*, M.R. PINTADO, M. HEINZEN, C.C. KO, and W.H. DOUGLAS (*Minnesota Dental Research Center for Biomaterials and Biomechanics, University of Minnesota, Minneapolis, USA*).

**0447** Abfraction and Occlusal Wear: A Correlation. M.R. PINTADO\*, R.L. SAKAGUCHI, R. DeLONG, C.C. KO, and W.H. DOUGLAS (*MDRCBB, University of Minnesota, Minneapolis; and Oregon Health Sciences University, Portland, USA*).

**0448** Dental Optical Coherence Tomograph: A Comparison of Imaging Characteristics in Two Intra-oral Systems. L.L. OTIS\*, M.J. EVERETT, U.S. SATHYAM, and B.W. COLSTON (*Lawrence Livermore National Laboratory, CA; and University of Connecticut School of Dental Medicine, Farmington, USA*).

**0449** Recording of Casts in ICP with an Optical 3D Measuring System. K. ARAI\*, M. FUJITA, and H. ISHIKAWA (*Department of Orthodontics, Nippon Dental University, Tokyo, Japan*).

**0450** Tongue Movement during Speech: An M-mode Ultrasound Study. C.-L. PENG\*, C.-T. LIN, and W.-C. YEH (*School of Dentistry and Institute of Oral Rehabilitation, Taipei Medical College, Taiwan, ROC*).

**0451** The Accuracy of Digital Cameras in Measuring Tooth Color. C. BENZ\*, M. ERBSHÄUSER, B. BENZ, and R. HICKEL (*Department of Restorative Dentistry and Periodontology, University of Munich, Germany*).

**0452** Diagnosis of the Premature Contact by Using Tooth Vibration. Y. ITO\*, K. SUZUKI, S. TAJIMA, K. SUGIURA, and T. NISHIDA (*School of Dentistry, Aichi-Gakuin University, Nagoya, Japan*).

**0453** Electronic Subgingival Calculus Detection: Clinical Use. I.-C. WANG\*, K.G. PALCANIS, R.L. JEFFCOAT, and M.K. JEFFCOAT (*School of Dentistry, University of Alabama at Birmingham, USA*).

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**Seq#: 60**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Geriatric Oral Research - Oral Health in Long-term-care Facilities, Masticatory Performance**

**0454** Dental Care to Elderly in Institutions: An Interview of Directors and Medical Doctors. J.-P. CHUNG, P. MOJON, and E. BUDTZ-JØRGENSEN\* (*University of Geneva, Switzerland*).

**0455** Concepts of Social Responsibility in Dentistry among Educators and Administrators. S. DHARAMSI\* and M.I. MacENTEE (*Institute of Health Promotion Research, University of British Columbia, Vancouver, Canada*).

**0456** A Manual for Daily Oral Hygiene in Long-term Care. M. SUN\*, C.C.L. WYATT, M.I. MacENTEE, and P.M. WILLIAMS (*Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).

**0457** Oral Health Changes in a Long-term Care Facility over 30 Months. P. MOJON\*, E. BUDTZ-JØRGENSEN, and A. RENTSCH (*University of Geneva, Switzerland*).

**0458** Oral Hygiene of Hospitalized Elderly Related to Functional and Mental Status. V. DORMENVAL\*, P. MOJON, F. HERMANN, G. GOLD, and E. BUDTZ-JØRGENSEN (*University of Geneva, Switzerland*).

**0459** Oral Disorders in Long-term Care with and without a Dental Clinic. L.L.S. JUNG, C.C.L. WYATT\*, P.M. WILLIAMS, and C. ZED (*Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).

**0460** Threats to the Oral Health of Institutionalized Older Adults. J.G. STEELE\*, A. SHEIHAM, W. MARCENES, and A.W.G. WALLS (*Newcastle Dental School and Department of Epidemiology and Public Health, University College, London, UK*).

**0461** Overcoming Barriers to Providing Oral Health Services to Homebound Patients. T.B. ELISON\*, A.V. STEWART, and L.J. GOLDSMITH (*Departments of Orthodontic, Pediatric, and Geriatric Dentistry, University of Louisville, KY, USA*).

**0462** Rankings by Dental Personnel of Oral Disorders in Old Age. M.I. MacENTEE\* and C.C.L. WYATT (*Department of Oral Health Sciences, Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).

**0463** Comparison of Oral Conditions by Feeding Method for Dysphagic People. F. TAMURA\*, R. AYANO, M. MIZUKAMI, and Y. MUKAI (*Department of Hygiene & Oral Health, Showa University, Tokyo, Japan*).

**0464** The Chewing Ability and QOL of the Elderly in Japan. H. MIURA\*, Y. ARAI, and T. UMENAI (*Department of Health Policy and Planning, University of Tokyo; and National Institute for Longevity Sciences, Aichi, Japan*).

**0465** Relation between Masticatory Ability and General Health in the Elderly. K. IKEBE\*, H. NAMBA, K. IWASE, and T. NOKUBI (*Department of Removable Prosthodontics, Osaka University, Japan*).

**0466** Masticatory Performance Prediction Model. C. BUENTELLO\*, J.P. HATCH, S. SAKAI, and J.D. RUGH (*University of Texas Health Science Center at San Antonio, USA*).

**Seq#: 61** **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

### Geriatric Oral Research - Epidemiology

**0467** Should the DMFT Index Be Used in Gerodontology? I. NITSCHKE and W. HOPFENMÜLLER\* (*Department of Dental Prosthetics and Oral Gerontology, Charité, Humboldt-Universität zu Berlin; and Institute for Medical Statistics, Universitätsklinikum Benjamin Franklin, Freie Universität Berlin, Germany*).

**0468** Correlation of Dental and Nutritional Status in Elderly Patients. H. WICKOP\*, B. WÖSTMANN, P. FERGER, and G. KOLB (*Department of Prosthodontics, Justus-Liebig-University, Giessen; and Department of Geriatrics, Saint Bonifatius General Hospital, Lingen, Germany*).

**0469** Coronal/Root Caries Prevalence in an Elderly Population in Mexico City. S.A. BORGES, G. MAUPOMÉ\*, and M. MARTÍNEZ (*Facultad de Odontología, Universidad Nacional Autónoma de México; Faculty of Dentistry, University of British Columbia, Vancouver, Canada; and Instituto Nacional de Salud Pública, Cuernavaca, México*).

**0470** Clinical Oral Health Status in Users of VA Medical Care. J.A. JONES\*, N.R. KRESSIN, C. WEHLER, C. HAYES, A. SPIRO, III, D.R. MILLER, L. KAZIS, and R.I. GARCIA (*VAMC, Bedford and Boston, MA; and Boston and Harvard Universities, USA*).

**0471** Non-response Bias in a Longitudinal Oral Health Survey of Older Adults. A. JOKOVIC\* and D. LOCKER (*Faculty of Dentistry, University of Toronto, ON, Canada*).

**0472** Oral Soft Tissue Lesions among Iowa Old-elderly. J.S. HAND\*, J.J. WARREN, H.J. COWEN, C.A. WATKINS, J.M. JONES, S.M. LEVY, M. FINKELSTEIN, and A.J. BOLDEN (*University of Iowa, Iowa City, USA*).

**0473** Periodontal Attachment Loss in the 80+ Elderly. J.J. WARREN, S.M. LEVY\*, H.J. COWEN, J.S. HAND, H.L. KIRCHNER, and C.A. WATKINS (*College of Dentistry, University of Iowa, Iowa City, USA*).

**0474** Prevalence of Coronal Caries in the Very Old. J.J. WARREN\*, J.S. HAND, H.J. COWEN, H.L. KIRCHNER, C.A. WATKINS, and J.M. JONES (*College of Dentistry, University of Iowa, Iowa City, USA*).

**0475** Root Caries Patterns in a Very Elderly Rural Population. H.J. COWEN\*, J.J. WARREN, J.S. HAND, H.L. KIRCHNER, C.A. WATKINS, and J.M. JONES (*College of Dentistry, University of Iowa, Iowa City, USA*).

**0476** Oral Hygiene and Perceived Oral Health Status of Chinese Immigrants. M.J. HOBBS\*, J.T. CHAN, and S. NARENDRAN (*University of Texas at Houston Dental Branch, USA*).

**Seq#: 62** **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

### Behavioral Sciences & Health Services Research - Fluorosis and Preventive Dentistry

**0477** Clinical and Photographic Assessment of Fluorosis Presence. A. SOTO-ROJAS\*, E. MARTÍNEZ-MIER, J. UREÑA-CIRETT, J. HERNÁNDEZ-GUERRERO, G.K. STOOKEY, and A.J. DUNIPACE (*UIC, Mexico; and IUSD, Indianapolis, IN, USA*).

**0478** Risk Indicators for Dental Fluorosis in Children in Campeche, Mexico. A. VALLEJOS\*, S. PÉREZ, P. GUTIÉRREZ, and G. JIMÉNEZ (*Faculty of Dentistry, Autonomous University of Campeche, México*).

**0479** Fluorosis Risk Factors and Dental Fluorosis in Veracruz, Mexico. E. MARTÍNEZ-MIER\*, J. HERNÁNDEZ-GUERRERO, A. SOTO-ROJAS, J. UREÑA-CIRETT, G.K. STOOKEY, and A.J. DUNIPACE (*UIC, Mexico; and IUSD, Indianapolis, IN, USA*).

**0480** Prevalence of Dental Fluorosis in a Non-fluoridated Community. A. ELIAS, N. MEDINA\*, K. CRESPO, C. TORO, A. ELIAS, and C. GONZALEZ (*School of Dentistry, UPR, San Juan, Puerto Rico*).

**0481** Fluoride Level in Drinking Water of Pakistan. A.A. KHAN\* (*Shaikh Zayed Hospital, Lahore, Pakistan*).

**0482** Water Intake Related to Climate among Children Aged 2-8 Years in the United States. W. SOHN\* and B.A. BURT (*Program in Dental Public Health, University of Michigan School of Public Health, Ann Arbor, USA*).

**0483** Effects of an 11-month Break in Water Fluoridation on the Development of Caries and Fluorosis. B.A. BURT\*, M.A. KEELS, and K.E. HELLER (*University of Michigan, Ann Arbor; and Duke University Medical Center, Durham, NC, USA*).

**0484** Socio-economic Status and Its Relation to Dental Caries and Fluorosis. M.D. MACEK\*, B.A. BURT, and D.M. BRISKIE (*University of Maryland at Baltimore Dental School; University of Michigan School of Public Health; and Mott Children's Health Center, USA*).

**0485** The Interaction of Water Fluoridation and Poverty on Dental Caries. C.M. JONES\* and K. WOODS (*North West DPH Resource Centre, Wesham, England, UK*).

**0486** Pediatricians' Use of Dietary Fluoride Supplements in Regions of Ohio. M.M. MATTSON\*, J.A. LALUMANDIER, and T.R. JASINEVICIUS (*CWRU School of Dentistry, Cleveland, OH, USA*).

**0487** Economic Effect of Fluoride Mouthrinse for Schoolchildren in Japan. Y. ANDO\*, T. TAKIGUCHI, and M. NAKATA (*Department of Preventive Dentistry, School of Dentistry, Niigata University; Health Insurance Bureau, Ministry of Health and Welfare; and Department of Pediatric Dentistry, School of Dentistry, Kyushu University, Japan*).

**0488** Recommending and Applying Sealants: Motivating Factors for Dentists' Decision-making. D.O. WATSON\* and M. INGLEHART (*School of Dentistry, University of Michigan, Ann Arbor, USA*).

**0489** Offering Japanese Prefectural Governments Materials for Oral Health Education. T. WATANABE\* (*Preventive Dentistry and Dental Public Health, Fukuoka Dental College, Japan*).

**0490** Developing Diagnostic Codes for Public Dental Programs. W. SABBAH\*, J.L. LEAKE, and P.A. MAIN (*University of Toronto and the City of Toronto Public Health Department, Ontario, Canada*).

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**Seq#: 63**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Behavioral Sciences & Health Services Research - Dentists' Practice and Knowledge**

**0491** Dental Expenditures: Trend Analysis by Selected Dentist/Practice Characteristics 1985-1995. J. BROWN\* and V. LAZAR (*American Dental Association, Chicago, IL, USA*).

**0492** A Study of Issues of Special Concern for Women in Dentistry. P.J. PANUCCI\*, A.V. STEWART, and J.P. SCHEETZ (*School of Dentistry, University of Louisville, KY, USA*).

**0493** A Study of Minority Dentists. K.S. WAGNER\* (*American Dental Association, Chicago, IL, USA*).

**0494** Health Care Providers' Experiences, Knowledge, and Perceptions of a Latex-safe Environment. H.N. ZAK\*, L.M. KASTE, K. SCHWARZENBERGER, J.M. BARRY, and G.M.P. GALBRAITH (*Medical University of South Carolina, Charleston, USA*).

**0495** Workday Activity of Dentists and Auxiliaries in a Prison Setting. C. AYERS\* and R. ABRAMS (*Marquette University School of Dentistry, Milwaukee, WI, USA*).

**0496** A 30-year Longitudinal Retrospective Study of Dental Treatments in a General Dental Practice. K.-A. HILLER, G. SCHMALZ, and J. STEIGER\* (*Department of Operative Dentistry and Periodontology, University of Regensburg, Germany*).

**0497** Ten-year Changes (1987-1997) for Actively Practicing Dentists in Iowa. H.M. FIELD\*, J.R. JAKOBSEN, and N.S. LOGAN (*College of Dentistry, University of Iowa, Iowa City, USA*).

**0498** Surveying Services Provided by General Dentists in Cuyahoga County, Ohio. I. LIN\*, S. JOSHI, S. NELSON, and M. HANS (*Craniofacial Research Group, Case Western Reserve University School of Dentistry, Cleveland, OH, USA*).

**0499** Factors Related to Reduced Career Participation of Dental Practitioners. F.S.P. SZUSTER\* and A.J. SPENCER (*Dental Statistics and Research Unit, Australian Institute of Health and Welfare, University of Adelaide*).

**0500** Perceptions of the Importance of, and Control over, Problems in the Clinical Setting. A Survey of Dentists and Dental Students. S.A. BORGES\*, A. PINEDA, and G. MAUPOMÉ (*Facultad de Odontología, Universidad Nacional Autónoma de México; and Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).

**0501** Clinician Reliability in Classifying Disease Risk and Reasons for Treatment. J.D. BADER\*, A. WHITE, O. OLSON, G. SENFT, and D.A. SHUGARS (*University of North Carolina, Chapel Hill; Kaiser Center for Health Research; and Permanente Dental Associates, Portland, OR, USA*).

**0502** Antibiotic Treatment for Periodontitis: A Survey of South Carolina Periodontists. J.W. GRIFFIN\* and S.G. REED (*College of Dental Medicine, Medical University of South Carolina, Charleston, USA*).

**0503** Assessment of Dentists' Needs for Microbial Information in Periodontal Treatment. R. HORN BROOK\*, R. CROUT, L.T. VESELICKY, J. THOMAS, C. FRERE, C. BERG, and S. WEARDEN (*West Virginia University, Morgantown, USA*).

**0504** Knowledge of Supportive Periodontal Therapy in a Group of U.K. Dental Practitioners. R.J. TUCKER\*, U.R. DARBAR, and I.G. NEEDLEMAN (*Eastman Dental Hospital & Institute, London, UK*).

**0505** Application of a Modified CPITN by Dentists in The Netherlands. G. VAN ROSSUM\* and G. ZEEGERS (*Dutch Dental Association, The Netherlands*).

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**Seq#: 64**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Behavioral Sciences & Health Services Research - Toothpastes and Toothbrushes**

**0506** Use of Fluoride Toothpaste amongst Irish Infants. J.A. COCHRAN\*, E. MACSWEENEY, D. O'MULLANE, and H. WHELTON (*Oral Health Services Research Centre, University Dental School, Cork, Ireland*).

**0507** Fluoride Dentifrice Use and Toothbrushing Behaviors among Preschool Children. J.A. MCGRADY, S.M. LEVY, P. BHURIDEJ\*, and J.J. WARREN (*College of Dentistry, University of Iowa, Iowa City, USA*).

**0508** Transversal Technique as an Alternative to Placing Fluoride Dentifrice: An Evaluation in South America. R.S. VILLENA\* (*Social Dentistry, Peruvian University Cayetano Heredia, Lima, Peru*).

**0509** Toothpaste Utilization among Mexican Children. J. UREÑA-CIRETT\*, A. SOTO-ROJAS, E. MARTÍNEZ-MIER, J. HERNÁNDEZ-GUERRERO, G.K. STOOKEY, and A.J. DUNIPACE (*Universidad Intercontinental, Mexico D.F.; and Indiana University School of Dentistry, Indianapolis, USA*).

**0510** Psychosocial Factors Associated with Toothbrushing among Quebec Students of 13 and 14 Years Old. C. GALARNEAU\*, J.-M. BRODEUR, C. DASSA, A. CHARBONNEAU, C. BEDOS, and M. BENIGERI (*GRIS, University of Montreal, Canada*).

**0511** Influence of Sodium Bicarbonate of Toothpastes on Saliva Buffering Capacity. N. SALIBA\*, S.S. MOIMAZ, C. SALIBA, and S. CORRÊA (*School of Dentistry, UNESP, Araçatuba, São Paulo, Brazil*).

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**Seq#: 65**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Cariology Research - Fluorides**

**0512** The Effect of a Fluoride Varnish on Caries Inhibition. E. DOWNEY\* and A. SEGURA (*University of Iowa, Iowa City, USA*).

**0513** Feasibility of a Fluoride Varnish Program in Head Start Children. J. AUTIO\* and F. COURTS (*University of Florida, Gainesville, USA*).

**0514** Focus Group Discussions on Diet and Fluoride in Abu Dhabi. E. AL-HOSANI\* and A. RUGG-GUNN (*Department of Child Dental Health, Newcastle University Dental School, UK*).

**0515** Estimated Ingestion of Fluoride Dentifrice by Preschool Children. J.R. HEILMAN\*, J.A. MCGRADY, S.M. LEVY, J.S.

WEFEL, P. BHURIDEJ, and J.J. WARREN (*College of Dentistry, University of Iowa, Iowa City, USA*).

**0516** Urinary Fluoride Concentration and Excretion in Venezuelan Preschool Children. C. FEBRES-CORDERO, S. FELDMAN, M.A. ARASME, D.F. PEDAUGA, H. GONZALEZ, F. ROJAS-SANCHEZ\*, and A.M. ACEVEDO (*Faculty of Dentistry, UNERG and University of Central Venezuela, Caracas*).

**0517** Concentration of Fluoride (F) in Carbonated Soft Drinks. M.C. HERNANDEZ, I. PEREZ, H. GONZALEZ\*, F. ROJAS-SANCHEZ, and A.M. ACEVEDO (*Faculty of Dentistry, Central and Romulo Gallegos University, Caracas, Venezuela*).

**0518** A De/Remineralization Comparison of Fluoride-releasing Restorations *in situ*. K.J. DONLY, A. SEGURA, J.S. WEFEL, and M.M. HOGAN\* (*Dows Institute for Dental Research, College of Dentistry, University of Iowa, Iowa City, USA*).

**0519** Compomer Materials: F Release and Its Capture by Dentin. A. PAGLIARINI\*, M. REA, and R. RUBINI (*University of Ferrara, Italy*).

**0520** Caries Inhibition of Glass-ionomer Cements: Fuji IX and Ketac Molar. R. LIN\* and K.J. DONLY (*Dows Institute for Dental Research, College of Dentistry, University of Iowa, Iowa City, USA*).

**0521** Caries Inhibition of Fluoride-releasing Restoratives. A. WESTERMAN\* and K.J. DONLY (*Dows Institute for Dental Research, College of Dentistry, University of Iowa, Iowa City, USA*).

**0522** *In vitro* Secondary Caries/Microbial Growth around Different Dental Materials. J. ERICKSON\*, M.E. WILSON, R.L. GREGORY, and M. FONTANA (*Indiana University School of Dentistry, Indianapolis, USA*).

**0523** *In vitro* Fluoride Release Rates of Two Commercial Fluoride Tablets and an Experimental Xylitol/Fluoride Lozenge. S. HAMIR, A.M. YAARI\*, and S.B. HEIFETZ (*School of Dentistry, University of Southern California, Los Angeles, USA*).

**0524** *In vitro* Study of Fluoride Bioavailability from Dentifrices in Thailand. E. BENJAVONGKULCHAI\*, S. TAMSAILOM, B. SCHEMEHORN, and G.K. STOOKEY (*Faculty of Dentistry, Chulalongkorn University, Thailand; and School of Dentistry, Indiana University, Indianapolis, USA*).

**0525** Fluoride Accumulation in Enamel and Dentin after Application of Different Fluoride Solutions. K.-H. FRIEDL, G. SCHMALZ, H. JUNG\*, and K.-A. HILLER (*Department of Operative Dentistry and Periodontology, University of Regensburg, Germany*).

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**Seq#: 66**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

### **Cariology Research - Dentifrices**

**0526** *In situ* Evaluation of a Dentifrice Formulation with Low Fluoride Concentration. P.E.C. PERES, A.A. DEL BEL CURY\*, A. KLEINE, and J.A. CURY (*Faculty of Dentistry of Piracicaba, UNICAMP, Brazil*).

**0527** Effect of Fluoride Dentifrice and/or APF Application on Demineralized Dental Enamel. A.F. PAES LEME\*, C.M. TABCHOURY, J.A. CURY, J. FU, and D.T. ZERO (*FOP—UNICAMP, Brazil; and Eastman Department of Dentistry, Rochester, NY, USA*).

**0528** An Evaluation of Fluoride Dentifrice or 0.02% NaF Solution on Caries Development in Deciduous Teeth Using a pH-

cycling Model. S.J. CHEDID\* and J.A. CURY (*FO—USP and FOP—UNICAMP, Brazil*).

**0529** Anticaries Efficacy of Calcium Phosphate Dentifrice under Different *in situ* Model Conditions. D.T. ZERO, J. FU\*, A. HAYES, K. SCOTT-ANNE, R. GLENA, H.M. PROSKIN, C.W. TRIOL, and A.E. WINSTON (*Eastman Department of Dentistry, University of Rochester, NY; and Enamelon, East Brunswick, NY, USA*).

**0530** Fluoride Deposition in a Two-component Dentifrice System. M. MARKOVIC, S. TAKAGI, B. SIECK\*, and L.C. CHOW (*American Dental Association Health Foundation-Paffenbarger Research Center, National Institute of Standards and Technology, Gaithersburg, MD, USA*).

**0531** Long-lasting Plaque Fluoride Concentrations after Using Triclosan/Copolymer/NaF (TCF) Dentifrice. Y.P. ZHANG\*, C.S. DIN, J.C. BLAKE-HASKINS, and A. GAFFAR (*Colgate-Palmolive Company, Piscataway, NJ, USA*).

**0532** All Triclosan Dentifrices are Different in Remineralization of Incipient Caries. K.K. PARK, S.J. HONG\*, and S.S. JEONG (*School of Dentistry, Indiana University, Indianapolis, USA; and Chonnam National University, Korea*).

**0533** Effect of Calcium Availability on Remineralization Performance. A.E. WINSTON, D.P. JOHNSON\*, and A. NUNEZ (*Enamelon Inc., Cranbury, NJ, USA*).

**0534** Effect of Calcium on Bio-availability of Fluoride. A.E. WINSTON, D.P. JOHNSON, and A. NUNEZ\* (*Enamelon Inc., Cranbury, NJ, USA*).

**0535** Fluoride, Calcium, and Phosphate Released from a Remineralizing Toothpaste. D.P. JOHNSON, S.E. SONENBLUM, A. NUNEZ, B. BUPATHI\*, and A.E. WINSTON (*Enamelon Inc., Cranbury, NJ, USA*).

**0536** Remineralization of Enamel by a Dentifrice after Demineralization with Soft Drinks. C.A. MUNOZ, J. SY, A. AGUILAR, W. ZHANG, C.W. TRIOL\*, and A.E. WINSTON (*Loma Linda University, CA; Consultant, Somers, MT; and Enamelon, Inc., NJ, USA*).

**0537** Remineralization of Incipient Enamel Lesions without Saliva. W. ZHANG\*, J. DAVIS, Y. LI, C.W. TRIOL, and A.E. WINSTON (*Loma Linda University, CA; and Enamelon, Inc., NJ, USA*).

**0538** Anticaries Efficacy of Two New Dentifrice Formulations. S.L. EVERSOLE\*, R.V. FALLER, and J.D.B. FEATHERSTONE (*Procter & Gamble Company, Cincinnati, OH; and University of California at San Francisco, USA*).

**0539** Animal Caries Efficacy of a New Multi-functional Dentifrice. A.M. PFARRER\*, S.L. EVERSOLE, J.M. BEST, and R.V. FALLER (*Procter & Gamble Company, Cincinnati, OH, USA*).

**0540** Animal Caries Efficacy of a Baking Soda/Peroxide Dentifrice. J.M. BEST\*, S.L. EVERSOLE, and R.V. FALLER (*Procter & Gamble Company, Cincinnati, OH, USA*).

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**Seq#: 67**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

### **Oral/Dental Hygiene - Oral Health Behavior**

**0541** Oral Health Status in Different Trimesters of Pregnant Women, Chiang Mai, Thailand. S. CHARERNRITSATEAN, N. DATPOOTTAWAT, P. PAWITWONG, P. TRIBUPPACHATSAKUL, and K. PATTANAPORN\* (*Faculty of Dentistry, Chiang Mai University, Thailand*).



**0542** University Knowledge about Oral Health Care in Primary Infancy. M.B. PORTELA, R.B. SOUZA, L. PRIMO\*, and I.P.R. SOUZA (*School of Dentistry, Federal University of Rio de Janeiro, Brazil*).

**0543** Dental Caries and Oral Health Habits in Swiss Juveniles. O. KRONENBERG, K. JUNGO, T. LEISEBACH-MINDER, A. STASSINAKIS, and P. HOTZ\* (*University of Bern, Switzerland*).

**0544** Oral Health Counseling by a Vietnamese Lay Health Worker: Three-year Results. R.L. HARRISON\*, T. WONG, and Y. PHUNG (*Department of Dentistry, University of British Columbia, Vancouver; and Vancouver/Richmond Health Board, British Columbia, Canada*).

**0545** Oral Health Status of Women of Different Ethnic and Racial Backgrounds: A Pilot Study. A.A. CHOHAIEB\* and G.L. HENLEY (*Howard University, Washington, DC, USA*).

**0546** Prespatou Fluoride Rinse Research Project (1995-8) to Reduce the Severity of Decay in Rural British Columbia. L. BOURCET\*, G. MAUPOMÉ, H.J. HANN, and M. WILLIAMSON (*Ministry of Health, Victoria; and Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).

**0547** Effect of Prophylaxis on Caries Development Depending on the Residential Area. M. BIZHANG\*, S. ZIMMER, R. SEEMANN, and J.-F. ROULET (*Department of Operative and Preventive Dentistry, Charité Berlin, Germany*).

**0548** Oral Health Awareness in a Cohort of HIV/AIDS Patients. E. BLIGNAUT\*, M.L. TURNER, and S.S. MASHELE (*Faculty of Dentistry, MEDUNSA, Pretoria, South Africa*).

**0549** Tooth Loss in General Practice Population: A Twenty-year Retrospective. K.M. MOSTLER\*, H.A. NESSMITH, and S.M. MANKODI (*Jupiter, FL, USA*).

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**Seq#: 68**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Mineralized Tissue - Odontogenesis: Cells**

**0550** Teeth of the Reef fish *Polypterus* are Covered by an Outer Layer Different from Enamel but Containing Enamel-like Features such as Enamel Proteins and Long and Parallel Crystals. B. GURINSKY\*, P. SATCHELL, and T.G.H. DIEKWISCH (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**0551** Screening for Genomic Sequences of the Tooth Transcription Factor KROX-26. F. LIM\*, B. GANSS, and Y. YAMADA (*MRC Group in Periodontal Physiology, Faculty of Dentistry, University of Toronto, ON, Canada; and NIDCR/NIH, Bethesda, MD, USA*).

**0552** Cell Proliferation and Cell Death during Odontogenesis in the Mouse. N. SHIGEMURA\*, T. KIYOSHIMA, I. KOBAYASHI, K. MATSUO, H. YAMAZA, A. AKAMINE, and H. SAKAI (*Faculty of Dentistry, Kyushu University, Fukuoka, Japan*).

**0553** Movement of Ameloblasts in the Lower Rat Incisor. D. CICCÍU, P. CATALANO\*, G. CUTRONEO, G. SANTORO, and F. TRIMARCHI (*University of Messina, Italy*).

**0554** Amelogenin and Cementogenesis in Guinea Pig Molars. Y. HAMAMOTO\* and L. HAMMARSTRÖM (*Oral Surgery, Niigata University, Japan; and Center for Oral Biology, Karolinska Institutet, Stockholm, Sweden*).

**0555** Immortomouse-derived Dental Papillae Mesenchyme (DPM) Cells Maintained *in vitro* Produce a Dentin Mineralized Matrix. J. CATON\*, P. BRINGAS, Jr., and M. ZEICHNER-

DAVID (*CCMB, USC School of Dentistry, Los Angeles, CA, USA*).

**0556** Rapid Fixation of Rat Tooth Germs for Electron Microscopy Using Microwave Irradiation. L.F. MASSA and V.E. ARANA-CHAVEZ\* (*Department of Histology and Embryology, Institute of Biomedical Sciences, University of São Paulo, Brazil*).

**0557** Immunohistochemical Localization of Non-collagenous Matrix Proteins in Human Tooth Germ. K. SATOMURA\*, E. HAYASHI, L.W. FISHER, and M. NAGAYAMA (*First Department of Oral Maxillofacial Surgery, Tokushima University, Japan; and Craniofacial and Skeletal Diseases Branch, NIDCR, NIH, Bethesda, MD, USA*).

**0558** Expression and Characterization of Native Mouse Dentin Matrix Protein I. V.T. WELLINGHOFF\*, J. NYDEGGER, O.H. RYU, J.Q. FENG, J.P. SIMMER, and M. MacDOUGALL (*Department of Pediatric Dentistry, University of Texas Health Science Center at San Antonio, USA*).

**0559** Influence of Growth and Thyroid Hormones on Tooth Development. L. KREKMANOVA\*, K. HULTENBY, M. BOHLOOLY, S. GÖTHE, G. DAHLLÖF, and J. WROBLEWSKI (*Departments of Pediatric Dentistry and Basic Oral Science, Karolinska Institutet, Huddinge; and Department of Physiology, University of Gothenburg, Sweden*).

**0560** *In vitro* Effects of Ethanol and Nicotine on Murine Odontogenesis. L. GAITÁN\*, T. PÉREZ, R. PÉREZ, and H. ARZATE (*National Autonomous University of Mexico*).

**0561** Cultured Dermal Fibroblasts from OI Type I Patients Demonstrate Tetraploidy. R.L. SLAYTON\* and M.C. WILLING (*University of Iowa, Iowa City, USA*).

**0562** Influence of Fluorine in Dental Mineralization and Eruption. M.M.A. ARAUJO\* and E. MEDICI FILHO (*Fac. Odontologia—São Paulo dos Campos, UNESP, Brazil*).

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**Seq#: 69**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Mineralized Tissue - Enamel Proteins**

**0563** Identification and Analysis of the Bovine Ameloblastin Gene Sequence. D. MACHULE\*, W. LI, and P. DenBESTEN (*Department of Growth and Development, University of California, San Francisco, USA*).

**0564** PLCg and EGF, FGF, PDGF Receptor Localization during Early Amelogenesis. Y. TANIKAWA\* and J.W. BAWDEN (*Asahi University, Gifu, Japan; and University of North Carolina, Chapel Hill, USA*).

**0565** Cloning and Characterization of Human Enamelin cDNA. C.-C. HU\*, Q. QIAN, C. ZHANG, and J.P. SIMMER (*University of Texas Health Science Center at San Antonio, USA*).

**0566** Lysyl Oxidase Localization during Porcine Enamel Formation. B.S. McLARTY\*, P. SATCHELL, M.I. UZEL, R.B. SANTANA, P.C. TRACKMAN, and T.G.H. DIEKWISCH (*Baylor College of Dentistry, Texas A&M University System, Dallas; and School of Dental Medicine, Boston University, MA, USA*).

**0567** Recombinant Expression of the Carboxyl-Terminus of Pig Enamelin. V. OTTMERS\*, O.H. RYU, X. CAO, J.P. SIMMER, and C.-C. HU (*University of Texas Health Science Center at San Antonio, USA*).

**0568** Lectin-like Activity of Amelogenin with Specificity for N-acetylglucosamine (GlcNAc). R.M.H. RAVINDRANATH\*, J. MORADIAN-OLDAK, and A.G. FINCHAM (*Center for*

*Craniofacial Molecular Biology, School of Dentistry, University of Southern California, Los Angeles, CA, USA).*

**0569** Microstructures of an Amelogenin Gel Matrix. H.B. WEN\*, J. MORADIAN-OLDAK, W. LEUNG, P. BRINGAS, Jr., and A.G. FINCHAM (*Center for Craniofacial Molecular Biology, School of Dentistry, University of Southern California, Los Angeles, CA, USA*).

**0570** Adherence of Growing Apatite Crystals through Self-assembled Amelogenin "Nanospheres". J. MORADIAN-OLDAK\*, J. TAN, and A.G. FINCHAM (*Center for Craniofacial Molecular Biology, School of Dentistry, University of Southern California, Los Angeles, CA; and School of Chemical Engineering, Cornell University, Ithaca, NY, USA*).

**0571** Characterization of a Chicken Egg Yolk Antibody to Mouse Recombinant Amelogenin. W.-Y. CHEN\*, P. LAVOIE, J.P. SIMMER, C.E. SMITH, and A. NANJI (*School of Dentistry, University of Texas, San Antonio, USA; and Faculties of Dentistry, McGill University and Université de Montréal, QC, Canada*).

**0572** Double Immunolocalization of Ameloblastin and Amelogenin in Brefeldin-A-treated Rat Incisor Ameloblasts. S. ZALZAL\* and A. NANJI (*Faculty of Dentistry, Université de Montréal, QC, Canada*).

**0573** Zinc Inhibits Enamel Matrix Proteases. R.F. GERLACH\*, A.P. SOUZA, and S.R.P. LINE (*Dental School of Piracicaba, University of Campinas, São Paulo, Brazil*).

**0574** Enamel Matrix Serine Proteinase 1 Expression in Eukaryotic Cells. M. LOPES-CRUZAN\*, O.H. RYU, C.-C. HU, and J.P. SIMMER (*University of Texas at San Antonio; and University of Texas Health Science Center at San Antonio, USA*).

**0575** Cloning the Mouse cDNA and Gene Encoding Enamel Matrix Serine Proteinase 1. M. BARROWS\*, C. ZHANG, Q. QIAN, C.-C. HU, and J.P. SIMMER (*University of Texas Health Science Center at San Antonio, USA*).

**0576** Hydrolysis of an Amelogenin Peptide by Recombinant Bovine Enamelysin. W. LI\*, C. GIBSON, J.D. BARTLETT, and P. DENBESTEN (*University of California at San Francisco; University of Pennsylvania, Philadelphia; and Forsyth Dental Center, Boston, MA, USA*).

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**Seq#: 70**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Salivary Research - Salivary Proteins/Molecules/Disease**

**0577** Distinct Protein Profiles of Salivary Micelle-like Globules and Supernatants. N.G. HALSTEAD\* and J.D. RUDNEY (*Department of Oral Science, School of Dentistry, University of Minnesota, Minneapolis, USA*).

**0578** Enzyme Activity of Amylase Depends on the Integrity of the Chloride-binding Site. K. SUNDAR\* and N. RAMASUBBU (*Dental Research Center, University of Medicine and Dentistry, Newark, NJ, USA*).

**0579** Evaluation of Salivary Antibodies to *Helicobacter pylori*. T. ONO\*, S. TOYA, M. TAKADA, A. WATANABE, I. MATAGA, and K. SHIBASAKI (*Department of Oral and Maxillofacial Surgery II and Department of Medicine, School of Dentistry, The Nippon Dental University, Niigata, Japan*).

**0580** Similar Autoantibody Reactivities in Human and Murine Autoimmune Salivary Hypofunction. J.D. POVEROMO, M. SINGH, A.S. PAPAS, and T.R. ESCH\* (*Forsyth Dental Center,*

*and School of Dental Medicine, Tufts University, Boston, MA, USA*).

**0581** Salivary Anti-spectrin Antibodies in Sjögren's Syndrome. M. MOODY\*, M. ZIPP, and I. AL-HASHIMI (*Baylor College of Dentistry, Texas A & M University System, Dallas, USA*).

**0582** Role of Autoantibodies in the NOD.B10 Mouse Model of Sjögren's Syndrome. J. BRAYER\*, S. YAMACHIKA, and M.G. HUMPHREYS-BEHER (*Department of Oral Biology, University of Florida, Gainesville, USA*).

**0583** Effect of Anethol Trithione (ANT) on Xerostomic Patients Affected with Sjögren's Syndrome in a Venezuelan Population. M.M. SANTOS\*, H. RIVERA, A.M. ACEVEDO, and S. CASTILLO-CASTILLO (*Central University of Venezuela, Caracas*).

**0584** N-terminal Sequence of Two Salivary Adhesion-promoting Proteins from Human Submandibular/Sublingual Saliva. S.O. AKINTOYE\*, M. DASSO, D.I. HAY, N. GANESHKUMAR, and A.I. SPIELMAN (*NYU College of Dentistry, New York; and Forsyth Dental Center, Boston, MA, USA*).

**0585** Effects of Oral Estrogens on Salivary Levels of CA 15-3 and c-erbB-2 among Women. R.K. MCINTYRE\*, C.F. STRECKFUS, L.G. BIGLER, T.M. DELLINGER, and M.R. PFEIFER (*University of Mississippi Medical Center, Jackson, USA*).

**0586** Salivary Histatin 5 Binds Divalent Metal Cations. H. GUSMAN\*, U. LENDENMANN, R.F. TROXLER, and F.G. OPPENHEIM (*Department of Periodontology and Oral Biology, School of Dental Medicine, Boston University, MA, USA*).

**0587** s-IgA and Caries in a Population-based Sample of 10-year-olds. R. SEEMANN\*, S. ZIMMER, M. BIZHANG, T. KERSTEN, and A. KAGE (*Humboldt-University, Berlin; and Robert Koch Institute, Berlin, Germany*).

**0588** Sulfation of Statherin by Human Saliva. A. MUDULI\*, P. RAMAPRASAD, N. RAMASUBBU, B. MACÊDO, and C. KASINATHAN (*Dental Research Center, New Jersey Dental School, University of Medicine and Dentistry of New Jersey, Newark, USA*).

**0589** Salivary Fluoride Levels in Women on Slow-release Fluoride Therapy. J.K. KIRKLAND\*, G. GIBSON, W.H. BOWLES, C.D. RUBIN, L.C. NIESSEN, and I. AL-HASHIMI (*VANTHCS, Baylor College of Dentistry, TAMUS; and UT Southwestern Medical Center, Dallas, TX, USA*).

**0590** Production and Removal of Hydrogen Peroxide by Salivary Gland Cells. J. ONOZAKI\*, K.M. PRUITT, B. RAHEMTULLA, and F. RAHEMTULLA (*University of Alabama School of Dentistry, Birmingham, USA*).

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**Seq#: 71**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Microbiology/Immunology - Risk Factors of Oral Diseases and Infection Control**

**0591** Risk Factors of Oral Diseases in Cerebral-palsied Children. M.T.B.R. SANTOS\*, D. MASIERO, and M.R.L. SIMIONATO (*Department of Microbiology, Institute of Biomedical Sciences, University of São Paulo, Brazil*).

**0592** Host Risk Factors for Submerged Implant Failure. E. ERICKSON\*, L. MANCL, R. PERSSON, and R.C. PAGE (*University of Washington, Seattle, USA*).

- 0593** A Biochemical Link between Periodontitis and Cardiovascular Disease. J. POTEPA\*, T. IMAMURA, and J. TRAVIS (*Institute of Molecular Biology, Jagiellonian University, Krakow, Poland; Div. of Molecular Pathology, Kumamoto University Graduate School of Medical Science, Japan; and Dept. of Biochemical Molecular Biology, Univ. of Georgia, Athens, USA*).
- 0594** Predictor Variables for Tetanus Booster Response Following Dental Treatment. H. LOGAN\*, S. LUTGENDORF, D. LUBAROFF, S. VINCENT, J.R. JAKOBSEN, E. RIVERA, and H.L. KIRCHNER (*College of Dentistry, University of Iowa, Iowa City, USA*).
- 0595** Effects of Restraint Stress on Bacterial Infection during Cutaneous Wound Healing. I.G. ROJAS\*, D.A. PADGETT, J.F. SHERIDAN, and P.T. MARUCHA (*Departments of Oral Biology and Periodontology, Ohio State University, Columbus, USA*).
- 0596** The Effect of Smoking on the Serum Antibody Response to Oral Pathogens. S. HAMLET\*, M. LINDEMAN, M.P. CULLINAN, B. WESTERMAN, and G.J. SEYMOUR (*Oral Care Research Programme, Department of Dentistry, University of Queensland, Australia*).
- 0597** Detecting Active Periodontal Diseases with Polymorphonuclear Neutrophil Lactoferrin. E.D. PEDERSON\*, L.G. SIMONSON, H.E. MORTON, S.L. SIDOFF, and R.L. AHLF (*Naval Dental Research Institute, Great Lakes, IL, USA*).
- 0598** Elevated Serum Triglycerides Enhance LPS-mediated Interleukin-1beta Release by Human Polymorphonuclear Leukocytes (PMNs). E. SHINEDLING\*, R. JOTWANI, M. NUNN, T. REES, and C.W. CUTLER (*Baylor College of Dentistry, TAMUS, Dallas, TX, USA*).
- 0599** Dental Infection Control Needs Assessment among South Asian Dentists. R. PUTTAIAH\*, R. BEDI, S. SHETTY, and K. ALMAS (*Baylor College of Dentistry, Dallas, TX, USA; Eastman Dental Institute, UK; and Bapuji Dental College, India*).
- 0600** Comparison of Microbial Contamination Control among Three Dental Suction Line Cleaning Agents. R. PUTTAIAH, P. CHEN, V. VU\*, R. KOLSTAD, and A.C. THOMAS (*Baylor College of Dentistry, Texas A & M University System, Dallas, USA*).
- 0601** The Association between Dental Office Size and Compliance with Infection Control in Taipei City. H.-C. CHENG\*, C.-T. LIN, and S.-Y. LEE (*Department of Dentistry, Taipei Medical College Hospital, Taipei Medical College, Taiwan, ROC*).
- 0602** Rapid In-office Monitoring of Dental Unit Water Contamination. R.I. KARPAY, A. KARPAY\*, and S.E. MILLS (*Tampa Dental Research Group and Kirtland AFB, Land O'Lakes, FL, USA*).
- 0603** Optimizing Microbial Recovery from Bioaerosols during a Simulated Dental Procedure. E.C. KAO\*, J. THOMAS, B.T. CHEN, and P.C. YUE (*West Virginia University; and NIOSH, Department of Energy, Morgantown, WV, USA*).
- 0604** Reduction of Bacteria-containing Spray Produced during Ultrasonic Scaling. S.L. KLYN\*, D.E. CUMMINGS, B.W. RICHARDSON, and R.D. DAVIS (*Keesler Medical Center, Keesler AFB, MS, USA*).
- 0605** Risk Factors for Oral Complications in Pediatric HIV-infected Patients. A. PUNGSUJARIT\*, N.K. CHILDERS, D. HURST, M. CRAIN, and S.M. MICHALEK (*Schools of Dentistry, Public Health, and Medicine, University of Alabama at Birmingham, USA*).
- 0606** Morbidity of the First Permanent Molar in HIV-infected Children. C.C. ESTEVES\*, G.F. CASTRO, E.R. BUNDZMAN, I.P.R. SOUZA, and L.F.R. TURA (*School of Dentistry, Federal University of Rio de Janeiro, Brazil*).
- 0607** Fungal Organism Prevalence in Saliva from HIV-infected Children: A Cytologic Study. C. FLAITZ\*, J. HICKS, S. CRON, B. CARTER, C. SIMON, S. ROSSMANN, G. DEMMLER, F. NAILS, and M. KLINE (*University of Texas Dental Branch; Baylor College of Medicine; and Texas Children's Hospital, Houston, USA*).
- 0608** Frequency of Oral Manifestations and Anti-retroviral Drugs in HIV+ Children. G.F. CASTRO\*, M.B. PORTELA, I.P.R. SOUZA, and R. HUGO (*School of Dentistry, Federal University of Rio de Janeiro, Brazil*).
- 0609** Association between Salivary Contacts and Caries Experience in HIV+ and HIV- Children. M.B. PORTELA\*, E.R. BUNDZMAN, I.P.R. SOUZA, and G.F. CASTRO (*Pediatric Dentistry, Federal University of Rio de Janeiro, Brazil*).
- 0610** Total Immune Mediators and Viral Load in HIV<sup>+</sup> Patients. A.M.A. BAQUI, M.A. JABRA-RIZK, M. ZHANG, J.I. KELLEY, W.A. FALKLER, Jr., and T.F. MEILLER\* (*University of Maryland Dental School, Baltimore, USA*).
- 0611** Secretory Leukocyte Protease Inhibitor and Viral Load in HIV<sup>+</sup> Patients. A.M.A. BAQUI\*, M.A. JABRA-RIZK, M. ZHANG, J.I. KELLEY, W.A. FALKLER, Jr., and T.F. MEILLER (*University of Maryland Dental School, Baltimore, USA*).
- 0612** Anti-peptide Antibodies Inhibit HIV-1-induced Syncytium Formation. H. ABARGHOUËI\*, L. AGRAWAL, D.N. RAO, K. KONOPKA, and N. DÜZGÜNES (*School of Dentistry, University of the Pacific, San Francisco, CA, USA; and All India Institute of Medical Sciences, New Delhi, India*).
- 0613** Prevalence of Periodontal Pathogenic and Opportunistic Micro-organisms in HIV-positive Subjects with Gingivitis and Periodontitis. F. CABRAL\*, M.J. AVILA-CAMPOS, E. JARDIM, Jr., and R. GAMBA (*São Paulo University, Brazil*).
- 0614** A Novel Protection by Saliva against Transmission of HIV. S. BARON\*, J. POAST, C.J. RICHARDSON, and M.W. CLOYD (*University of Texas Medical Branch, Galveston, USA*).
- 0615** Attitudes and Opinions about Infection Barriers, HIV, and Hepatitis B Infections in Mexican Dental Practitioners. A.E. ACOSTA-GÍO\*, G. MAUPOMÉ, and S.A. BORGES (*Facultad de Odontología, Universidad Nacional Autónoma de México; and Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).
- 0616** Awareness of Hepatitis B and Changing Attitudes of Infection Control in a Brazilian Dental School. E.J. FERES-FILHO\*, R.S. CAMILLO, C.M. NOGUEIRA, J.A.S. SOARES, and H.S.M. COELHO (*School of Dentistry and School of Medicine of Federal University of Rio de Janeiro, Brazil*).
- 0617** HBV Vaccination and Post-vaccination Testing for Antibody Protection among Dentists and Clinical Staff in Canada. G.M. MCCARTHY\*, J.K. MACDONALD, and J.J. KOVAL (*University of Western Ontario, London, Canada*).

Seq#: 72      Thursday, March 11, 11:00 am - 12:15 pm  
Poster Session, Exhibit Hall B&C

Microbiology/Immunology - HIV and HBV Infections

Seq#: 73      Thursday, March 11, 11:00 am - 12:15 pm  
Poster Session, Exhibit Hall B&C

**Microbiology/Immunology - Neutrophils, Macrophages, Fibroblasts, and Cytokines**

- 0618** Interaction between New Quinolones and Functions of Macrophages. Y. AZUMA\*, M. SHINOHARA, and K. OHURA (*Department of Pharmacology, Osaka Dental University, Japan*).
- 0619** Effect of Temperature and pH on Macrophage Cytokine Release *in vitro*. A.M. IACOPINO\*, B. COPP, I. BRADLEY, and S. NARES (*Baylor College of Dentistry, Texas A&M University, Dallas, USA*).
- 0620** A Novel Cell Adhesion Assay Using BrdU Labeling. Effects of Chemokines on b1-, b2-integrin-mediated Cell Adhesion. H. INOUE\*, S. GOHDA, N. DOMAE, and H. IMAI (*Department of Periodontology and Department of Internal Medicine, Osaka Dental University, Japan*).
- 0621** MacMARCKS Phosphorylation is Essential for b2 Integrin-mediated Adhesion. L. YUE\* and J. LI (*Department of Oral Biology, College of Dentistry, University of Illinois at Chicago, USA*).
- 0622** Influence of Composites on Inflammation in Cell Cultures. B. WILLERSHAUSEN\*, D. SCHAEFER, C.-P. ERNST, A. PISTORIUS, and W. MANN (*Dental Clinic and Department of Otorhinolaryngology, Johannes Gutenberg University, Germany*).
- 0623** Correlation of IL-1b and IL-6 Expression in Gingival Crevicular Fluid and Hyperalgesia during Mechanical Tooth Movement. L.P. LEITE\*, L. KUPP, C.S. BEEMAN, E.P. HICKS, and F.H. WELCH (*Medical University of South Carolina, Charleston; Ohio State University, Columbus; University of Kentucky, Lexington; and United States Air Force, USA*).
- 0624** Chemokine Secretion by Human PMNs after Phagocytosis. H. KATSURAGI\* and K. SAITO (*Department of Oral Microbiology, School of Dentistry at Niigata, The Nippon Dental University, Japan*).
- 0625** Measurement of ICAM-1 Receptor after Stimulation with Dental Monomers. P.Y. TONG\*, E.L. KOSTORYZ, C.C. CHAPPELOW, J.D. EICK, A. GLAROS, and D.M. YOURTEE (*University of Missouri-Kansas City; and Midwest Research Institute, Kansas City, MO, USA*).
- 0626** C-CAM Expression and Morphology of the Junctional Epithelium in Mice. R. HEYMANN\*, C. TERLING, J. WROBLEWSKI, T. MIDTVEDT, N. BEAUCHEMIN, and B. ÖBRINK (*Department of Cell and Molecular Biology; Center of Oral Biology; Department of Basic Oral Sciences, Karolinska Institute, Stockholm, Sweden; and McGill Cancer Centre, McGill University, Montreal, Canada*).
- 0627** Interleukin-17 Production in Adult Periodontitis Lesions. A. NAGAI\*, S. FURUTA, N. ITOH, R. YAMASHITA, K. FUKUIZUMI, and H. KAYA (*Fukuoka Dental College, Japan*).
- 0628** Effects of Local Anesthetics on Rat Leukocyte Functions. M. KOUNO\*, M. SHINOHARA, and K. OHURA (*Department of Pharmacology, Osaka Dental University, Japan*).
- 0629** Fas/Fas Ligand Expression on Differentiated HL-60 Cells. M. OHASHI\*, M. IWASE, D. ITO, and M. NAGUMO (*Showa University, Tokyo, Japan*).
- 0630** Fc-binding Activity of Human IgG by Human Gingival Fibroblasts. Z.N. YUAN\*, K. HELGELAND, P. GJERMO, and K. SCHENCK (*Department of Oral Biology and Periodontology, Faculty of Dentistry, University of Oslo, Norway*).

**Oral & Maxillofacial Surgery - Pathology**

- 0631** The Effects of Head and Neck Radiation on Taste and Smell. B. JAFARNIA, P.L. SANDOW\*, and M.W. HEFT (*Claude D. Pepper Center, University of Florida, Gainesville, USA*).
- 0632** Oral Symptoms during Peri- and Post-menopause. L. TARKKILA\*, A. TIITINEN, C. LINDQVIST, H. MURTOMAA, and J.H. MEURMAN (*Institute of Dentistry, University of Helsinki; Departments of Obstetrics and Gynecology and Oral and Maxillofacial Surgery, University Central Hospital, Helsinki, Finland*).
- 0633** Hospitalization of Hemophiliacs due to Oral Health Problems. P. PELTOLA\*, A. SÖDERHOLM, M. VEKALAHTI, and V. RASI (*Helsinki City Health Department, Helsinki University Hospital, Institute of Dentistry, Institute of Helsinki, and Finnish Red Cross, Finland*).
- 0634** Incidence of Osteoradionecrosis in Irradiated Patients with Head and Neck Cancer at MCV Hospitals. A.O. ABUBAKER, C.A. LOBO\*, and A. KAZANOGLU (*Department of OMFS, VCU School of Dentistry, Richmond, VA, USA*).
- 0635** Elasticity Modules in Radiotherapy Jaw Bone Correlated to Bone Micromorphology. K.A. GRÖTZ, P. KANN, B. AL NAWAS, H.A. DUSCHNER\*, J. BEYER, and W. WAGNER (*Medical Faculty, University of Mainz, Germany*).
- 0636** Prevalence of Mucous Retention Cysts of the Maxillary Sinus in Patients with a History of Asthma. J. DOWNS\* and A.O. ABUBAKER (*Department of Oral Surgery, VCU School of Dentistry, Richmond, VA, USA*).
- 0637** Iodine-Toluidine Blue Staining for Detection of Early Oral Cancer. M. TAKANO\*, T. KAKIZAWA, M. YAMA, S. NOMURA, H. NOMA, T. MURAMATSU, and M. SHIMONO (*Department of OMS, Suidobashi Hospital; 1st Department of OMS and Department of Pathology, Tokyo Dental College, Japan*).
- 0638** Mismatch Repair System and Primitive Oral Melanoma. L. LO MUZIO, S. FANALI\*, P.F. NOCINI, M.D. MIGNOGNA, G. PANNONE, C. RUBINI, M. FIORONI, M. PROCACCINI, and A. PIATTELLI (*University Federico II of Naples; University of Verona; University of Ancona; and University of Chieti, Italy*).
- 0639** Lingual Articulation Characteristics of Partial Glossectomy Patients with Normal Conversation. H. ITOH, M. YAMAZAKI\*, M. OGATA, and H. NAKAHARA (*School of Dentistry, Tohoku University, Sendai; and Miyagi National Hospital, Japan*).
- 0640** Vasovagal Syncope: A Surprising Event in Heart Transplant Subjects Undergoing Dental Surgery. M. COZZI\*, L. MONTEBUGNOLI, and G. MONTANARI (*Emergency and Operative Dentistry, School of Dentistry, University of Bologna, Italy*).
- 0641** p53 and bcl-2 Expression in Carcinogenesis of the Oral Mucosa. G. KAWASAKI\*, S. YANAMOTO, and A. MIZUNO (*First Department of Oral and Maxillofacial Surgery, Nagasaki University, Japan*).
- 0642** Morphologic Quantitative Study of Epithelium Adjacent to Oral Carcinoma. P.Y. GE\* and M.Y. LUO (*School of Dentistry, Shanghai Tiedao University, China*).
- 0643** Distant Organs and Cervical Lymph Nodes Metastasis of Oral Cancer. Y. OKADA\*, I. MATAGA, M. KATAGIRI, and K. ISHII (*Department of Oral and Maxillofacial Surgery II and*

Department of Oral Pathology, School of Dentistry, The Nippon Dental University, Niigata, Japan).

**Seq#: 75 Thursday, March 11, 11:00 am - 12:15 pm  
Poster Session, Exhibit Hall B&C**

**Periodontal Research – Diagnosis/Epidemiology - Population Studies on Periodontal Disease Status, Risk, and Progression**

**0644** The Measurement of the Progression of Periodontal Disease Using Regression Analysis. B. WESTERMAN\*, J.E. PALMER, M.P. CULLINAN, J.A. ECCLESTON, and G.J. SEYMOUR (*Oral Care Research Programme, University of Queensland, Brisbane, Australia*).

**0645** Relationship between CPITN and Probing Pocket Depth. S. KAHN\*, R.C. SOUZA, V. GONÇALVES, M. MAGALHÃES, and R.G. FISCHER (*Gama Filho University, Fluminense Federal University, and Rio de Janeiro State University, Brazil*).

**0646** Severity of Periodontitis and Risk Indicators. F. HERRERA\*, G. JIMÉNEZ, and M. ZAZUETA (*Faculty of Dentistry, Autonomous University of Campeche; and National Autonomous University, Mexico*).

**0647** Periodontitis Prevalence and Risk Indicators. L. BARONI\*, G. JIMÉNEZ, F. HERRERA, and M. ZAZUETA (*Faculty of Dentistry, University of Campeche, Mexico*).

**0648** The Periodontal Status of Jamaican Adolescents. R. CAMARA\*, M. RONDEROS, D. ROSE, and B. MICHALOWICZ (*University of Minnesota School of Dentistry, Minneapolis, USA*).

**0649** Effects of Acculturation on Tooth Loss among Hispanics. S. SEIDEL\* and S. NARENDRAN (*University of Texas (UT)-Houston Dental Branch, USA*).

**0650** Ethnic Variation in the Epidemiology of Gingivitis among Children. K. RAPONI\* and S. NARENDRAN (*Dental Branch, University of Texas at Houston, USA*).

**0651** Prevalence of Juvenile Periodontitis among Students Aged 13-19 in Ankara, Turkey. A. SARIBAY\*, G. ERE, S., and M. AKKAYA (*Periodontology Department, Dental School, Ankara University, Turkey*).

**0652** Complex Periodontal Treatment Needs and Risk Indicators in Mexican Population with Social Security. R. ESTRELLA\*, A. SEGOVIA, and G. JIMÉNEZ (*Dentistry Faculty, University of Campeche, México*).

**Seq#: 76 Thursday, March 11, 11:00 am - 12:15 pm  
Poster Session, Exhibit Hall B&C**

**Periodontal Research – Pathogenesis - Cytokines; MMPs; Adhesion Molecules**

**0653** Expression of Matrix Metalloproteinase-13 and -8 in Human Periodontitis Gingiva. T. TERVAHARTIALA\*, E. PIRILÄ, A. CEPONIS, T. SALO, Y.T. KONTTINEN, P. MAISI, and T. SORSA (*University of Helsinki and University of Oulu, Finland*).

**0654** Autocrine TGF $\beta$  Effect on Gingival Fibroblast MMP and TIMP Production. D.A. TIPTON, B.A. SESHUL\*, and M.K. DABBOUS (*University of Tennessee, Memphis, USA*).

**0655** Detection of MMP-12 in Human Gingiva. M.L. TAYLOR\*, K.J. LAMPI, B.K. MADDOX, and T.E. MADDEN (*Oregon Health Sciences University, Portland, USA*).

**0656** Effects of Interleukin-1 $\beta$  on MMP-1 and MMP-2 Expression in Cultured Human Periodontal Ligament Fibroblasts. E. HASEGAWA\*, M. YAMAUCHI, K. SASAGURI, and S. SATO (*Department of Orthodontics, Kanagawa Dental College, Yokosuka, Japan*).

**0657** Integrins and MMP's Expression in Gingiva and Infected Fibroblasts and Osteoblasts. A.L. BOLCATO-BELLEMIN\*, R. ELKAIM, and H. TENENBAUM (*INSERM U424, Fédération de Recherche Odontologique and PAROGENE, Strasbourg, France*).

**0658** Matrix Metalloproteinases (MMs) in Oral Cancer Squamous Cell Carcinoma. M. BLANSCET\*, D.A. TIPTON, L. HANEY, and M.K. DABBOUS (*Dental Research Center, University of Tennessee, Memphis, USA*).

**0659** Site-specific Expression of MT1-MMP during Ligature-induced Wound Healing. R. ACHONG\*, I. NISHIMURA, T.H. HOWELL, J.P. FIORELLINI, H. RAMACHAUNDRAN, and N. KARIMBUX (*Department of Periodontology, Harvard School of Dental Medicine, Boston, MA; and University of California at Los Angeles, USA*). (1998 AADR Student Fellowship Recipient)

**0660** Effect of Dental Amalgam on Matrix Metalloproteinases. A.P. SOUZA\*, R.F. GERLACH, and S.R.P. LINE (*Dental School of Piracicaba, University of Campinas, São Paulo, Brazil*).

**0661** Protein and mRNA Expression of Matrix Metalloproteinases and Their Inhibitors by Periodontal Fibroblasts. T.M. BROOKS, Jr.\*, M.D. ROBERTS, S. AZNAVOORIAN, and L.J. WINDSOR (*Department of Biochemistry and Molecular Genetics, University of Alabama at Birmingham, USA*).

**0662** Phenytoin and Cyclosporin-A Suppress Expression of Matrix-degrading Enzyme *in vitro*. H. YAMADA, F. NISHIMURA\*, K. NARUISHI, S. TAKASHIBA, and Y. MURAYAMA (*Department of Periodontology and Endodontology, Okayama University Dental School, Japan*).

**0663** Altered Cytokine Secretion by *Fusobacterium nucleatum* Membrane Component. J.P. BABU\* and L. TRENTHAM (*College of Dentistry, University of Tennessee, Memphis, USA*).

**0664** Immunohistochemical Localization of IL-8 and ICAM-1 in Normal and Inflamed Human Gingival Epithelium. G.T.-J. HUANG\* and X. ZHANG (*UCLA School of Dentistry and Dental Research Institute, Los Angeles, CA, USA*).

**0665** Triclosan and Oral Health. M.S. BRANDON\*, K.M. PABST, M.J. PABST, J.P. BABU, L. HANEY, D.A. TIPTON, and M.K. DABBOUS (*Dental Research Center, University of Tennessee, Memphis, USA*).

**0666** Lipopolysaccharide Activation of Mononuclear Phagocyte Cytokine Production. D.G. PHAM\* and F.A. ROBERTS (*University of Washington, Seattle, USA*).

**0667** Cytokine Production of EOP Women with Normal Cycle and Contraception. B. SIGUSCH\*, S. EICK, W. PFISTER, G. KLINGER, and E. GLOCKMANN (*Departments of Periodontology and Microbiology, University of Jena, Germany*).

**Seq#: 77 Thursday, March 11, 11:00 am - 12:15 pm  
Poster Session, Exhibit Hall B&C**

**Periodontal Research – Therapy - GTR, GBR: *in vitro* Studies**

**0668** Migration of Osteoblastic Cells on Various GTR/GBR Membranes. T. TAKATA\*, H.-L. WANG, M. MIYAUCHI, and H. ITO (*Hiroshima University School of Dentistry, Japan; and School of Dentistry, University of Michigan, Ann Arbor, USA*).

**0669** Culture of Fibroblasts on Biodegradable Regenerative Materials *in vitro*. F. SIMAIN-SATO, J. LAHMOUZI, G.K. KALYKAKIS\*, E. HEINEN, M.C. DEPAUW, and R. LEGRAND (Department of Periodontology, Oral Implantology, CHU, University of Liège, Belgium).

**0670** Identification of Osteoclast Inhibitory Factor(s) in Medium from Regenerative Cells. D.J. ROWE\*, S. KO, X.T. TOM, and P.W. JOHNSON (Departments of Dental Public Health & Hygiene and Stomatology, University of California, San Francisco, USA).

**0671** Increased TGF- $\beta$  Production in PDL Cells Grown on EMDOGAIN® Matrix. S.P. LYGSTADAAS\*, H. EKDAHL, E. LUNDBERG, C. ANDERSSON, and S. GESTRELIUS (Biora AB, Malmö, Sweden).

**0672** Effects of Basic Fibroblast Growth Factor on Gingival Epithelial Cells. S. TAKAYAMA\*, S. MURAKAMI, A. TERASHIMA, T. ASANO, and H. OKADA (Department of Periodontology and Endodontology, Osaka University Faculty of Dentistry, Osaka; and Central Research Laboratory, Kaken Pharmaceutical Company, Kyoto, Japan).

**0673** Establishment of Osteoblastic Clonal Cell Lines from Periodontal Ligament. K. IKEZAWA\*, S. TASAKA, S. TAKAYAMA, H. HIGUCHI, H. HIRANO, F. HIRANO, S. MURAKAMI, and H. OKADA (Department of Periodontology, Osaka University Faculty of Dentistry, Japan).

**0674** Purification and Partial Characterization of Bovine-cementum-derived Chemotactic Factor: Its Effect on Human Gingival Fibroblasts. K. NISHIMURA\*, K. TAKATA, H. IMAI, and M. MUNEKATA (Osaka Dental University and Hokkaido University, Japan).

**0675** Prostaglandin E<sub>2</sub> Effects on F-actin and Myosin in Fibroblasts. J. ASHBY\*, B. SAFIEJKO-MROCZKA, P. BELL, and J. DMYTRYK (University of Oklahoma, Oklahoma City, USA).

**0676** Hyaluronan Synthase mRNA Expression in Periodontal Tissues. H.R. HAASE and P.M. BARTOLD\* (School of Dentistry, University of Queensland, Brisbane, Australia).

**0677** Permeability of and Cell Adherence to Resorbable Membranes. P.A. O'NEILL\*, G.K. BRADSHAW, and R.G. CAFFESSE (Dental Branch, University of Texas at Houston, USA).

**0678** Comparative Particle Size Measurements of Synthetic Bone Graft Materials. H. NGUYEN, K. MARKOWITZ\*, and J. LEE (Research and Technology Laboratories, Block Drug Company, Inc., Jersey City, NJ, USA).

**Seq#: 78** **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Periodontal Research – Therapy - Mechanical Therapy, Laser**

**0679** Tooth Loss in Periodontal Patients: Surgical vs. Non-surgical Therapy. C.G. SMITH\* and D.C. MATTHEWS (Faculty of Dentistry, Dalhousie University, Halifax, NS, Canada).

**0680** Response to Periodontal Therapy Compared in Three Risk Groups. Part I. W. KALDAHL, K. KALKWARF\*, K. PATIL, and J. DYER (UNMC—Dental, Lincoln, NE; UTHSC, San Antonio, TX; and UNMC—Medical, Omaha, NE, USA).

**0681** Response to Periodontal Therapy Compared in Three Risk Groups. Part II. W. KALDAHL\*, K. PATIL, K. KALKWARF, and J. DYER (UNMC—Dental, Lincoln; UNMC—Medical, Omaha, NE; and UTHSC, San Antonio, TX, USA).

**0682** Effect of Cigarette Smoking on Periodontal Healing following Flap Debridement Surgery. A. SCABBIA\*, K.-S. CHO, C.-K. KIM, T.J. SIGURDSSON, and L. TROMBELLI (University of Ferrara, Italy; Yonsei University, Korea; and Loma Linda University, CA, USA).

**0683** Clinical and Microbiological Response to Mechanical Periodontal Treatment in Chinese Adult Periodontitis Patients. D.H. LEE\*, K.Y. ZEE, and L.P. SAMARANAYAKE (Faculty of Dentistry, University of Hong Kong).

**0684** Effect of SRP on Relation of GCF IL-8 and Granulocyte Elastase to Periodontopathogens. L.J. JIN\*, W.K. LEUNG, E.F. CORBET, L.P. SAMARANAYAKE, W.I.R. DAVIES, B. SÖDER, and P.-Ö. SÖDER (University of Hong Kong; and Karolinska Institutet, Sweden).

**0685** Periodontal Scaling: Effect on CD4+ T Lymphocytes of HIV+/AIDS Patients. P.R. CAMPBELL\*, C.C. LOIACONO, D.W. SPENCER, and J.P. DEWALD (Baylor College of Dentistry, Dallas, TX, USA).

**0686** Influence of Calculus Removal on the Treatment of Adult Periodontitis. R.V. OPPERMAN\* and G. BERND (Department of Periodontology, ULBRA, Porto Alegre, Brazil).

**0687** Furcation Debridement with a New Diamond-coated Sonic Scaler. G. AUPLISH\*, I.G. NEEDLEMAN, D.R. MOLES, and H.N. NEWMAN (Eastman Dental Institute, London, UK).

**0688** Root Surface Removal after Subgingival Preparation with Four Different Instruments. C. ROBINSON\*, M.E. AICHELMANN-REIDY, and R.A. YUKNA (Louisiana State University School of Dentistry, New Orleans, USA).

**0689** Comparison of Six Root Planing Methods with a Curette. P. SCHMAGE\*, I. NERGIZ, and U. PLATZER (Dental School, University of Hamburg, Germany).

**0690** Raman Spectroscopic Analysis of Bone Ablated with Free Electron Laser. P. SPENCER, M. BROWN\*, J.R. SWAFFORD, C.M. COBB, G.M. PEAVY, L. REINISCH, and D.M. WIELICZKA (University of Missouri—Kansas City School of Dentistry; Beckman Laser Institute; and Vanderbilt University, Nashville, TN, USA).

**0691** Histologic Effects of Laser Incision and Gingival Curettage. T.I. SWENSON\*, B.P. ROUSE, J.S. PARK, K.T. TRAN, and J.M. WHITE (University of California, San Francisco, USA).

**Seq#: 79** **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Pharmacology, Therapeutics, & Toxicology - Analgesics and Anti-inflammatory Agents**

**0692** NSAIDs Reduce PGE<sub>2</sub> in the Extracellular Fluid of Solid Tumors. W.-C. FOONG\*, T. BOWES, and J. BLAY (Departments of Applied Oral Sciences and Pharmacology, Dalhousie University, Halifax, Nova Scotia, Canada).

**0693** CMT-3, a Non-antimicrobial Tetracycline (TC), Increases the Production of IL-10 in Macrophages. H.M. LEE\*, S. MOAK, R. GREENWALD, S. SIMON, C. RITCHLIN, and L.M. GOLUB (State University of New York, Stony Brook; Long Island Jewish Hospital, NY; and University of Rochester, NY, USA).

**0694** Tenidap Modulates pHi in Human Gingival Fibroblasts. I. NOJI\*, H. MATSUMOTO, Y. AKIMOTO, and A. FUJII (Nihon University School of Dentistry at Matsudo, Chiba, Japan).

**0695** The Development of a Mouse Ear Model for Chronic Inflammation. A. LOHACHITRANONT\* and J.D. WATERFIELD (*Faculty of Dentistry, UBC, Vancouver, Canada*).

**0696** Effect of Topical Nimesulide Mouthwash in the Treatment of Oral Lichen Planus. A. MAJORANA\*, A.M. MANGANONI, F. FACCHETTI, A. SCALA, and P.L. SAPELLI (*School of Dentistry, Department of Dermatology, and Department of Pathology, University of Brescia, Italy*).

**Seq#: 80** **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Neuroscience/TMJ - Muscle: EMG, Forces, and Biomechanics**

**0697** Forces Resisting Jaw Displacement in Relaxed Subjects. A.S. SOOCH\*, C.C. PECK, and A.G. HANNAM (*Department of Oral Health Sciences, University of British Columbia, Vancouver, Canada*).

**0698** Simulation of Damping Properties in Human Jaw Muscles at Maximum Gape. C.C. PECK\*, A.S. SOOCH, G.E.J. LANGENBACH, and A.G. HANNAM (*Department of Oral Health Sciences, University of British Columbia, Vancouver, Canada*).

**0699** Bite-point-related Recruitment and Coactivation Patterns of Jaw Elevator Muscles. R. MEDINA\*, Y. TSUCHIDA, and S. KOHNO (*Department of Removable Prosthodontics, School of Dentistry, Niigata University, Japan*).

**0700** Contamination of EMG Signals by Distant Muscles: Cross-talk between Jaw-closing and Facial Muscles. B.M. HORRELL, W.D. MCCALL, Jr.\*, M. KURIAKOSE, B. RAMOS, N. MUSA, and R. OHRBACH (*SUNY Buffalo, NY, USA*).

**0701** Within-subject Variation of Temporalis EMG during Subsequent Clenching Efforts. F. LOBBEZOO\*, J.J.R. HUDDLESTON SLATER, and M. NAEIJE (*Department of Oral Function, Academic Centre for Dentistry, Amsterdam, The Netherlands*).

**0702** Change in the Frequency Component of EMG Power Spectra during Clenching. H. SHIGA\*, Y. KOBAYASHI, and A. TANAKA (*The Nippon Dental University, Tokyo, Japan*).

**0703** Chewing Side Preference Associated with Mandibular Chewing Velocity. C.Z. WU, C.-M. LIU\*, M.-C. HUANG, and S.-L. CHOU (*School of Dentistry, Taipei Medical College, Taiwan*).

**0704** Post-stimulus EMG Complex and Clinical Oral Conditions in Cerebral Palsy. P.M. ALFARO\*, H.G. GONZALEZ, J.R. SANCHEZ, A. NUÑO-LICONA, F.M. ANGELES, J.R. GARCIA, A. GALICIA, and C. OSORNO (*Universidad Autónoma Metropolitana-Xochimilco, Fac. De Ciencias and Fac. De Odontología, Universidad Nacional Autónoma de México*).

**0705** Effect of Biting Force on the Activation of the Brain in fMRI. S. BABA\*, M. FUKUNAGA, C. TANAKA, T. EBISU, and N. HORI (*Kyoto Prefectural University Med., Meiji University Orient. Med., Japan*).

**0706** Effect of Decreased Vertical Occlusion on Mandibular Condyle of Senescence-accelerated MouseP8. A. ARAKI\*, T. YOKOYAMA, H. MURAKAMI, Y. ITO, H. MAEDA, and Y. KAMEYAMA (*School of Dentistry, Aichi-Gakuin University, Nagoya, Japan*).

**0707** Dental Attrition and Its Association with TMJ Morphology and Pathology. K.J. KOHRS\*, T.R. JASINEVICIUS, M.A. PYLE, J.A. LALUMANDIER, and D.R. SAWYER (*Case*

*Western Reserve University School of Dentistry, Cleveland, OH, USA*).

**Seq#: 81** **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Experimental Pathology - Oral Mucosal Biology**

**0708** Stereologic Analysis and Histochemical Characterization of the Collagen Expression of Cyclosporin (Cs)-induced Gingival Overgrowth in Rats. L.C. SPOLIDORIO\*, D.M.P. SPOLIDORIO, M.R.B. OLIVEIRA, C. BENATTI NETO, C.A.S. COSTA, and O.P. ALMEIDA (*UNESP, Araraquara; and UNICAMP, Campinas, SP, Brazil*).

**0709** Tissue Specificity of Lymphocyte Migration into Gingival Tissue. B. AU\*, C.A.G. McCULLOCH, and J.B. HAY (*Faculty of Dentistry and Department of Immunology, University of Toronto, Ontario, Canada*).

**0710** Cyclosporin-A Inhibits Expression and Activity of Gingival Fibroblast Matrix Metalloproteinases. G. BOLZANI, R.D. COLETTA, C.W. YORIOKA, O.P. ALMEIDA, and E. GRANER\* (*FOP—University of Campinas, São Paulo, Brazil*).

**0711** Organotypic Culture Model to Study Epithelial Cell Differentiation and Function *in vitro*. H.C. HILDEBRAND\*, L. HÄKKINEN, C. WIEBE, and H. LARJAVA (*Department of Oral Biological and Medical Sciences, Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).

**0712** Response of Human Oral Epithelial Cells to H<sub>2</sub>O<sub>2</sub> in the Presence of Vitamin E. G.A. ROYACK\*, M.P. NGUYEN, D.C. TONG, and D. ODA (*University of Washington, Seattle, USA*).

**0713** Oxidative Damage and Vitamin C in Cultured Oral Epithelial Cells. M.P. NGUYEN\*, G.A. ROYACK, D.C. TONG, and D. ODA (*University of Washington, Seattle, USA*).

**0714** N-Butyldeoxygalactonojirimycin Inhibits Glycolipid and Ceramide Synthesis and Permeability Barrier Formation. J. GARZA\*, K.C. MADISON, G.N. SANDO, and P.W. WERTZ (*Dows Institute for Dental Research, University of Iowa, Iowa City, USA*).

**0715** Quantitative Morphology of the Intercellular Spaces of Superficial Buccal Epithelium. R. GUO\*, D.C. SWARTZENDRUBER, C.A. SQUIER, and P.W. WERTZ (*Dows Institute for Dental Research, College of Dentistry, University of Iowa, Iowa City, USA*).

**0716** Effects of Potential Permeability Enhancers on Buccal Epithelial Integrity. M. AHMAD\*, A.J. HOOGSTRAATE, C.A. SQUIER, and P.W. WERTZ (*Dows Institute, University of Iowa, Iowa City, USA*).

**0717** Role of Mucin Glycoproteins in the Permeability of Oral Mucosa. J.B. ZANTUA\*, M.J. KREMER, J.E. LAFFOON, C.A. SQUIER, and P.W. WERTZ (*Dows Institute for Dental Research, University of Iowa, Iowa City, USA*).

**0718** Oral Mucosal Drug Delivery: Chitosan as Vehicle and Permeabilizer. M.J. KREMER\*, S. SENEL, S.H. KAS, P.W. WERTZ, A.A. HINCAL, and C.A. SQUIER (*Dows Institute for Dental Research, University of Iowa, Iowa City, USA; and Faculty of Pharmacy, Department of Pharmaceutical Technology, Hacettepe University, Ankara, Turkey*).

**0719** b-Glucocerebrosidase in Lamellar Granules. D. GILBERT\*, K.C. MADISON, G.N. SANDO, C.A. SQUIER, and P.W. WERTZ (*Dows Institute for Dental Research, College of Dentistry, University of Iowa, Iowa City, USA*).

**0720** Psoriatic Keratinocytes Sustain Angiogenesis by Prolonging Endothelial Cell Survival. J. PEITZKE\*, R. MITRA, and P.J. POLVERINI (*School of Dentistry, University of Michigan, Ann Arbor, USA*).

**0721** Tissue Factor Expression in Endothelial Cells during Heat Shock. D.L. BASI\*, K.F. ROSS, and M.C. HERZBERG (*School of Dentistry, University of Minnesota, Minneapolis, USA*).

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**Seq#: 82**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Craniofacial Biology - Effects of Orthodontic and Surgical Treatment**

**0722** Comparing Quality of Orthodontic Extraction Treatment in Class I/II Malocclusions. L. EVALT\*, B.H. JOO, S. SHANKER, J. FRANKMANN, J.G. SABOL, M. BECK, and K. VIG (*Ohio State University, Columbus, USA*).

**0723** Extraction vs. Non-extraction Treatment Outcome in Class I/Class II Malocclusions. J. FRANKMANN\*, B.H. JOO, C. CHOI, L. EVALT, M. BECK, S. SHANKER, and K. VIG (*Ohio State University, Columbus, USA*).

**0724** Comparison of Treatment Outcomes in "Borderline" Extraction and Non-extraction Class I Patients. E.L. YEPEZ, D.M. KILLIANY, D.J. FERGUSON, and T.E. HERREMANS\* (*Center for Advancement of Dental Education, St. Louis University, MO, USA*).

**0725** Post-treatment Evaluation of "Borderline" Anterior Open Bites Treated with and without Surgery. J. WAZIO, P.G. SOTIROPOULOS, D.M. KILLIANY, D.J. FERGUSON, and S.S. HAJJI\* (*Center for Advancement of Dental Education, St. Louis University, MO, USA*).

**0726** Success of Surgical Correction of Class II Malocclusion in Adolescent Patients. R. ALLEN\*, C. TULLOCH, and C.L. PHILLIPS (*University of North Carolina, Chapel Hill, USA*).

**0727** Effect of Reproximation on Post-treatment Mandibular Incisor Alignment. S.J. SHERRICK, F.J. SOBKOWSKI, P.G. SOTIROPOULOS, D.J. FERGUSON, and R.W. GOODMAN\* (*Center for Advancement of Dental Education, St. Louis University, MO, USA*).

**0728** Relapse of Orthodontically Treated Class II Subdivision Malocclusions. B.A. RISINGER, F.J. SOBKOWSKI, P.G. SOTIROPOULOS, D.J. FERGUSON, and C.L. HELD\* (*Center for Advancement of Dental Education, St. Louis University, MO, USA*).

**0729** Comparison of Vertical Dimension Changes in Extraction and Non-extraction Cases. Y. CHO, P.G. SOTIROPOULOS, D.J. FERGUSON, and J.G. PARKER\* (*Center for Advancement of Dental Education, St. Louis University, MO, USA*).

**0730** Vertical Control of High-angle Patients with a Modified Transpalatal Arch. M. DEBERARDINIS, R.S. NANDA\*, P.K. SINHA, and T. STRETESKY (*Department of Orthodontics, College of Dentistry, University of Oklahoma, Oklahoma City, USA*).

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**Seq#: 83**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Craniofacial Biology - Referral and Treatment Needs**

**0731** Preventive and Interceptive Orthodontic Needs in a School Population. N. KARAIKOS\*, W.A. WILTSHIRE, O.

ODLUM, and K.M. FRIESEN (*University of Manitoba, Winnipeg, Canada*).

**0732** Utilization of Orthodontic Services in Cuyahoga County, Ohio. M. HANS\*, S. NELSON, V. ARMOGAN, N. LE, and Y. ABEI (*Craniofacial Research Group, Case Western Reserve University, Cleveland, OH, USA*).

**0733** Anterior Crossbite Malocclusion: Incidence and Treatment in the Transitional Dentition. J. HOUSLEY\* and F. CURRIER (*College of Dentistry, University of Oklahoma, Oklahoma City, USA*).

**0734** Criteria for Premolar Extraction in Orthodontics. R. NOWLIN\* and F. CURRIER (*University of Oklahoma, Oklahoma City, USA*).

**0735** Considerations in Determining Orthodontic Readiness for Surgery. T. GILLILLAND\*, M. WIEBER, C.L. HURST, J.P. HATCH, and J.D. RUGH (*University of Texas Health Science Center at San Antonio, USA; and University of Würzburg, Germany*).

**0736** Assessment of Orthodontic Readiness for Orthognathic Surgery. C.L. HURST\*, J.P. HATCH, M. WIEBER, B.H. BRITTON, R.H. BIGGERSTAFF, and J.D. RUGH (*University of Texas Health Science Center at San Antonio, USA*).

**0737** An Evaluation of Changes to the Referral Base of One Orthodontic Specialist. E. TROHATOS\*, C.L.B. LAVELLE, A. McNICOL, W.A. WILTSHIRE, and A.B. BAKER (*University of Manitoba, Winnipeg, Canada*).

**0738** Pre-treatment Characteristics of a Pre-doctoral Orthodontic Patient Sample. R. SHEYKOLESLAM\*, J. MAPLE, J.G. SABOL, M. BECK, B.H. JOO, S. SHANKER, and K. VIG (*Ohio State University, Columbus, USA*).

**0739** Patient and Treatment Characteristics of a Pre-doctoral Orthodontic Sample. J. MAPLE\*, S. SHANKER, B.H. JOO, M. BECK, J.G. SABOL, R. SHEYKOLESLAM, and K. VIG (*Ohio State University, Columbus, USA*).

**0740** The Influence of Practitioner and Patient Gender on Orthodontic Practice. M.R. ORFUS, P.G. SOTIROPOULOS, D.J. FERGUSON, and R.A. SHAPIRO\* (*Center for Advancement of Dental Education, St. Louis University, MO, USA*).

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**Seq#: 84**      **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Craniofacial Biology - Orthodontic Treatment Outcomes**

**0741** Efficacy of Three Analgesics in Reducing Discomfort during the Initial Treatment of Orthodontic Patients. G.Y. OGATA, D.M. KILLIANY, D.J. FERGUSON, and H.B. STARNES\* (*Center for Advancement of Dental Education, St. Louis University, MO, USA*).

**0742** Effect of 0.12% Chlorhexidine on *Streptococcus mutans* during Orthodontic Treatment. H. ANDERSEN\*, R.D. SHEATS, K. SPILLANE, and R.J. ISAACSON (*Virginia Commonwealth University, Richmond; and Mayo Clinic, Rochester, MN, USA*).

**0743** Associations among Subjective Assessments of Treatment Outcome by Experienced Orthodontists. S. BAUMRIND\*, J. YANG, L. WANG, and H. PEARSON (*University of Medicine and Dentistry of New Jersey, Newark; and University of the Pacific, San Francisco, CA, USA*).

**0744** Evaluation of Orthodontic Outcome: An Orthodontist's Clinical Assessment vs. PAR. J.G. SABOL\*, B.H. JOO, S. SHANKER, M. BECK, J. MAPLE, R. SHEYKOLESLAM, and K. VIG (*Ohio State University, Columbus, USA*).



**0745** Factors Related to Length of Orthodontic Treatment in Orthognathic Surgery. M. WIEBER\*, J.P. HATCH, B.A. SCOTT, S.M. RIVERA, and J.D. RUGH (*University of Texas Health Science Center at San Antonio, USA; and University of Würzburg, Germany*).

**0746** Factors Affecting Treatment Duration and Percent Reduction in PAR Score. Y. ABEI\*, S. NELSON, R. FEGHALI, and M. HANS (*Craniofacial Research Group, Case Western Reserve University, Cleveland, OH, USA*).

**0747** Outcomes Assessment of One- and Two-phase Orthodontic Treatment. C. KATZAN, S. NELSON, M. CHANG\*, G. WOLF, and M. HANS (*Craniofacial Research Group, Case Western Reserve University, Cleveland, OH, USA*).

**0748** IOTN Score Changes after Phase I Orthodontic Treatment. D.T. ALLEN, R.D. SHEATS\*, T.A. GUENTHNER, and C.R. KENWORTHY (*Marquette University, Milwaukee, WI; and Mayo Clinic, Rochester, MN, USA*).

**0749** Benefits of Early Orthopedic Treatment of Class III Malocclusion. P. NGAN\* and C. YIU (*West Virginia University, Morgantown, USA; and University of Hong Kong*).

**0750** Comparison of Two Maxillary Molar Distalization Techniques in Orthodontic Practice. P.K. SINHA\*, C.D. BRICKMAN, and R.S. NANDA (*Department of Orthodontics, University of Oklahoma, Oklahoma City, USA*).

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**Seq#: 85** **Thursday, March 11, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Craniofacial Biology - Dentofacial Morphology and Airway Considerations**

**0751** Influence of Perennial Allergic Rhinitis on Dentofacial Morphology. F.C. FREITAS\*, E.S. BASTOS, L. PRIMO, D.B. SILVA, V.L. FREITAS, and V.L.T. AYRES (*Pediatric Dentistry Department, Federal University of Rio de Janeiro, Brazil*).

**0752** Three-year Longitudinal Evaluation of Respiratory Mode and Facial Growth. S. SHANKER\*, E. ALLGAIR, M. BECK, K. VIG, and P.S. VIG (*Ohio State University, Columbus, USA*).

**0753** Prepubertal Changes in Nasal Resistance. U. CROUSE\*, M.T. LAINE-ALAVA, and D.W. WARREN (*Department of Physiology and Orthodontics Graduate Program, University of Kentucky, Lexington; and UNC Craniofacial Center, University of North Carolina, Chapel Hill, USA*).

**0754** Do Head and Body Positions Influence Upper-airway Space? R. OHTSUKA, T. ONO\*, T. KURODA, E. HONDA, and T. SASAKI (*Second Department of Orthodontics and Department of Dental Radiology, Tokyo Medical and Dental University, Japan*).

**0755** Airway Dimensions and Tongue Muscle Activity Changes with Oral Appliances. Y.C. PARK\*, J.S. LEE, T.K. KIM, A. LOWE, and Y. LIU (*Faculty of Dentistry, Yon Sei University, Seoul, Korea; Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).

**THURSDAY (Afternoon)**

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**Seq#: 86** **Thursday, 1:45 pm – 3:45 pm**  
**Symposium, Room 1**

**Salivary Research, Experimental Pathology, and Microbiology/Immunology Groups - Pathogenesis of Sjögren's Syndrome**

**Chairpersons: I. Al-Hashimi and P.C. Fox**

**0756** 1:45 Opening Comments.  
1:50 Immune Response in Sjögren's Syndrome. M. REICHLIN (*University of Oklahoma, Oklahoma City, USA*).  
2:15 Apoptosis and Beyond. M. HUMPHREYS-BEHER (*University of Florida, Gainesville, USA*).  
2:40 Lymphoepithelial Lesions and Lymphoma. P.M. SPEIGHT (*Eastman Dental Institute, London, UK*).  
3:05 Immune Modulators as Potential Treatments in Sjögren's Syndrome. P.C. FOX (*NIDCR/NIH, Bethesda, MD, USA*).  
3:30 Discussion.

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**Seq#: 87** **Thursday, 1:45 pm – 3:45 pm**  
**Symposium, Room 3**

**Craniofacial Biology and Mineralized Tissue Groups - The Molecular Mechanisms Underlying Normal and Abnormal Craniofacial Development**

**Chairpersons: J. Helms and D. Young**

**0757** 1:45 Opening Comments.  
1:50 Are Two Heads Better Than One? D. NODEN (*Cornell University, Ithaca, NY, USA*).  
2:15 Holoprosencephaly as a Model to Study Normal and Abnormal Brain Development. M. MUENKE (*NIDCR/NIH, Bethesda, MD, USA*).  
2:40 Signals from the Forebrain Affect Morphogenesis of the Frontonasal Process. R. SCHNEIDER (*University of California, San Francisco, USA*).  
3:00 Molecular Control of Tooth Patterning. P. SHARPE (*Guy's Hospital, London, UK*).  
3:25 A Novel Role of CBFA in Tooth Morphogenesis. R. D'SOUZA (*University of Texas, Houston, USA*).

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**Seq#: 88** **Thursday, 1:45 pm – 3:45 pm**  
**Symposium, Ballroom A**

**Implantology Research Group - Growth Factors and Dental Implants**

**Chairpersons: D. Gerard and D. Kohn**

**0758** 1:45 Opening Comments.  
1:55 Growth Factors and Dental Implants. D. GERARD (*University of Tennessee, Knoxville, USA*).  
2:20 Effects of Growth Factors on Bone Cells in Culture. W. WHITSON (*Southern Illinois University, Alton, USA*).  
2:45 Effects of Various Growth Factors on Bony Defects. J. HOLLINGER (*Oregon Health Sciences University, Portland, USA*).  
3:05 Clinical Trials on Growth Factors and Implants. S. LYNCH (*OsteoHealth Company, Shirley, NY, USA*).  
3:30 Discussion.

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**Seq#: 89** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Room 15**

**Behavioral Sciences & Health Services Research - Quality of Life****Chairpersons: D. Locker and C. McGrath**

**0759** 1:45 Methodological Issues in Developing Oral-health-related Quality of Life Measures for Children. D. LOCKER\* and A. JOKOVIC (*Faculty of Dentistry, University of Toronto, ON, Canada*).

**0760** 2:00 Measuring the Oral Health Impact on Quality of Life. A. DOURADO\*, A. LEÃO, M. DE DEUS, M. CHAVES, T. CHIANCA, and R.B.C. VIANNA (*Rede CEDROS WHO Collaborating Center, F.O.-UFRJ, Brazil*).

**0761** 2:15 Multiple-study Evaluation of Quality of Life Outcomes from Dental Care. G.D. SLADE\*, N.R. KRESSIN, D. LOCKER, and R.P. STRAUSS (*University of North Carolina, Chapel Hill; Veterans Administration Medical Center, Bedford, USA; and University of Toronto, ON, Canada*).

**0762** 2:30 A Method to Assess Quality of Life Components. A. LEÃO\*, A. SHEIHAM, and L. KUBRUSLY (*UCL, London, UK; and UFRJ, Rio de Janeiro, Brazil*).

**0763** 2:45 Self-reported Dental Attendance, Oral Health, and Quality of Life. C. McGRATH\*, N.M. ISMAIL, and R. BEDI (*Eastman Dental Institute, London, UK*).

**0764** 3:00 Predictors of Chewing Difficulty Onset and Recovery among Dentate Adults: 24 Months of the Florida Dental Care Study. C.W. PEEK, G.H. GILBERT\*, R.P. DUNCAN, and U. FOERSTER (*CROHA, University of Florida, Gainesville, USA*).

**0765** 3:15 Periodontal Regenerative Therapy and Patients: Who Likes What and Why? C. FRANCIS\*, M. INGLEHART, and R.L. MACNEIL (*School of Dentistry, University of Michigan, Ann Arbor, USA*).

**0766** 3:30 Reliability and Validity of the Dental Indifference Scale in a Population of 18-year-old Norwegian Adolescents. E. SKARET, M. RAADAL\*, G. KVALE, and E. BERG (*Center for Odontophobia, University of Bergen, Norway*).

**Seq#: 90** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Room 18**

**Cariology Research - Plaque Formation, Biochemistry****Chairpersons: A. Vacca-Smith and K. Toumba**

**0767** 1:45 Effects of Antibodies on Glucosyltransferases in Solution and on a Surface. D.E. WUNDER\* and W.H. BOWEN (*Center for Oral Biology, University of Rochester, NY, USA*).

**0768** 2:00 Studies Concerning the Glucosyltransferase of *Streptococcus sanguis*. A.M. VACCA SMITH\*, L. NG-EVANS, D.E. WUNDER, and W.H. BOWEN (*Center for Oral Biology, University of Rochester, NY, USA*).

**0769** 2:15 Fluoride Chewing Gum in an Intra-oral Caries Model. K. SJÖGREN\*, P. LINGSTRÖM, J. RUBEN, and D. BIRKHED (*Göteborg University, Sweden; and University of Groningen, The Netherlands*).

**0770** 2:30 Urea-containing Chewing Gum in Caries Prevention. P. LINGSTRÖM\*, K. SJÖGREN, J. RUBEN, and D. BIRKHED (*Göteborg University, Sweden; and University of Groningen, The Netherlands*).

**0771** 2:45 *In vivo* Plaque pH Responses of Three New Soft Drinks. K.J. TOUMBA\* and M.S. DUGGAL (*Department of Paediatric Dentistry, Leeds Dental Institute, UK*).

**0772** 3:00 Carbonate Content of Plaque Fluids from Caries-free and Caries-active Subjects. Y. FAN\* and H.C. MARGOLIS (*Forsyth Dental Center, Boston, MA, USA*).

**0773** 3:15 Sucrose Diffusion in Dental Plaques from Caries-free and Caries-active Subjects. H.C. MARGOLIS\*, J.J. DAVIS, C. DEMARTINO, and J. VAN HOUTE (*Forsyth Dental Center, Boston, MA, USA*).

**0774** 3:30 Labile Fluoride and Other Ions in Plaque after Experimental F Rinses. G.L. VOGEL\*, Z. ZHANG, L.C. CHOW, and G.E. SCHUMACHER (*American Dental Association Health Foundation-Paffenbarger Research Center, National Institute of Standards and Technology, Gaithersburg, MD; and Warner-Lambert, Morris Plains, NJ, USA*).

**Seq#: 91** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Room 12**

**Craniofacial Biology - Orthodontic Treatment and Root Resorption****Chairpersons: D. Killiany and E. Harris**

**0775** 1:45 Gene Expression Induced by Orthodontic Forces and Root Resorption. E. GRAGEDA\*, P. BRINGAS, Jr., J. REYNA, F. YACAMAN-VIDJAK, P. SINCLAIR, and M. ZEICHNER-DAVID (*USC School of Dentistry, Los Angeles, CA, USA*).

**0776** 2:00 Apical Root Resorption: A Comparison of Wire Materials. B.A. CHEKAY, D.M. KILLIANY\*, M.V. PURCELL, and R.A. FROST (*Center for Advancement of Dental Education, St. Louis University, MO, USA*).

**0777** 2:15 Comparison of Apical Root Shortening in Class II Division 1 Malocclusion: Extraction vs. Non-extraction. P. MUDDASANI, D.M. KILLIANY, D.J. FERGUSON, and R. GRANT\* (*Center for Advancement of Dental Education, St. Louis University, MO, USA*).

**0778** 2:30 Root Changes in Lower Incisors during Full-banded Orthodontic Treatment. G. VAUGHN\*, H. ABARGHOU EI, F. TY, V. VLASKALIC, and S. BAUMRIND (*University of the Pacific, San Francisco, CA, USA*).

**0779** 2:45 Prospective Study of Apical Root Resorption during Orthodontic Treatment. E.F. HARRIS\* and B.W. BOGGAN (*University of Tennessee, Memphis, USA*).

**0780** 3:00 Intercurrent Growth Complicates the Analysis of Apical Resorption in Orthodontically-treated Adolescents. R.L. BOYD\*, S. BAUMRIND, and V. VLASKALIC (*University of the Pacific, San Francisco, CA, USA*).

**0781** 3:15 Upper Incisor Root Growth and Root Resorption Associated with Three Orthodontic Treatment Strategies. R. BOERO\*, R.L. BOYD, K. FENN, L. HARFIELD, V. VLASKALIC, and S. BAUMRIND (*University of the Pacific, San Francisco, CA, USA*).

3:30 Discussion

**Seq#: 92** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Poster Discussion Session, Room 16**

**Craniofacial Biology - Chondrogenesis and Osteogenesis****Chairpersons: T. Underhill and H.-D. Nah**

1:45 Poster Viewing Time

**0782** 2:15 RARa Inhibits Chondroblast Differentiation by Modulating Response to BMP-2. T.M. UNDERHILL\* and A.D.

WESTON (*School of Dentistry, University of Western Ontario, London, Canada*).

**0783** 2:23 Differential Roles of HGF in Osteogenesis and Chondrogenesis in Mouse Mandibles. O. AMANO\* and A. YAMANE (*Department of Anatomy, School of Medicine, Kanazawa University; and Department of Pharmacology, Tsurumi University School of Dental Medicine, Yokohama, Japan*).

**0784** 2:31 Osteoblasts in Intramembranous Osteogenesis Co-express Types I and II Collagens. M. UMEMORI\*, I. TAKAHASHI, Y. SASANO, K. ONODERA, M. KAGAYAMA, and H. MITANI (*Department of Orthodontics, 2nd Department of Oral Anatomy, Tohoku University School of Dentistry, Sendai, Japan*).

**0785** 2:39 The Potential Role of FGF/FGFR Signaling in Calvarial Osteoblast Differentiation. A. FAKHRY, K. McENTEE, and H.-D. NAH\* (*School of Dental Medicine, University of Pennsylvania, Philadelphia, USA*).

**0786** 2:47 Spatial and Temporal Expression of Type IIA Procollagen during Intramembranous Bone Formation. H.-D. PARK\*, C. RATISOONTORN, and H.-D. NAH (*School of Dental Medicine, University of Pennsylvania, Philadelphia, USA*).

**0787** 2:55 Three-dimensional Analysis of Collagen Fiber Architecture Organized by Fibroblasts, *in vitro*. C. SUKOTJO\*, K. EILBER, S. OZAWA, T. OGAWA, and I. NISHIMURA (*The Weintraub Center for Reconstructive Biotechnology, UCLA School of Dentistry, Los Angeles, CA, USA*).

**0788** 3:03 Examining the Role of Cytosine Methylation in *Coprinus cinereus*. S.A. FRAZIER-BOWERS\* and P.J. PUKKILA (*University of North Carolina, Chapel Hill, USA*).

3:11 Poster Discussion Time

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**Seq#: 93** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Room A-5**

**Dental Materials - Machined Ceramics, Zirconia, Roughness, and Color Analysis**

**Chairpersons: R. Kelly and A. Barrett**

**0789** 1:45 Marginal Accuracy of Milled Inlays and Copings. J. TAKESUYE\*, R. POBER, and R. GIORDANO (*Department of Biomaterials, Goldman School of Dental Medicine, Boston University, USA*).

**0790** 2:00 Flexural Strength of Joined-together CAD/CIM-machined In-Ceram Alumina Bars. W. APHOLT\*, A. BINDL, H. LÜTHY, and W. MÖRMANN (*Division of Aesthetic and Computer Restorations, Center for Dental and Oral Medicine, University of Zürich, Switzerland*).

**0791** 2:15 Fatigue Properties of CAD/CAM Molar Crowns. H.Y. CHEN\*, K.-H. KUNZELMANN, and R. HICKEL (*Department of Operative Dentistry, Ludwig-Maximilians-University of Munich, Germany*).

**0792** 2:30 FEA Study of DCM Machined Zirconia vs. Vita-Celay In-Ceram Bridges. F. FILSER\*, M. EGLIN, H. LÜTHY, P. SCHÄRER, and L. GAUCKLER (*Swiss Federal Institute of Technology, Zürich, and University of Zürich, Switzerland*).

**0793** 2:45 Reliability of DCM Machined Zirconia Bridges: Comparison for Different Interdental Connector Areas. H. LÜTHY\*, F. FILSER, L. GAUCKLER, and P. SCHÄRER (*University of Zürich and Swiss Federal Institute of Technology, Zürich, Switzerland*).

**0794** 3:00 Long-term Resin Bond Strength to Zirconia Ceramic. S.M. WEGNER\* and M. KERN (*Department of Prosthodontics, Propaedeutics, and Dental Materials, University of Kiel, Germany*).

**0795** 3:15 Noncontact Micro-roughness in Dental Ceramics Using Laser Speckle Contrast. S.J. KIRKPATRICK\*, J.A. SORENSEN, S.R. DYER, S.P. DAY, and S. VINCENT (*Oregon Health Sciences University, Portland, USA*).

**0796** 3:30 Influence of Tab and Disk Design on Shade Matching of Dental Porcelain. A.A. BARRETT\*, N.J. GRIMAUDO, K.J. ANUSAVICE, and M.C.K. YANG (*Departments of Dental Biomaterials and of Statistics, University of Florida, Gainesville, USA*).

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**Seq#: 94** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Room A-4**

**Dental Materials - Cements: Biological and Clinical Aspects**

**Chairpersons: I. L. Dogon and H. Xu**

**0797** 1:45 Pulp Capping with Two Adhesive Agents with and without Ca[OH]<sub>2</sub>. I.L. DOGON\*, R.L. ERICKSON, and J.M. DOBECK (*Forsyth Dental Center/Harvard School of Dental Medicine, Boston, MA; and 3M Company, Minneapolis, MN, USA*).

**0798** 2:00 Fiber Reinforcement of Calcium Phosphate Cement. H.H.K. XU\*, F.C. EICHMILLER, and P. BARNDT (*Paffenbarger Research Center, American Dental Association Health Foundation at National Institute of Standards and Technology, Gaithersburg, MD, USA*).

**0799** 2:15 Shear Bond Strength and Microleakage of a Ca-PO<sub>4</sub> Resin Cement. S.R. KELLY\* and S.H. DICKENS (*Naval Dental School, National Naval Dental Center, Bethesda; ADA Health Foundation, Paffenbarger Research Center, NIST, Gaithersburg, MD, USA*).

**0800** 2:30 Evaluation of Antimicrobial Properties of Orthodontic Adhesive Combined with Benzalkonium Chloride. H.F. OTHMAN\*, C.D. WU, K. THORNE, and C.A. EVANS (*College of Dentistry, University of Illinois at Chicago, USA*).

**0801** 2:45 Assessment *in vivo* of the Functional Efficacy of an Experimental Root Canal Sealer. S. FRIEDMAN\*, R. KOMOROWSKI, W.A. MAILLET, R. KLIMAITE, H.Q. NGUYEN, and C.D. TORNECK (*Endodontics, Faculty of Dentistry, University of Toronto, ON, Canada*).

**0802** 3:00 Ion Permeability of Various Luting Cements. Y. ODA\*, E. KAWADA, M. YOSHINARI, K. HASEGAWA, and M. HATTORI (*Tokyo Dental College, Japan*).

**0803** 3:15 Clinical Trial Comparing Two Resin Luting Cements. J.B. DENNISON\*, P. YAMAN, and D.J. FASBINDER (*University of Michigan, Ann Arbor, USA*).

**0804** 3:30 Short-term Clinical Study of Two Compomer Cements in Comparison with a Zinc Phosphate Cement. S. KISTLER\*, P. POSPIECH, P. RAMMELSBERG, and W. GERNET (*Department of Prosthodontics, LMU-Munich, Germany*).

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**Seq#: 95** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Room A-3**

**Dental Materials - Strength and Fracture Properties of Composites**

**Chairpersons: J. Drummond and M. Braem**

- 0805** 1:45 Flexural Strength Characterization of Resin Composites by Weibull Analysis. U. LOHBAUER, M. SCHOCH\*, R. FRANKENBERGER, M.J.A. BRAEM, and N. KRÄMER (*University of Erlangen, Germany; and University of Antwerp RUCA, Belgium*).
- 0806** 2:00 Modulus of Elasticity and Fracture Toughness of Composite Materials. D.W. JONES\*, A.S. RIZKALLA, and G.C. HALL (*Division of Biomaterials, Dalhousie University, Halifax, Nova Scotia, Canada*).
- 2:15 Discussion
- 0807** 2:30 Mixed Mode Fracture Toughness Testing of Aged Dental Composites. S.S. SCHERRER\*, J. BOTSIS, M. STUDER, A. WISKOTT, and U.C. BELSER (*Dental School, University of Geneva; and Swiss Federal Institute of Technology, Lausanne, Switzerland*).
- 0808** 2:45 Cyclic Loading of Dental Composites. J.L. DRUMMOND\* (*University of Illinois at Chicago, USA*).
- 0809** 3:00 Influence of Water Sorption on the Flexural Fatigue Limit and Fractographic Analysis of Resin-based Restoratives. M.J.A. BRAEM\*, G. KETELEER, P. LAMBRECHTS, and G. VANHERLE (*University of Antwerp and Catholic University of Leuven, Belgium*).
- 0810** 3:15 Physical Properties of High-density Composite Restorative Materials. W.P. KELSEY\*, M.A. LATTA, and W.W. BARKMEIER (*Creighton University School of Dentistry, Omaha, NE, USA*).
- 0811** 3:30 Fracture Toughness of Direct Tooth-colored Restorative Materials. S.R. ARMSTRONG\*, J. SEOL, and D.B. BOYER (*University of Iowa, Iowa City, USA*).

**Seq#: 96** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Room A-2**

### Dental Materials - Mercury

**Chairpersons: M. Marek and M. Bagby**

- 0812** 1:45 Passivation of Dental Amalgams and the Effect on Mercury Release. L. JOSKA and M. MAREK\* (*Institute of Chemical Technology, Prague, Czech Republic; and Georgia Institute of Technology, Atlanta, USA*).
- 0813** 2:00 Removal of Hg from Dental Wastewater Using Membrane Separation. B.E. REED, R.C. VIADERO, M.D. BAGBY\*, and J.R. WILSON (*School of Dentistry and Department of Civil & Environmental Engineering, West Virginia University, Morgantown, USA*).
- 0814** 2:15 Line Cleanser/Disinfectant Effects on Soluble Mercury Content of Dental Wastewater. M.E. STONE\*, E.D. PEDERSON, R.A. AUXER, and S.L. DAVIS (*The Naval Dental Research Institute, Great Lakes, IL, USA*).
- 0815** 2:30 Effects of Dental Amalgam on Cytokine Production by Peripheral Blood Mononuclear Cells. A. SCHEDULE\*, X.H. RAUSCH-FAN, P. SAMORAPOOMPICHIT, T. LUCAS, W. SPERR, P. VALENT, and G. BOLTZ-NITULESCU (*University of Vienna, Austria*).
- 0816** 2:45 Mercury Release into Flowing Media from Dental Amalgams. B. ELVEBAK\*, L. CARRASCO, M. WOLDU, J.L. FERRACANE, M. NUNN, and T. OKABE (*Baylor College of Dentistry, Texas A&M University System, Dallas; and Oregon Health Sciences University, Portland, USA*).
- 0817** 3:00 Differences in Mercury Vapor Emission from Amalgam by Restoration Design. B.B. MAXSON\*, N.

- KASHANI, and A.L. NEME (*University of Detroit Mercy, MI, USA*).
- 0818** 3:15 Effect of Palladium on Mercury Vapor Release from Dental Amalgam. A.L. NEME\* and W.J. O'BRIEN (*University of Detroit Mercy; and University of Michigan, Ann Arbor, USA*).
- 0819** 3:30 *In vitro* Investigation of Mercury Vapor Release from Three Amalgam Alloys. J.S. HAYDEN\* and A.L. NEME (*University of Detroit Mercy, MI, USA*).

**Seq#: 97** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Room 14**

### Diagnostic Systems - Cancer/Imaging/Vision

**Chairpersons: R. Feldman and A. Wenzel**

- 0820** 1:45 Laser-induced Fluorescence for Detection and Diagnosis of Oral Malignancy. P. WILDER-SMITH\*, L.-H. LIAW, T.B. KRASIEVA, and D.V. MESSADI (*Beckman Laser Institute and Medical Clinic, University of California, Irvine; and University of California, Los Angeles, USA*).
- 0821** 2:00 Characteristics of Symptoms from Squamous Cell Carcinoma. J. GUGGENHEIMER\*, T. ZULLO, and E. MYERS (*Schools of Dental Medicine and Medicine, University of Pittsburgh, PA, USA*).
- 0822** 2:15 Toluidine Blue O as an Oral Cancer Diagnostic Aid. R.S. FELDMAN\*, J.B. EPSTEIN, J.W. MOONEY, T.C. BAINBRIDGE, and L. PARKS (*VAMC, SDM, University of Pennsylvania, Philadelphia; Promedica International, Newport Beach, CA, USA; and British Columbia Cancer Agency and Vancouver Hospital, BC, Canada*).
- 0823** 2:30 Motion Artifact in Intra-oral Dental Optical Coherence Tomography. B.W. COLSTON\*, M.J. EVERETT, U.S. SATHYAM, and L.L. OTIS (*Lawrence Livermore National Laboratory, CA; and School of Dental Medicine, University of Connecticut, Farmington, USA*).
- 0824** 2:45 Comparison of Storage Phosphor and Conventional Radiography for Periodontal Diagnosis. H. VISSER\*, P. LEWANDOWSKI, and W. KRÜGER (*Dental School, University of Göttingen, Germany; and Dental School, University of Poznan, Poland*).
- 0825** 3:00 Dental Students' Natural Stereopsis and the Impact on Depth Localization in Radiographs. A. WENZEL\* (*Department of Oral Radiology, Royal Dental College, University of Aarhus, Denmark*).
- 0826** 3:15 Contrast Resolution: Comparison of a Cephalometric Screen-Film System with a Photostimulable Phosphor Imaging System. R. ODEGAARD, F.J. SOBKOWSKI\*, C.F. HILDEBOLT, and D.J. FERGUSON (*Center for Advancement of Dental Education, St. Louis University, MO, USA*).
- 0827** 3:30 Spatial Resolution Contours for Pantomography Using Storage Phosphor Receptor. T.T. FARMAN\* and A.G. FARMAN (*University of Louisville, KY, USA*).

**Seq#: 98** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Poster Discussion Session, Room 13**

### Experimental Pathology - Oral Cancer

**Chairpersons: P. Van Der Bijl and K.J. Tsang**  
1:45 Poster Viewing Time

**0828** 2:15 Tenascin and Malignancy Transformation of Oral Lichen Planus. N. BURKHART\*, J. BURKES, M. NUNN, and I. AUKHIL (*Baylor College of Dentistry, Dallas, TX; and University of North Carolina, Chapel Hill, USA*).

**0829** 2:23 Expression Patterns of Beta-defensin in Oral Squamous Cell Carcinoma. Y. ABIKO\*, J. MITAMURA, M. NISHIMURA, T. MURAMATSU, T. INOUE, M. SHIMONO, and T. KAKU (*Oral Pathology, Health Sciences University of Hokkaido; and Pathology, Tokyo Dental College, Japan*).

**0830** 2:31 Beta-defensins Produced by Human Salivary Glands. D. DEVINE\*, A. HIGH, P. OWEN, and W. BONASS (*Leeds Dental Institute, UK*).

**0831** 2:39 Tobacco Extract Treatment of Keratinocytes Reduces HLA Class I Expression. C.D. HAN and J.A. McCUTCHEON\* (*New York University, New York City, USA*).

**0832** 2:47 Synergistic ICAM-1 Induction by Cisplatin and 5-fluorouracil in Cancer Cells. K. TAKIZAWA\*, R. KAMIJO, K. SUMITANI, and M. NAGUMO (*Showa University, Tokyo, Japan*).

**0833** 2:55 Permeation of Benzo[a]pyrene through Human Vaginal and Buccal Mucosa. P. van der BIJL\* and A.D. VAN EYK (*Oral and Dental Research Institute, Faculty of Dentistry, University of Stellenbosch, Tygerberg, South Africa*).

3:03 Poster Discussion Time

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**Seq#: 99** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Ballroom B**

**Implantology - Biomechanics of Load Transfer & Prosthesis Design**

**Chairpersons: I. Naert and A. Caputo**

**0834** 1:45 Forces on Oral Implants Supporting a Fixed Full Prosthesis during Clenching. An *in vivo* Study. J. DUYCK, H. VAN OOSTERWYCK, J. VANDER SLOTEN, M. DE COOMAN, B. PUERS, and I. NAERT\* (*Department of Prosthetic Dentistry, BIOMAT Research Group, Division of Biomechanics and Engineering Design, ESAT-MICAS; and K.U., Leuven, Belgium*).

**0835** 2:00 *In vivo* Forces on Oral Implants Supporting Mandibular Overdentures: Influence of Anchorage Device. J. DUYCK\*, H. VAN OOSTERWYCK, J. VANDER SLOTEN, M. DE COOMAN, B. PUERS, and I. NAERT (*Department of Prosthetic Dentistry, BIOMAT Research Group, Division of Biomechanics and Engineering Design, ESAT-MICAS; and K.U., Leuven, Belgium*).

**0836** 2:15 Force Transmission by Attachment Clips in Implant-stabilized Mandibular Overdenture. A.M. EL-SHEIKH\*, J.A. HOBKIRK, and J.P. KELLEWAY (*Department of Prosthetic Dentistry, Eastman Dental Institute, University of London, UK*).

**0837** 2:30 Control of Jaw-closing Forces: Natural Teeth vs. Implant-supported Protheses. V. LAI and T. LEUNG\* (*Department of Conservative Dentistry, Saint Bartholomew's and Royal London School of Medicine and Dentistry, University of London, UK*).

**0838** 2:45 Load Transfer of Segmented and Non-segmented Implant Abutments in Partially Edentulous Situation. K.T. OCHIAI\*, S. OZAWA, A.A. CAPUTO, and R. NISHIMURA (*Advanced Prosthodontics, School of Dentistry, University of California at Los Angeles, USA*).

**0839** 3:00 Biomechanical Stresses of Craniofacial Bones upon Dental Implant Loading. N. YACOUB\*, Y.H. ISMAIL, M.

TASSICK, and J.J. MAO (*Departments of Prosthodontics and Orthodontics & Dentofacial Orthopedics, School of Dental Medicine, University of Pittsburgh, PA, USA*).

**0840** 3:15 Effect of Implant Length and Width on Cortical Bone Stress. J.S. WON\*, M.E. McALARNEY, and P. WANG (*School of Dental and Oral Surgery, Columbia University, NY, USA*).

**0841** 3:30 Comparative Load Transfer Characteristics of a Serrated Wide-body Implant. C. ALEXANDRIDIS\*, A. PANAGIOTOPOULOU, and A.A. CAPUTO (*University of Athens School of Dentistry, Greece; and UCLA School of Dentistry, Los Angeles, CA, USA*).

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**Seq#: 100** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Room A-1**

**Microbiology/Immunology - Physiology and Genetic Analysis of Oral Bacteria**

**Chairpersons: E. Froeliger and R. Burne**

**0842** 1:45 Acids Formed Aerobically and Anaerobically by Pure and Mixed Cultures of Oral Bacteria from Oxidizable Sugar, Organic Acid, and Amino Acid Substrates. M. TRAUDT and I. KLEINBERG\* (*State University of New York, Stony Brook, USA*).

**0843** 2:00 Effects of Ablation of Enzyme I of the Sugar Phosphotransferase (PTS) of *Streptococcus salivarius* on Urease Gene Expression. C. WEAVER, Y.M. CHEN, and R.A. BURNE\* (*Center for Oral Biology, University of Rochester, NY, USA*).

**0844** 2:15 Identification of a Long Repetitive Region and a Conserved Anchor Domain in the *fap1* Locus from *Streptococcus parasanguis* FW213. H. WU\* and P. FIVES-TAYLOR (*University of Vermont, Burlington, USA*).

**0845** 2:30 Characterization of Recombinant PepO Endopeptidase from *Streptococcus parasanguis*. J. OETJEN\*, P. FIVES-TAYLOR, and E.H. FROELIGER (*University of Vermont, Burlington, USA*).

**0846** 2:45 *Streptococcus parasanguis* PepO Endopeptidase is Homologous to Mammalian NEP. E.H. FROELIGER\*, J. OETJEN, and P. FIVES-TAYLOR (*University of Vermont, Burlington, USA*).

**0847** 3:00 Invasion of Dentinal Tubules by *Streptococcus gordonii* and *Porphyromonas gingivalis*. R.M. LOVE, M.D. McMILLAN, and H.F. JENKINSON\* (*University of Otago, Dunedin, New Zealand; and University of Bristol, UK*).

**0848** 3:15 *Porphyromonas gingivalis* Mutants with Attenuated Hemagglutinin, Protease, and/or Hemolysin Activities. T. CHEN\*, H. DONG, and M. DUNCAN (*Forsyth Dental Center, Boston, MA, USA*).

**0849** 3:30 Characterization of the Human IgG Fc Receptors of *Fusobacterium nucleatum*. M. GUO\*, Y.-P. HAN, A. SHARMA, and E. De NARDIN (*Department of Microbiology, Department of Oral Biology, State University of New York at Buffalo, USA*).

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**Seq#: 101** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Ballroom C**

**Mineralized Tissue - Dentin, Cartilage, & Cementum**

**Chairpersons: C. Knight and D. Bosshardt**

**0850** 1:45 Evolutionary Distribution of Dentin Matrix Proteins. J. BARSS\*, M. RAHIMA, and A. VEIS (*Northwestern University Dental School, Chicago, IL, USA*).

**0851** 2:00 Temporal Spatial Expression Pattern of Mouse Nma during Odontogenesis. C. KNIGHT\*, J. GLUHAK, D. PAVLIN, and M. MacDOUGALL (*Departments of Pediatric Dentistry and Orthodontics, University of Texas Health Science Center, San Antonio, USA*).

**0852** 2:15 Proteins of Peritubular Dentin: Isolation and Characterization. M. AL-ASADI\*, A. EMAM, F. SIDDIQUI, and A. VEIS (*Northwestern University Dental School, Chicago, IL, USA*).

**0853** 2:30 Retinoic-acid-induced, Matrix-vesicle-initiated Biom mineralization is Mediated by RAR $\alpha$ , RAR $\beta$ , and RAR $\gamma$ . K.P. WORCH\*, M. PACIFICI, R.A.S. CHANDRARATNA\*, and T. KIRSCH (*Department of Anatomy/Histology, School of Dental Medicine, University of Pennsylvania, Philadelphia; and Allergan Pharmaceuticals, Irvine, CA, USA*).

**0854** 2:45 Mutant BMP Receptor Inhibits Retinoic Acid Induction of Chondrocyte Hypertrophy. T. KAGANOVA\*, K.M. PALLANTE, S. VOLK, P.S. LEBOY, M. PACIFICI, and S.L. ADAMS (*School of Dental Medicine, University of Pennsylvania, Philadelphia, USA*).

**0855** 3:00 Unique Strategy for Obtaining Cementoblasts, *in vitro*. J.A. D'ERRICO\*, J.E. BERRY, H.J. OUYANG, C. STRAYHORN, J.J. WINDEL, and M.J. SOMERMAN (*University of Michigan, Ann Arbor; and Cancer Therapy and Research Center, San Antonio, TX, USA*).

**0856** 3:15 Are Unique Proteins Present along the Forming Root Surface? D.D. BOSSHARDT\*, M. FORTIN, E. STRAWICH, M.J. GLIMCHER, and A. NANJI (*PEK, University of Basel, Switzerland; Université de Montréal, Canada; and Harvard Medical School, Boston, MA, USA*).

**0857** 3:30 Cementum Attachment Protein Enriches the Cementoblastic Population on Root Surfaces *in vitro*. I. BARKANA\*, A.S. NARAYANAN, N. SAVION, and S. PITARU (*Department of Oral Biology, Tel Aviv University, Israel; and Department of Pathology, Washington University, St. Louis, MO, USA*).

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**Seq#: 102** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Room 17**

### Neuroscience/TMJ - Sleep Disorders

**Chairperson: J.F. Yeo**

**0858** 1:45 Effect of Treatment on Spectral Analysis and Daytime Sleepiness in OSAS Patients. F. MORISSON\*, G. LAVIGNE, and J.Y. MONTPLAISIR (*Centre d'étude du Sommeil, Hôpital du Sacré Coeur, Université de Montréal, Québec, Canada*).

**0859** 2:00 Sleep Posture and Oral Appliance Therapy for Sleep Apnea Syndrome. K. YOSHIDA\* and T. IIZUKA (*Department of Oral and Maxillofacial Surgery, Graduate School of Medicine, Kyoto University, Japan*).

**0860** 2:15 Treatment of Obstructive Sleep Apnea and Snoring. A. FRANSSON\*, G. ISACSSON, A. JOHANSSON, L. LEISSNER, A. NÄSMAN, M. ALTON, and B. WENNEBERG (*Örebro Postgraduate Dental Education Center, Örebro Medical Centre Hospital, Göteborg University, Sweden*).

**0861** 2:30 Idiopathic (Essential) Oromandibular Sleep Myoclonus: A Confounder in Sleep Bruxism Diagnosis. T.

KATO\*, J.Y. MONTPLAISIR, J.P. LUND, P. BLANCHET, F. GUITARD, and G. LAVIGNE (*Centre d'étude du Sommeil, Hôpital du Sacré-Coeur, Université de Montréal, Canada*).

**0862** 2:45 A Controlled Challenge of Motor Performance in Sleep Bruxers. P.H. ROMPRÉ\*, M. MAJOR, F. GUITARD, L. TENBOKUM, K. O'CONNORS, T. NIELSEN, and G. LAVIGNE (*Centre Fernand Séguin, Hôpital L.H. LaFontaine, Hôpital Sacré-Coeur, and Faculté de Médecine Dentaire, Université de Montréal, Canada*).

**0863** 3:00 Sleep Condition of CMD Patients. Y. KOBAYASHI, K. NAKAJIMA\*, and H. SHIGA (*The Nippon Dental University, Tokyo, Japan*).

**0864** 3:15 Heart Rate Associated with Masseter Muscular Activities during Sleeping in CMD Patients. Y. KOBAYASHI, H. AKIYAMA\*, and H. SHIGA (*The Nippon Dental University, Tokyo, Japan*).

3:30 Discussion

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**Seq#: 103** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Room 2**

### Nutrition - Consumption Patterns and Dental Health

**Chairpersons: T. Grenby and S. Kashket**

**0865** 1:45 Consumption of Cariogenic Snacks a Predictor of ECC. C.A. RIEDY\*, P. MILGROM, E.Y. YANG, P. WEINSTEIN, L. MANIBUSAN, and J. BRUSS (*Department of Dental Public Health Science, University of Washington, Seattle; and Department of Public Health, CHC, CNMI, USA*).

**0866** 2:00 Plaque pH Response to Cheese of Varying Fat Content. L.M. STEINBERG, R. TOUGER-DECKER, R. HOFFMANN\*, B. SOTO, D. FURGANG, and D.H. FINE (*New Jersey Dental School, UMDNJ, Newark, USA*).

**0867** 2:15 The Laxative Effect of Sugar-substituted Chocolate. J.-F. ROULET\* and M. FRANKE (*Department of Operative and Preventive Dentistry and Endodontics, School of Dental Medicine, Humboldt University Berlin (Charité), Germany*).

**0868** 2:30 Barriers to Desirable Dietary Change in Partially Dentate Subjects. P.J. MOYNIHAN\*, P. SINGH, N.J.A. JEPSON, J.M. THOMASON, and C.L. MOODY (*The Dental School, University of Newcastle, UK*).

**0869** 2:45 Dietary Texture Indices Associated with Oral Health in Elders. C.C. MOBLEY\* and M.J. SAUNDERS (*University of Texas Health Science Center, San Antonio; and GRECC/ALMMVH, San Antonio, TX, USA*).

**0870** 3:00 The Effect of Partial Denture Retention and Occlusion on Diet Quality. M.P. FAINE\* and R. FRANK (*University of Washington, Seattle, USA*).

**0871** 3:15 Risk Factors for Dental Fluorosis in Mexico City. J.C. HERNANDEZ, D. JIMENEZ\*, A. FOULLON, C. LEDESMA, M. CANALES, and A. BAEZ (*Universidad Nacional Autonoma de México*).

3:30 Discussion

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**Seq#: 104** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Room 7**

### Oral & Maxillofacial Surgery - Pain, Anesthesia and Dentoalveolar Surgery

**Chairpersons: J. Bennett and P. Rock**

**0872** 1:45 Gender Differences in Perception and Impact of Pain after Third Molar Surgery. Y.-F. REN\*, H. MALMSTRÖM, P. DESJARDINS, B. IRANPOUR, P. BLACK, and K. JUDY (University of Rochester Eastman Dental Center, New York, USA).

**0873** 2:00 Extraction of Impacted Third Molar as a Psychobiological Stress Model. J. SANTAMARIA, R. HIERRO, M. ZUMARRAGA, I. ANDIA, I. ARTEAGOITIA\*, S. LANDA, G. SANTAMARIA, and R. DAVILA (Cruces Hospital and Zamudio Hospital, Servicio Vasco de Salud, University of Basque Country, Spain).

**0874** 2:15 Tablet vs. Solution Analgesia in Dental Extraction: A Randomized Triple-blind Trial. G.W. RABORN\*, M. GRACE, H. KOLA, and F. JAMALI (University of Alberta, Edmonton, Canada).

**0875** 2:30 The Effects of Individual Factors and of Drug Prophylaxis on Swelling and Pain in Oral Surgery. R.A. MISCHKOWSKI\*, A. RAZZAGHI, B. KLESPIER, R. FANGMANN, and J.E. ZÖLLER (Department of Oral and Maxillofacial Surgery, University of Cologne, Germany).

**0876** 2:45 Subjective Tests of Neurosensory Function. C.L. PHILLIPS, S. AUSTIN\*, G.K. ESSICK, and H.A. KIYAK (University of North Carolina, Chapel Hill; and University of Washington, Seattle, USA).

**0877** 3:00 The Minor Oral Surgery Outcome Scale. R.D. GOODEY\*, M.R. BRICKLEY, and J.P. SHEPHERD (Departments of Oral Surgery, Medicine, & Pathology, UWCM, Cardiff, UK).

**0878** 3:15 The Validity of a Simulation of Third Molar Eruption. M.R. BRICKLEY\* and J.P. SHEPHERD (Departments of Oral Surgery, Medicine, & Pathology, UWCM, Cardiff, UK).

**0879** 3:30 Effect of Orthodontic Space Closure on Mandibular Third Molar Position. W.P. ROCK\* and M. ELSEY (School of Dentistry, University of Birmingham, UK).

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**Seq#: 105** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Room 9**

#### Oral/Dental Hygiene - Power and Manual Toothbrushes

**Chairpersons: J. Hefferren and D. Weber**

**0880** 1:45 *In vitro* Evaluation of Cleaning Efficacy of Two Powered Toothbrushes. G.M. DRIESEN\*, P.R. WARREN, P. HILFINGER, C.-P. ERNST, N. STRUIF, and B. WILLERSHAUSEN-ZÖNNCHEN (Braun AG, Kronberg; and Johannes Gutenberg University, Mainz, Germany).

**0881** 2:00 Cleaning Efficacy of Manual (Reference) and Power Toothbrushes. J.J. HEFFERREN\*, M.L. BERG, L. COFFMAN, and T. BOARDMAN (University of Kansas, Lawrence; and Colorado State University, Fort Collins, USA).

**0882** 2:15 Plaque Removal Capabilities of One Manual and Five Automated Toothbrushes. T.M. PALMER, M.W. HALL, S.L. SMITH, S.H. WOOLF\*, B.J. PLOEGER, and R.P. CHRISTENSEN (Clinical Research Associates, Provo, UT, USA).

**0883** 2:30 Efficacy and Gingival Abrasion after Brushing with Three Electric Toothbrushes. G.A. van der WEIJDEN\*, M.F. TIMMERMAN, M. PISCAER, Y. IJZERMAN, and U. van der VELDEN (Department of Periodontology, ACTA, Amsterdam, The Netherlands).

**0884** 2:45 Comparison of Two Brush Heads for a Sonic Powered Toothbrush. L. HARPENAU\* (University of the Pacific School of Dentistry, San Francisco, CA, USA).

**0885** 3:00 Plaque Removal Efficacy of a Novel, Advanced Toothbrush. F.M. DOHERTY, D.M. JACOBS, M.L. LOW, B.J. MACKAY, and D.A. WEBER\* (Oral-B Laboratories, Belmont, CA, USA).

3:15 Discussion

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**Seq#: 106** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Room 11**

#### Periodontal Research – Pathogenesis - Periodontal Immunopathology

**Chairpersons: M. Taubman and W. Geurtzen**

**0886** 1:45 Regulation of Th1 Lymphocyte Accumulation in Periodontal Disease by RANTES. T. KAWAI\*, J.W. EASTCOTT, D.J. SMITH, and M.A. TAUBMAN (Department of Immunology, Forsyth Dental Center, Boston, MA, USA).

**0887** 2:00 Characterization of Immunocompetent Cells in the Diseased Canine Periodontium. M. CHRISTGAU\*, R.G. CAFFESSE, J.R. NEWLAND, G. SCHMALZ, and R. D'SOUZA (Dental Branch, University of Texas at Houston Health Science Center, USA; and Dental School, University of Regensburg, Germany).

**0888** 2:15 Phenotypical Characterization of Intraepithelial Gingival T-lymphocytes Suggests Their Active Involvement in Local Immune Response. R. RASCHKOVSKY\* and H.H. ZADEH (School of Dentistry, University of Southern California, Los Angeles, USA).

**0889** 2:30 CD4<sup>+</sup> T-cell-modulated Alveolar Bone Loss in *Actinobacillus actinomycetemcomitans*: Aa-infected HuPBL-NOD/SCID Mice. Y.-T. TENG\*, R.P. ELLEN, and R.M. GORCZYNSKI (School of Dentistry, University of Western Ontario; and Faculty of Dentistry, University of Toronto, Canada).

**0890** 2:45 Immunohistological Distribution of Inflammatory Cells in Rapidly Progressive and Adult Periodontitis. G. HILLMANN, S. KRAUSE\*, and W. GEURTSEN (Department of Conservative Dentistry and Periodontology, Dental School, Hannover, Germany).

**0891** 3:00 Oligoclonality of T-cell Receptor Vb6 in Periodontitis Tissues. Y. OHSAWA, K. YAMAZAKI\*, T. NAKAJIMA, and K. HARA (Department of Periodontology, Niigata University School of Dentistry, Japan).

**0892** 3:15 Residual Vascular Basement Membrane in Advanced Periodontitis. C.C. CHAPPLE\*, R.K. KUMAR, and N. HUNTER (Faculty of Dentistry, University of Sydney; and Institute of Dental Research, Surry Hills, NSW, Australia).

**0893** 3:30 Non-surgical Resolution of Apical Cysts. Microscopic and Immunohistochemical Study. M.J.C. ROCHA\*, A. CONSOLARO, and R.S. VIEIRA (Universidade Federal de Santa Catarina and Universidade de São Paulo, Brazil).

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**Seq#: 107** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Room 8**

#### Periodontal Research – Therapy - Tissue Engineering and Biomimetics (joint session with Mineralized Tissue)

**Chairpersons: R. Franceschi and M. Tonetti**

**0894** 1:45 Altered Vascularization and Bone Repair in Gel B-/- Mice. E.J. ALPERN\*, C. FERGUSON, T. VU, Z. WERB, and J.A. HELMS (University of California, San Francisco, USA).

**0895** 2:00 Osteogenic Potential of Bone Marrow and Periosteum in Tissue-engineered Bone. R. TSAY\*, W. LANDIS, and J.P. VACANTI (*Departments of Orthopedics and Surgical Research, Children's Hospital, Boston, MA, USA*).

**0896** 2:15 Gene Therapy for Bone Regeneration: An Adenovirus Expressing BMP-7 is Osteogenic. R.T. FRANCESCHI\*, D. WANG, K. GU, and R.B. RUTHERFORD (*University of Michigan, Ann Arbor, USA*).

**0897** 2:30 Sustained Plasmid DNA Delivery from Matrices for Tissue Regeneration. L.D. SHEA\*, E. SMILEY, J. BONADIO, and D.J. MOONEY (*University of Michigan, Ann Arbor, USA*).

**0898** 2:45 Tissue-engineered Cartilage Repairs a Mouse Skull Defect. H.C. NGUYEN\*, D. MONTUFAR-SOLIS, and P.J. DUKE (*Dental Branch, Health Science Center, University of Texas, Houston, USA*).

**0899** 3:00 Tissue-engineered Bone Formation Using Chitosan and Chitosan/TCP Sponges. Y.M. LEE, Y.J. PARK, E.Y. HAN\*, Y. KU, S.J. LEE, and C.P. CHUNG (*Department of Periodontology, Seoul National University; and Department of Industrial Pharmacy, Ewha Women's University, Seoul, Korea*).

**0900** 3:15 Biomimetic Endosseous Grafts: Reparative Potential of HA-P-15 Matrices. R.S. BHATNAGAR\*, J.J. QIAN, and N. SMITH (*University of California, San Francisco; and CSU, Hayward, CA, USA*).

**0901** 3:30 Injectable Hydrogels with Covalently Linked Peptides for Bony Tissue Development. E. ALSBERG\*, J.A. ROWLEY, L.D. SHEA, E.E. LIAO, R.T. FRANCESCHI, and D.J. MOONEY (*University of Michigan, Ann Arbor, USA*).

**Seq#: 108** **Thursday, March 11, 1:45 pm - 3:45 pm**  
**Oral Session, Room 10**

**Prosthodontics - All-ceramic Restorations: Clinical Evaluations, Material Properties, Occlusal Wear**

**Chairpersons: M. Kern and S. Campbell**

**0902** 1:45 Empress 2 All-ceramic Bridge Clinical Trial: Status 1998. J.A. SORENSEN\*, M. CRUZ, W.T. MITO, H. MEREDITH, O. RAFFEINER, and H.P. FOSER (*Dental Research Center, Oregon Health Sciences University, Portland, USA*).

**0903** 2:00 CAD/CIM Ceramic 3-Unit Posterior Fixed Partial Dentures: A Clinical Evaluation. A. BINDL\*, W. APHOLT, and W. MÖRMANN (*Division of Aesthetic and Computer Restorations, Center for Dental and Oral Medicine, University of Zürich, Switzerland*).

**0904** 2:15 Characterization of Fracture Mode and Origin in Bilayered Dental Ceramics. G.A. THOMPSON\* (*University of Alabama at Birmingham School of Dentistry, USA*).

**0905** 2:30 Influence of Framework Design on the Load-bearing Capacity of Lower Anterior All-ceramic Resin-bonded Fixed Partial Dentures. S.O. KOUTAYAS, M. KERN\*, F. FERRARESSO, and J.R. STRUB (*Department of Prosthodontics, University of Freiburg; and Department of Prosthodontics, University of Kiel, Germany*).

**0906** 2:45 Core Ceramic Flexural Strength from Water Storage and Reduced Thickness. J.A. SORENSEN, W.T. MITO\*, and T.H. CHAMBERLAIN (*Fixed Prosthodontics, School of Dentistry, Oregon Health Sciences University, Portland, USA*).

**0907** 3:00 Physical Properties of Cerec CAD/CIM Crown Materials. S. WINDISCH\*, R.A. HOLLIS, W. MÖRMANN, and

R.P. CHRISTENSEN (*Dental School, University of Zürich, Switzerland; and Clinical Research Associates, Provo, UT, USA*).

**0908** 3:15 Material Properties of OPC All-ceramic Crowns. S.S. AZER\*, J.L. DRUMMOND, T.J. KING, and S.D. CAMPBELL (*Department of Restorative Dentistry, University of Illinois at Chicago, USA*).

**0909** 3:30 Three-body *in vitro* Wear of Enamel against Dental Ceramics. J.A. SORENSEN, E. SULTAN\*, and J.R. CONDON (*Oregon Health Sciences University, Portland; and University of Southern California, Los Angeles, USA*).

**Seq#: 109** **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Pulp Biology - Pulp Capping, Odontoblasts, Development**

**0910** Pulp Capping with a Modified Bioglass<sup>®</sup> Formula (#A68-modified). A.E. CLARK\*, C.H. PAMEIJER, H.R. STANLEY, and N.P. LOUW (*University of Florida, Gainesville; University of Connecticut, Farmington, USA; and University of Stellenbosch, South Africa*).

**0911** Pulp Capping with "Total Etch" and Other Experimental Methods. C.H. PAMEIJER\* and H.R. STANLEY (*University of Connecticut, Farmington; and University of Florida College of Dentistry, Gainesville, USA*).

**0912** Histological Analysis of Direct Capping with Enamel Dentin Bonding System *in vivo*. L. CIAVARELLI\*, P. DE FAZIO, A. SCARANO, and A. PIATTELLI (*Dental School, University of Chieti, Italy*).

**0913** Wound Healing Process of Pulp Directly Capped with Adhesive Resins. Y. KATOH\* (*Nippon Dental University School of Dentistry at Niigata, Japan*).

**0914** Healing and Interfacial Ultra-morphology of Monkey Pulp Capped with Adhesives. M. FUJITANI\*, S. SHIBATA, B. VAN MEERBEEK, Y. YOSHIDA, S. INOKOSHI, K. WAKASA, and H. SHINTANI (*Hiroshima University and Tokyo Medical and Dental University, Japan; and Catholic University, Leuven, Belgium*).

**0915** A New Concept Toward Direct Pulp Capping Using Compomer Restorative. C.H. DRIESSEN\*, W.J.C. COETZEE, and A.J. LIGTHELM (*University of Pretoria, South Africa*).

**0916** Study of 4-META/MMA-TBB Resin Containing Ca(OH)<sub>2</sub> as Direct Pulp-capping Agent. T. SUZAKI\* and Y. KATOH (*Nippon Dental University, School of Dentistry at Niigata, Japan*).

**0917** Study of Adhesive Resins Containing Ca(OH)<sub>2</sub> as Pulp Capping Agents. T. EBIHARA\* and Y. KATOH (*Nippon Dental University School of Dentistry at Niigata, Japan*).

**0918** Dentin Bridging Process of Mechanically Exposed Monkey Pulp: TEM Observations. Y. KITASAKO\*, S. SHIBATA, S. YONEDA, M. ARAKAWA, Y. YAMASHITA, and J. TAGAMI (*Department of Operative Dentistry and Department of Oral Anatomy, Tokyo Medical and Dental University, Japan*).

**0919** Studies on a Mouse Model of Cleidocranial Dysplasia. S.J. ASGARI\*, A. CAVENDER, J. GAIKWAD, T. ÅBERG, I. THESLEFF, and R. D'SOUZA (*Dental Branch, University of Texas Health Science Center, Houston, USA; and University of Helsinki, Finland*). **(1998 AADR Student Fellowship Recipient)**

**0920** Adhesion of Osteoblasts to Human Dentin Tissue. Q. ZHU\*, R. HAGLUND, J. CHIOU, and J.W. DEAN, III (*School of Dental Medicine, University of Connecticut, Farmington, USA*).



**0921** Effects of a Dentin Matrix Protein Extract on Mouse Odontoblast Cell Lines. A. McKENZIE\*, J. NYDEGGER, A.T. SMITH, and M. MacDOUGALL (*Department of Pediatric Dentistry, University of Texas Health Science Center at San Antonio, USA; and School of Dentistry, University of Birmingham, UK*).

**0922** Control of Cytosolic Free Ca<sup>2+</sup> by Extracellular Ca<sup>2+</sup> in Freshly Isolated Rat Odontoblasts. R. DAVIDSON\* and L. GUO (*College of Dentistry, New York University, USA*).

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**Seq#: 110**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Prosthodontics - Luting Agents: Bond Strengths & Microleakage/Dowel and Core**

**0923** Effect of Cement Type on Retention of a Posterior Acid-etch Fixed Partial Denture with a Modified Design. O.M. ELMOWAFY\* and M.H.M. RUBO (*Faculty of Dentistry, University of Toronto, Ontario, Canada*).

**0924** Effects of Surface Treatments on Bond Strengths of Empress Crowns. J.C. CHANG\*, K. NOAMAN, J.M. POWERS, and A. CANTERBURY (*Houston Biomaterials Research Center, University of Texas Dental Branch, USA*).

**0925** *In vitro* Microleakage of Luting Cements and Foundation Material. J. CONNOLLY\* and T.J. LINDQUIST (*Department of Prosthodontics, University of Iowa, Iowa City, USA*).

**0926** The Shear Bond Strength of 4-META Luting Cement with C.P. Titanium under Thermocycling. C.C. HSU and W.M. YANG\* (*Chung Shan Medical and Dental College, Taichung, Taiwan, ROC*).

**0927** *In vitro* Evaluation of Luting Agents on Secondary Caries Development. R.S.A. SHINKAI\*, A.A. DEL BEL CURY, and J.A. CURY (*Piracicaba School of Dentistry, State University of Campinas, Brazil*).

**0928** Bond Strength of Cements to Titanium, Gold, and Aluminum Oxide. M. SIERRAALTA\*, M.E. RAZZOOG, B.R. LANG, and P. YAMAN (*University of Michigan, Ann Arbor, USA*).

**0929** Resin-Metal Bond: New Resins and Bonding Systems Using Silanization. A. RIEBELING\*, I. BUHLMAN, A. SCHINKER, B. WÖSTMANN, and P. FERGER (*Department of Prosthodontics, Justus-Liebig-University, Giessen, Germany*).

**0930** Relation between Dowel Extension and Bone Level in Anterior Teeth. S. BURANADHAM\*, S.A. AQUILINO, and C.M. STANFORD (*Department of Prosthodontics and Dows Institute for Dental Research, University of Iowa, Iowa City, USA*).

**0931** Effect of Surface Structure on Retention of Posts in the Cast-on Technique. A. WELK\*, P. FLEISSNER, M. ROSIN, and B. HEINE (*Dental School, University of Greifswald; and Department of Surface Technologies and Material Science, Fachhochschule Aalen, Germany*).

**0932** Retrospective Analysis of Factors Affecting the Longevity of Post Crowns. L. NANAYAKKARA\*, A. McDONALD, and D.J. SETCHELL (*Eastman Dental Institute, London, UK*).

**0933** An 11-year Clinical Evaluation of Posts and Cores. Y. AMAKAWA\*, S. FUKUSHIMA, and Y. TSUBOTA (*Department of Fixed Prosthodontics, Tsurumi University School of Dental Medicine, Yokohama, Japan*).

**0934** Stresses in Post and Core Build-up Materials. E.P. HOLMGREN\*, F.K. MANTE, E. SHOKOUFEH, and Z. AFSHARZAND (*School of Dental Medicine, University of Pennsylvania, Philadelphia, USA*).

**0935** Retention and Shear Bond Strength of Four Post Systems *in vitro*. L.W. STOCKTON, C.T. CLARKE\*, and P.T. WILLIAMS (*University of Manitoba, Winnipeg, Canada*).

**0936** Fracture Resistance of Cast Posts and Cores Loaded at Different Positions. R.W. LONEY\* and M.B. MOULDING (*Dalhousie University, Halifax, NS; and University of Saskatchewan, Saskatoon, Canada*).

**0937** Change in Strength from Creating a Ferrule *via* Crown-lengthening. A.G. GEGAUFF\* (*Ohio State University, Columbus, USA*).

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**Seq#: 111**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Adhesion/Surface Effects**

**0938** Effects of Wetness and Collagen Removal on Shear Bond Strength (SBS) Test. S. CHERSONI\*, C. PRATI, A. PISTANI, G. MONTANARI, and R. MONGIORGI (*University of Bologna, Italy*).

**0939** Effect of Dryness of Tooth Fragments. B. FARIK\*, E.C. MUNKSGAARD, J.O. ANDREASEN, and B.I. SUH (*Department of Dental Materials, University of Copenhagen; and Bisco Inc., USA*).

**0940** Effects of Prophylaxis Products on Bonding Sealant Tensile Strength and Adhesive Remnant Index. M.E. SANTOS\* and O. CHEVITARESE (*Departments of Pediatric Dentistry, Schools of Dentistry, UFF/USP, Brazil*).

**0941** Flexural Properties of Selected Dentin Bonding Resins. S.S. KHAJOTIA, B.R. KIM, M.G. DUNCANSON, Jr., and T.J. FRUITS\* (*University of Oklahoma College of Dentistry, Oklahoma City, USA*).

**0942** Contribution of the Interfacial Components to Resin-Dentin Adhesion. C. BERGERON\*, M.A. VARGAS, and S.R. ARMSTRONG (*College of Dentistry, University of Iowa, Iowa City, USA*).

**0943** Shear Bond Strength of Glass-ionomer Cement to Composite Resin with Different Surface Treatments. R.F. MENDES, F.C. SÁ\*, M.T.A.A. BASTOS, and H. NAGEM FILHO (*Bauru Dental School, University of São Paulo, Brazil*).

**0944** Effects of Different Surface Treatments and Silane on Tensile Bond Strength of Composite Repairs. J.M. MELHADO\*, E.M. SOUZA, and C.E. FRANCISCHONE (*Bauru Dental School, University of São Paulo, Brazil*).

**0945** *In vitro* Evaluation of Surface Treatment for Composite Repair. K. DIAS\*, J. DUARTE, M.A. MASIOLI, M. PARAÍZO, and A.C. LAMOSA (*Universidade do Estado do Rio de Janeiro, Brazil*).

**0946** The Bond Strength of Two Compomers Using Different Polymerization Techniques. A. de ROSSI\*, R.G. PALMA, and T. NONAKA (*Ribeirão Preto Dental School, University of São Paulo, Brazil*).

**0947** Bond Strength of Resin-modified Glass-ionomer Cements to Dentin Contaminated with Saliva. G.E. JOHNSON\*, R.D. DAVIS, J.D. OVERTON, and K.S. VANDEWALLE (*Keesler Medical Center, Keesler AFB, MS, USA*).

**0948** Influence of Dentin Blood Contamination on Adhesive Resin Cement. T. KANESHIMA\*, H. YATANI, T. KASAI, E.K.

WATANABE, and A. YAMASHITA (*Okayama University Dental School, Japan*).

**0949** Comparative Study of Bonding Properties of Compomers and Amalgam. R. GALLARDI\* and S. HATIBOVIC-KOFMAN (*University of Western Ontario, London, Canada*).

**Seq#: 112**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Resin/Tooth Microstructure/ Chemistry of Adhesion**

**0950** Interfacial Ultrastructure of a Self-etching Primer/Adhesive. M.A. VARGAS\* (*University of Iowa, Iowa City, USA*).

**0951** Effect of Primer Containing Calcium Phosphate on Hybrid Layer Formation. K. ITOU\*, Y. TORII, K. ISHIKAWA, K. SUZUKI, and K. INOUE (*Departments of Operative Dentistry and Dental Materials, Okayama University Dental School, Japan*).

**0952** Evaluation of Quality of Dentin Bonding Only by SEM Examination. K. HIRANUMA\* and N. NAKABAYASHI (*Institute of Medical and Dental Engineering, Tokyo Medical and Dental University, Japan*).

**0953** Grafting of MMA onto Collagen Using NPG with and without Ferric Compounds. S. KONDO\*, S. OHKAWA, M. UO, T. SUGAWARA, and F. WATARI (*School of Dentistry, Hokkaido University, Sapporo, Japan*).

**0954** An ATR-FTIR Study on the Interaction of Adhesive with Dentin. K. IKEMURA\* and T. ENDO (*Research and Development, Shofu, Inc., Kyoto; and Tokyo Institute of Technology, Yokohama, Japan*).

**0955** Field Emission Scanning Microscopy of Etched Dentin under Hydrated Conditions. P. SPENCER, J.D. EICK\*, and J.R. SWAFFORD (*University of Missouri, Kansas City School of Dentistry, USA*).

**0956** Effects of Acids on the Susceptibility of Dentin to Denaturation. K. AGEE\*, Y. ZHANG, J.L. BORKE, and D.H. PASHLEY (*Department of Oral Biology, Medical College of Georgia, Augusta, USA*).

**0957** Effects of Polycarboxylic Acids on Enamel and Dentin. R. FUKUDA\*, K. WAKASA, Y. YOSHIDA, H. SHINTANI, and B. VAN MEERBEEK (*Hiroshima University School of Dentistry, Japan; and BIOMAT, Catholic University of Leuven, Belgium*).

**0958** The Role of the Collagen Network on the Dentin Adhesion in Primary Teeth. D. SALIM\*, M. TOLLARA, J.C. IMPARATO, J. BOCANGEL, and E. MATSON (*Department of Orthodontics and Pediatric Dentistry/Operative Dentistry, School of Dentistry, University of São Paulo, Brazil*).

**0959** Is Moist Bonding Necessary Following Acid Conditioning of Dentin *in vivo*? A. ITTHAGARUN\*, F.R. TAY, S.H.Y. WEI, and R.J. SMALES (*Faculty of Dentistry, University of Hong Kong, SAR, China*).

**0960** Effect of Calcium Phosphate Dissolved in Etchant on Dentin Bonding. K. IGARASHI\* and N. NAKABAYASHI (*Institute of Medical and Dental Engineering, Tokyo Medical and Dental University, Japan*).

**0961** Effect of Self-etching Primer on Bonding to EDTA-demineralized Dentin. K. MIYASAKA\*, A. WATANABE, and N. NAKABAYASHI (*Institute of Medical and Dental Engineering, Tokyo Medical and Dental University, Japan*).

**0962** Wettability of Dentin Following the Use of NaOCl as a Conditioner. E.G. BLOCH\*, D.F. MURCHISON, D. SAVETT, and C. SHEN (*Wilford Hall Medical Center, Lackland AFB, Texas; and Department of Dental Biomaterials, UFCD, Gainesville, FL, USA*).

**0963** Chemical Interaction between Adhesive Monomer and Hydroxyapatite. S. HIRABAYASHI\* and T. HIRASAWA (*Tsurumi University School of Dental Medicine, Yokohama, Japan*).

**0964** Effects of De/Remineralization on Bonding Using Self-etching Primers. M. NAKAJIMA\*, M. OGATA, N. HARADA, J. TAGAMI, and D.H. PASHLEY (*Tokyo Medical and Dental University, Japan; and Medical College of Georgia, Augusta, USA*).

**Seq#: 113**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Biological Effects: Cytotoxicity, Microbial Activity, and Fluoride Release**

**0965** Cytotoxicity of Resin-modified Glass-ionomer Luting Cements on Human Gingival Fibroblasts. R.C.S. CHEN\*, K.H. CHEN, and L.R. CHIOU (*China Medical College, Taichung; and Chang Gung Hospital, Taipei, Taiwan, ROC*).

**0966** Antibacterial Activity of Dental Cements. C.W. BERRY, B.H. MILLER\*, A.W. MILLER, and P.M. CAMPBELL (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**0967** Antibacterial Activity of a Glass-ionomer Cement: Fuji IX. N.B. ALMEIDA\*, J.F. SIQUEIRA, Jr., and S.R. MORAES (*Faculdade de Odontologia, UERJ; and University Veiga de Alemida, Rio de Janeiro, Brazil*).

**0968** Antibacterial Activity of Fluoride-containing Restorative Materials. P.R. KANDOLA\*, L.E. TAM, E.D. FILLERY, and D. MCCOMB (*Faculty of Dentistry, University of Toronto, Canada*).

**0969** Antibacterial Effect of Glass-ionomer Cement Substratum on *S. sanguis* Biofilms. C. HENGTRAKOOL\*, G.J. PEARSON, and M. WILSON (*Eastman Dental Institute, London, UK*).

**0970** An Evaluation of the Anti-cariogenicity of Adhesive Resin Cements. R.W. ELLIS\* and M.A. LATTA (*Creighton University School of Dentistry, Omaha, NE, USA*).

**0971** Fluoride Effect of Glass Ionomers on Progression of Root Caries. K. OKUYAMA\*, H. KOMATSU, and H. SANNO (*School of Dentistry, Hokkaido University, Sapporo, Japan*).

**0972** Fluoride Release of Resin-reinforced Glass-ionomer Cements. H. NAKASEKO\*, S. TOSAKI, and K. HIROTA (*Research and Development Department, GC Corporation, Tokyo, Japan*).

**0973** Laboratory Evaluation of a Fluoride-releasing Adhesive Cement. M.A. LATTA, W.W. BARKMEIER, R.M. PITRUZZELLO, and T.M. WILWERDING\* (*Creighton University School of Dentistry, Omaha, NE, USA*).

**0974** Microbial Profile on Metallic and Ceramic Bracket Materials. P. ANHOURY\*, L. CHOU, C.V. HUGHES, S.S. SOCRANSKY, and D. NATHANSON (*School of Dental Medicine, Boston University; and Forsyth Dental Center, Boston, MA, USA*).

**Seq#: 114**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Cements: Clinical Manipulation and Processing/Property Relationships**

**0975** Marginal Adaptation of Ceramic Inlays Using Different Types of Luting Materials. R. LANG, B. KÖLNPERGER\*, A. LEIBROCK, M. BEHR, M. ROSENTRITT, and G. HANDEL (*Department of Prosthetic Dentistry, University of Regensburg, Germany*).

**0976** Marginal Adaptation of Ceramic Insert Systems before and after Cementation. M. ÖZCAN, P. PFEIFFER\*, I. NERGIZ, and R. TÛTÛNCÛ (*University of Marmara-Istanbul, Turkey; and University of Cologne and University of Hamburg, Germany*).

**0977** Can Proximal Overhangs Be Avoided when Luting Tooth-colored Inlays? J.M. GROSS\*, R. HAAK, and M.J. NOACK (*Department of Operative Dentistry and Periodontology, University of Cologne, Germany*).

**0978** Comparison of Sealant Application Techniques Using Glass-ionomer Cement. N. EWOLDSSEN, M.L. GUSTAFSON\*, and E. KINSELL (*University of Nebraska Medical Center College of Dentistry, Lincoln, USA*).

**0979** Effectiveness of Surface Protection of Resin-modified Glass-ionomer Cements Evaluated Spectrophotometrically. C.M.C. TAPETY\*, D.F.G. CEFALY, B.G.M. SEABRA, F. VALERA, E.M. TAGA, and M.F.L. NAVARRO (*Bauru Dental School, USP, Brazil*).

**0980** Analysis of Surface Roughness of Glass-ionomer Cements and Compomer. D. PEDRINI\*, M.S.M. CANDIDO, and A.L. RODRIGUES, Jr. (*School of Dentistry of Araraquara—UNESP, São Paulo, Brazil*).

**0981** Polymerization Effectiveness of High-intensity Curing Lights through Porcelain. M.E. McLEAN\* and D.J. FASBINDER (*School of Dentistry, University of Michigan, Ann Arbor, USA*).

**0982** Properties of Resin Cements as Affected by Curing Modes. D. LI, B. WINDMUELLER\*, M. EL-SHEIKH, and J.M. POWERS (*Houston Biomaterials Research Center, TX, USA; ESPE Dental AG, Seefeld, Germany; and Tanta University, Egypt*).

**0983** Study on Curing Behavior of Resin-modified Glass-ionomer Cement by Raman Spectroscopy. K. IKEDA\*, A. FUJISHIMA, M. SUZUKI, T. MIYAZAKI, and R. SASA (*School of Dentistry, Showa University, Tokyo, Japan*).

**0984** Crack Closure on Rehydration and Glass-ionomer Materials. P. PILECKI, S.K. SIDHU\*, and T.F. WATSON (*GKT Dental Institute, Guy's Hospital, London; and University of Newcastle Dental School, UK*).

**0985** Comparison of the Setting Times of Provisional Eugenol-free Luting Cements. G.H. RACKELMANN\* and K.-P. STEFAN (*ESPE Dental AG, Seefeld, Germany*).

**0986** Effect of Viscosity on the Strengths of Luting Agents for Stainless Steel Crowns. M.S. FUSELIER\*, V.A. MARKER, and C.F.G. WILSON (*Baylor College of Dentistry, Dallas, TX, USA*).

**0987** Color Measurements of Two Resin Cements. J. HUNT\*, A.H. RIPPS, and J.O. BURGESS (*Louisiana State University—School of Dentistry, New Orleans, USA*).

**0988** Influence of Mixing Procedures on Wear Resistance of Glass-ionomer Cements. U. LOHBAUER\*, M. PELKA, R. FRANKENBERGER, and N. KRÄMER (*Policlinic of Operative Dentistry and Periodontology, University of Erlangen, Germany*).

**0989** Thermal Stability of Hybrid Glass Ionomers. M.S. BAPNA\*, H.J. MUELLER, and J.L. DRUMMOND (*University of Illinois at Chicago; and American Dental Association Health*

*Foundation, National Institute of Standards and Technology, Gaithersburg, MD, USA*).

**Seq#: 115** **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Clinical Trials**

**0990** Different Liner Treatments: Post-operative Sensitivity of Amalgam Restorations. V.V. GORDAN\* and I.A. MJÖR (*University of Florida, Gainesville, USA*).

**0991** Factors Affecting Post-operative Sensitivity in Celay Ceramic Inlays. H. MOSCOVICH\*, C.M. KREULEN, and N.H.J. CREUGERS (*College of Dental Science, University of Nijmegen, The Netherlands*).

**0992** Factors Affecting Post-operative Sensitivity in Composite Resin Restorations. M. UNEMORI\*, Y. MATSUYA, Y. GOTO, and A. AKAMINE (*Faculty of Dentistry, Kyushu University, Fukuoka, Japan*).

**0993** Effect of Cavity Depth on Post-operative Sensitivity of Amalgam Restorations. V.V. GORDAN, I.A. MJÖR, and J.E. MOORHEAD\* (*University of Florida, Gainesville, USA*).

**0994** Clinical Evaluation of a Treatment for Cervical Dentin Hypersensitivity. S.H. MITCHELL\*, E.J. SWIFT, Jr., and K.N. MAY, Jr. (*School of Dentistry, University of North Carolina at Chapel Hill, USA*).

**0995** Three-year Clinical Study of Adhesive and Conventional Amalgam Restorations. M.L. CANNON\*, J.A. TYLKA, and J. SANDRICK (*Northwestern University Dental School, Loyola Oral Health Center, Chicago, IL, USA*).

**0996** Oral Epidemiology of a Population of Portuguese Schoolchildren. M. BERNARDO\*, M. MARTIN, J. LEITÃO, H. SOARES, B. LEROUX, N. HAWKINS, and T. DEROUEN (*University of Washington, Seattle, WA, USA; and University of Lisbon, Portugal*).

**0997** Two-year Clinical Evaluation of Three Different Composite Resin Systems. M.H. SILVA E SOUZA, Jr. and M. YAMAUTI\* (*Department of Restorative Dentistry, Bauru School of Dentistry, University of São Paulo, Brazil*).

**0998** Clinical Evaluation of 10% vs. 15% Carbamide Peroxide Whitening System. P. KIHN\*, D.M. BARNES, E. ROMBERG, and M. MOHAMMAD (*University of Maryland Dental School, Baltimore, USA*).

**0999** Clinical Evaluation of “Walking Bleach” Technique in Anterior Teeth. A Four-year Study. A. MONNERAT\*, K. DIAS, and H. ANDRADE FILHO (*Universidade Gama Filho and Universidade do Estado do Rio de Janeiro, Brazil*).

**1000** The Effect of 1.5% Calcium-peroxide-containing Toothpaste on Mouth. H.K. KWON\* (*Department of Preventive Dentistry and Public Oral Health, College of Dentistry, Yonsei University, Seoul, Korea*).

**1001** Two-year Clinical Trial of a Tooth-whitening Agent. E.J. SWIFT, Jr.\*, S.C. BAYNE, K.N. MAY, Jr., A.D. WILDER, Jr., and H.O. HEYMANN (*Department of Operative Dentistry, University of North Carolina, Chapel Hill, USA*).

**1002** Clinical Degradation Rate of 10% Carbamide Peroxide within First Hour. B.A. MATIS\*, P. WATTANAPAYUNGKUL, M. COCHRAN, and G.J. ECKERT (*Clinical Research, School of Dentistry, Indiana University, Indianapolis, USA*).

**1003** Primary Teeth Color in African-American, Caucasian, and Hispanic Patients. P. CLARK\*, J.M. POWERS, S.

SEYBOLD, R.M. FAY, and R. JOHNSON (*University of Texas at Houston Dental Branch, USA*).

**1004** Clinical Evaluation of Aquasil XLV Putty and Express Putty Impression Materials. D.M. BARNES and D.L. GEORGE\* (*University of Maryland Dental School, Baltimore, USA*).

**Seq#: 116**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Composite Bond Strength:      Bonding**  
**to Dentin and Enamel; Procedure Variables**

**1005** Effects of Oxygen, Nitrogen on Air Incorporation on Dentin Shear Bond Strength. E. MONDRAGON\* and K.-J.M. SÖDERHOLM (*Department of Dental Biomaterials, University of Florida College of Dentistry, Gainesville, USA*).

**1006** Effect of CoJet-Sand on Bond Strength to Enamel and Dentin. M.R. BOUSCHLICHER, F.R. LEAL\*, and D.B. BOYER (*University of Iowa College of Dentistry, Iowa City, USA*).

**1007** Effects of Technique Variations on Shear Bond Strength of a Self-etching Dentin Bonding System. T.S. JAFARZADEH-KASHI, J.C. SETCOS\*, and D.C. WATTS (*Turner Dental School, University of Manchester, UK*).

**1008** Effect of Saliva Contamination and Re-etching Time on the Shear Bond Strength of Pit and Fissure Sealants. R.M. PUPPIN-RONTANI\*, F. GARCÍA-GODOY, and D. JACKSON (*Department of Pediatric Dentistry, FOP/UNICAMP, Brazil; and University of Texas Health Science Center at San Antonio, USA*).

**1009** Influence of Formaline Cresol on Dentin Bonding of Luting Agents. K. SOENO\*, Y. TAIRA, H. MATSUMURA, and M. ATSUTA (*Department of Fixed Prosthodontics, Nagasaki University School of Dentistry, Japan*).

**1010** Dentin Wetting Agents and Rehydration. J. KANCA and G. ALEX\* (*Middlebury, CT; and Huntington, NY, USA*).

**1011** Dental Waterline Antimicrobials' Effect on Dentin Shear Bond Strength. H.W. ROBERTS\*, R.I. KARPAY, and S.E. MILLS (*USAF Dental Investigation Service, Brooks AFB; University of Texas at San Antonio; and USAF AFIA, Kirtland AFB NM, USA*).

**1012** The Effect of Eugenol on Shear Bond Strength of Composite Restorative Materials. H. MURDOCH\*, J. SCRABECK, and V.B. DHURU (*Marquette University School of Dentistry, Milwaukee, WI, USA*).

**1013** The Effect of Irrigation Solution on Dentin Bonding Agents and Restorative Shear Bond Strength. E. SUNG\*, S. CHAN, and A.A. CAPUTO (*Hospital Dentistry and Biomaterials Science, University of California at Los Angeles School of Dentistry, USA*).

**1014** Operator Experience Effects on Dentin Bonding Strength. L.G. WATANABE, M. STANINEC\*, A. HARNER, S.A. GANSKY, S.J. MARSHALL, and G.W. MARSHALL (*University of California, San Francisco, USA*).

**1015** Bond Strength to Dentin after Mechanical and Chemical Removal of Simulated Caries. R. FRANKENBERGER, H. OBERSCHACHTSIEK\*, N. KRÄMER, and A. PETSCHL (*Policlinic of Operative Dentistry and Periodontology, University of Erlangen, Germany*).

**1016** Dentin Adhesives. Shear Bond Strength on Healthy and Altered Dentin. L.M. BARROS, M.S.M. CANDIDO\*, L.A. RODRIGUES, Jr., and R.T. POZZOBON (*School of Dentistry of Araraquara-UNESP-SP, Brazil*).

**1017** Bond Strength of Resin Systems to Unground and Ground Enamel. K. KIDA\*, Y. MOMOI, and A. KOHNO (*Tsurumi University School of Dental Medicine, Yokohama, Japan*).

**1018** Strengths of Resins to Superficial vs. Deep Dentin. C.A.O. FERNANDES\*, R.M. CARVALHO, and D.H. PASHLEY (*UF Ceará, FOB USP, Brazil; and Medical College of Georgia, Augusta, USA*).

**Seq#: 117**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Composite Properties –      Experimental**  
**Formulations**

**1019** A Reduced-shrinkage Dental Composite Resin. V.A. LEE\* (*Biologic and Materials Sciences, University of Michigan, Ann Arbor, USA*).

**1020** Cure Shrinkage of Composite Resins and an Experimental LC Monomer. B.K. NORLING\*, B.L. WILSON, S.T. WELLINGHOFF, H.L. CARDENAS, and H.R. RAWLS (*University of Texas Health Science Center, San Antonio; and Southwest Research Institute, San Antonio, TX, USA*).

**1021** Surface Roughness of Experimental Composites Containing Spherical Silica Filler. H.N. LIM\*, S.J. PARK, K.S. LEE, and B.B. CHOI (*College of Dentistry, Kyung Hee University, Seoul, Korea*).

**1022** Effects of Cornstarch and Primer Additions on Mechanical Properties of Provisional Dental Resin. W. PANYAYONG\*, C.J. ANDRES, and Y. OSHIDA (*Prosthodontics and Dental Materials, Restorative Dentistry, Indiana University School of Dentistry, Indianapolis, USA*).

**1023** Effect of Scaffold-like Filler Additions on Provisional Material Mechanical Properties. P.J. STAMATIADES\*, J.Y. THOMPSON, S.C. BAYNE, and J.C. WARD (*University of North Carolina, Chapel Hill, USA*).

**1024** Water Sorption and Solubility of Fluorinated Experimental Dentin Bonding Agents. A. LEE\*, P. MONAGHAN, R. SEGHI, and R. RASHID (*Ohio State University College of Dentistry, Columbus, USA*).

**1025** The Effect of Physically Bonded Silane Coupling Agent in a Dental Composite. R. YIN\* and B.I. SUH (*Bisco Inc., Schaumburg, IL, USA*).

**1026** Effects of Photoinitiator Concentration on Conversion, Strength, and Stress Development. M.P. AARNTS\*, A. AKINMADE, and A.J. FEILZER (*ACTA, Department of Dental Materials Sciences, Amsterdam, The Netherlands*).

**1027** Effect of Silica Size on Polymerization Conversion of Resin Composite. K. FUJITA\*, T. IKEMI, N. NISHIYAMA, and K. NEMOTO (*School of Dentistry, Nihon University at Matsudo, Chiba, Japan*).

**1028** Properties of Acrylic Resins with Radiopaque Glass. Y.K. LEE\* and J.M. POWERS (*Wonkwang University, Cheonbuk, Korea; and Houston Biomaterials Research Center, TX, USA*).

**1029** The Effect of a Fluoro-substituted Diluent on the Water Sorption Properties of Experimental Composites. S. UPPITURI, S. VILLARROEL, J. YANICH\*, and R. SEGHI (*Ohio State University, Columbus, USA*).

**1030** The Relationship between Composite Resin Hydrophobicity and Stain Resistance. S. UPPITURI\*, S. VILLARROEL, J. YANICH, and R. SEGHI (*College of Dentistry, Ohio State University, Columbus, USA*).

**1031** Color Stability of an Antimicrobial Composite. G.M. KOWITZ\*, R. WONG, R.E. MONTGOMERY, and S.A. NATHOO (UCLA; Granada Dental Research, CA; and OraCeutical LLC, Monterey, MA, USA).

**1032** Improvement of Water Resistance of Resin Composite Using Mixed Silanes. T. NIHEI\*, S. KURATA, N. YOSHINO, and T. TERANAKA (Kanagawa Dental College, Yokosuka; and Science University of Tokyo, Japan).

**1033** *In vitro* Wear of Primary Enamel with Different Restorative Materials. S.C. CHANG, D.A. GIVAN\*, S. NIMER, C.F. COX, A.A. HAFEZ, and J.B. THORNTON (University of Alabama School of Dentistry, Birmingham, USA).

**1034** Relation between Filler Particle Size and Wear Rate. J. SCHWARTZ\*, I. GARCEA, V.V. GORDAN, and K.-J.M. SÖDERHOLM (Department of Dental Biomaterials, University of Florida College of Dentistry, Gainesville, USA).

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**Seq#: 118**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

#### Dental Materials - Corrosion & Casting Alloys

**1035** Corrosion of Alloy-Solder Interfaces Studied by Microelectrode Technique. L. RECLARU\*, H. LÜTHY, P.-Y. ESCHLER, and C. SUSZ (Px Tech S.A., La Chaux-de-Fonds; University of Zürich; and Qualident S.A., Geneva, Switzerland).

**1036** Effect of Alpha/Gamma Phase Ratio on Corrosion Behaviors of Dual-phase Stainless Steels. Y.J. LIM\*, M. REYES, S. THONGTHAMMACHAT, K. SUKCHIT, M. PANICH, and Y. OSHIDA (Indiana University School of Dentistry, Indianapolis, USA).

**1037** *In vitro* Corrosion Behavior of Cast Iron-Platinum Magnetic Alloys. K. HAI\*, I. WATANABE, Y. TANAKA, K. HISATSUNE, and M. ATSUTA (Nagasaki University, Japan).

**1038** Electrochemical Behavior of Dental Silver Alloys in Citrate-Phosphate Mixed Solution. S. NOMOTO\*, K. YOKOSE, and F. KUWATA (Department of Chemistry, School of Dentistry, Nihon University, Tokyo, Japan).

**1039** Comparison of Corrosion Behaviors of Six Different Ti Materials. C. KUPHASUK\*, C.J. ANDRES, and Y. OSHIDA (Prosthodontics and Dental Materials, Restorative Dentistry, Indiana University, Indianapolis, USA).

**1040** Electrochemical Impedance Analysis of Ni-Cr Dental Alloys. M. ROACH\*, D.E. PARSELL, and J.D. BUMGARDNER (Ag & Biological Engineering, Mississippi State University; and Department of Restorative Dentistry, University of Mississippi Medical Center, USA).

**1041** Application of Electrochemical Impedance Spectroscopy to High-palladium Alloys. D. SUN\*, P. MONAGHAN, and W.A. BRANTLEY (Ohio State University College of Dentistry, Columbus, USA).

**1042** Electrochemical Characteristics of Ti/TiN Coated on Ti-6Al-4V Alloy by EB-PVD. H.C. CHOE and Y.M. KO\* (Kwang Yang College and Chpsun University, Kwangju, Korea).

**1043** Effect of  $S^{2-}$  Ion in Artificial Saliva on Tarnish and Corrosion Resistance of Dental Noble Metal Alloys. B.S. LIM\* and C.W. KIM (Department of Dental Biomaterials, College of Dentistry, Seoul National University, Korea).

**1044** Subsurface Oxidation of Au-Pd-Ag with and without Coating Agent: SEM Analysis. T. TRAINI\*, L. CIAVARELLI, P. DE FAZIO, A. SCARANO, M. PIATTELLI, and S. CAPUTI (Dental School of Chieti, Italy).

**1045** Utility of Standard Electrochemical Tests in Corrosion Evaluation of High-Pd Ceramic Alloys. I. KAWASHIMA\*, D. BERZINS, N.K. SARKAR, and A. PRASAD (LSU School of Dentistry, New Orleans, LA, USA; Health Sciences University of Hokkaido, Japan; and Jeneric-Pentron Incorporated, Wallingford, CT, USA).

**1046** Biocompatibility of Nickel-Chromium Alloys and Multiple-ion Salt Solutions. R.L.W. MESSER\* and L.C. LUCAS (Department of Biomedical Engineering, University of Alabama at Birmingham, USA).

**1047** Accelerated Cytotoxicity Testing of Dental Casting Alloys. S.K. NELSON\*, J.C. WATAHA, and P.E. LOCKWOOD (Medical College of Georgia, Augusta, USA).

**1048** Metal Content of Biopsies from the Neighborhood of Casting Alloys. G. SCHMALZ, P. GARHAMMER, K.-A. HILLER\*, and T. REITINGER (Department of Operative Dentistry and Periodontology, University of Regensburg, Germany).

**1049** Allergen Removal Treatment for Patients with Dental Metal Allergy. H. HAMANO\*, M. MATSUMURA, H. HANI, H. KITAZAKI, K. UOSHIMA, T. MASUDA, S. HASEGAWA, N. SUZUKI, and T. OHYAMA (Department of Prosthodontics II and Department of Stomatognathic Dysfunction, Tokyo Medical and Dental University, Japan).

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**Seq#: 119**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

#### Dental Materials - Miscellaneous Materials

**1050** Microleakage of Copal Varnish-lined Preparations with Etched and Unetched Surfaces. F.A. BERRY\* and D.E. TAN (Loma Linda University, CA, USA).

**1051** Bond Strengths of Adhesive Systems to Primary and Permanent Dentin. P.B.L. NASCIMENTO\*, V.A. MENEZES, A.B.L. NASCIMENTO, and H.M. TEIXEIRA (Caruaru School of Dentistry and Pernambuco School of Dentistry, Brazil).

**1052** Inhibition of Phosphatidic Acid Synthesis by Hydroxyethyl Methacrylate (HEMA). G.B. CAUGHMAN\*, G.S. SCHUSTER, and F.A. RUEGGEBERG (Medical College of Georgia, Augusta, USA).

**1053** Hydroxyethyl Methacrylate (HEMA) Associated Alterations of Cell Phospholipids. G.S. SCHUSTER\*, G.B. CAUGHMAN, F.A. RUEGGEBERG, C.A. LEFEBVRE, and R.M. CIBIRKA (Medical College of Georgia, Augusta, USA).

**1054** TEM Study on Microstructure and Magnetic Structure of Fe-Pt Magnets. Y. TANAKA\*, I. WATANABE, K. UDOH, M. NAKANO, H. FUKUNAGA, M. ATSUTA, and H. HISATSUNE (Nagasaki University, Japan).

**1055** Attractive Force of Castable Iron-Platinum Magnetic Alloys to Dental Magnets. I. WATANABE\*, Y. TANAKA, K. UDOH, M. NAKANO, H. FUKUNAGA, K. HISATSUNE, and M. ATSUTA (Nagasaki University, Japan).

**1056** Performance of Handpieces Subjected to Simulated Clinical Use and Sterilization. D. LEONARD\* (United States Air Force Dental Investigation Service, Brooks Air Force Base, TX, USA).

**1057** Effect of Thermal Treatment on Mechanical Strength of Electroformed Gold. F.-J. FABER\* (School of Dentistry, University of Cologne, Germany).

**1058** Considerations in Measuring Electrical Potentials of Metallic Restorations *in vivo*. E. SUTOW\*, W.A. MAILLET, J.C.

TAYLOR, K.L. HANRAHAN, G.C. HALL, and K. HARANDI (Dalhousie University, Halifax, Nova Scotia, Canada).

**1059** Fracture Resistance of Endodontically Treated Premolars Restored with Paraposts or Coronal-Radicular Amalgam. D.C. WILSON\*, K.E. DIEFENDERFER, and A.J. CERTOSIMO (Naval Dental School, National Naval Dental Center, Bethesda, MD, USA).

**1060** Computer Modeling of Stress-deformation State of Class II Restorations. A. LEBEDENKO\* and I. LEBEDENKO (Moscow Medical Stomatological Institute, Russia).

**1061** Delivery of Recombinant Human Bone Morphogenetic Protein-2 from Methacrylate Systems. M.P. PATEL\*, P. PAVLOVIC, F.J. HUGHES, and M. BRADEN (IRC in Biomedical Materials, Saint Bartholomew's and Royal London School of Medicine and Dentistry, QMW, London, UK).

**Seq#: 120** **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

### Diagnostic Systems - Cancer/Pathology

**1062** Incidence of Adenomatoid Odontogenic Tumor in a Biopsy Service. S. DAS\* and A.K. DAS (Department of Pediatric Dentistry, University of Illinois at Chicago, USA).

**1063** Intra-oral Digital Imaging for Documentation of Recurrent Aphthous Ulcer Healing. J.B. LUDLOW\*, M.J. KUTCHER, A.D. SAMUELSON, and S. PUSEK (University of North Carolina, Chapel Hill, USA).

**1064** Bone Scintigraphic Analysis of Distant Metastasis from Oral Malignancy. T. KATADA\*, M. TSUCHIMOCCHI, Y. SASAKI, K. HAYAMA, T. EGUCHI, and S. WADA (Department of Oral and Maxillofacial Radiology, Nippon Dental University School of Dentistry at Niigata, Japan).

**1065** Veteran Recruitment for Study of an Oral Cancer Diagnostic Aid. D.A. KESSLER\*, R.S. FELDMAN, and T. MCCOLLIAN (VAMC; SDM; and University of Pennsylvania, Philadelphia, USA).

**1066** Systemic Diseases in Patients with Oral Lichen Planus. A. KOBAYASHI\*, T. SUZUKI, E. NISHIZAWA, S. HASHIMOTO, E. FUJII, T. AMAGASA, and K. KOBAYASHI (Tokyo Medical and Dental University, Japan).

**1067** Clinical and AgNOR Aspects of Central and Peripheral Oral Lesions. E. MORAES\*, E. HILGERT, L.A.G. CABRAL, and A. SOUZA (FOSJC-UNESP, São Paulo, Brazil).

**1068** Diagnostic Patterns in Pemphigus Vulgaris Patients. D.A. ETTLIN\*, C.D. DAWSON, D.E. WOJTOWICZ, S. AMIRSOLTANI, and A. KOERBER (Northwestern University Dental School, Chicago, IL, USA).

**1069** Comparison of Clinical and Histologic Diagnoses in Periapical Lesions. I.M. KUC, E. PETERS\*, and J. PAN (University of Alberta, Edmonton, Canada).

**1070** Detecting Apical Root Resorption. Digital Radiography Compared with E-speed Film. E. MOULTON\*, R.J. ISAACSON, S.J. LINDAUER, J. BEYER, G. HARTWELL, and L. LEGG (Virginia Commonwealth University School of Dentistry, Richmond, USA).

**1071** Reliability and Validity of a Visual Analogue Scale (VAS) as a Subjective Measure of Xerostomia. S.C.S. PAI\*, E.M. GHEZZI, M.P. BEYRAMIAN, C.C. COTCA, M.L. GOODSON, E.M. ROSIER, K. SHIMOYAMA, and J.A. SHIP (School of Dentistry, University of Michigan, Ann Arbor, USA; University of

Newcastle, UK; and Tokyo Medical and Dental University, Japan).

**1072** DNA Obtained from Buccal Epithelial Cells for PCR Analysis. P.C. TREVILATTO\* and S.R.P. LINE (Faculdade de Odontologia de Piracicaba—UNICAMP, São Paulo, Brazil).

**Seq#: 121** **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

### Behavioral Sciences & Health Services Research - Patients' and Dentists' Perceptions and Satisfaction

**1073** Normative vs. Subjective Treatment Need in Prosthodontics. K. BOENING\*, M. WALTER, and U. SCHUETTE (Department of Prosthetic Dentistry, University of Technology Dresden, Germany).

**1074** Relationship between Self-assessed Oral Health and Professionally Determined Need. M.M. PARKER\*, A.K. MASCARENHAS, and R.C. WHIPPS (Ohio State University, Columbus, USA).

**1075** Perceived Oral Health, Perceived Need, and Clinical Caries in United States Children. B.F. GOOCH\*, E. BELTRÁN, and L.M. KASTE (Centers for Disease Control, Atlanta, GA; and MUSC, Charleston, SC, USA).

**1076** Knowledge, Attitudes, and Perceptions Toward Dental Health in Quebec Children Aged 13-14 Years Old. M. BENIGERI\*, J.-M. BRODEUR, C. DASSA, A. CHARBONNEAU, C. BEDOS, and C. GALARNEAU (GRIS, Université de Montréal, Québec, Canada).

**1077** Children with Relevant Medical History Perceptions of Personal Protective Equipment. A. RIBEIRO\*, L. PRIMO, A. MODESTO, E.R. BUNDZMAN, and I.P.R. SOUZA (Pediatric Dentistry, Federal University of Rio de Janeiro, Brazil).

**1078** Determinants of Oral Health Beliefs of Pakistanis and Indians Living in New York City. G.D. CRUZ\*, J.K. YIP, X. XUE, D.L. GALVIS, M. TAVARES, and R.Z. LeGEROS (New York University College of Dentistry, NY; and Forsyth Dental Center, Boston, MA, USA).

**1079** An Analysis of Patients' Perceptions of Orthodontic Dental Service Quality. J. SUZUKI\*, C.L.B. LAVELLE, T. HASSARD, and R. BAKER (University of Manitoba, Winnipeg, Canada).

**1080** Perception of Malocclusion Severity in 12-year-old Schoolchildren. J.A.M. MIGUEL\* and M.A.O. ALMEIDA (Orthodontic Clinic, State University of Rio de Janeiro, Brazil).

**1081** Malocclusion Severity and Desire for Orthodontic Treatment. J.A.M. MIGUEL and M.A.O. ALMEIDA\* (Orthodontic Clinic, State University of Rio de Janeiro, Brazil).

**1082** Orthodontic Study Casts, Photos, and Complete Records: Agreement among Clinicians. R.J. MILLER\*, S. BAUMRIND, J.A. WEINTRAUB, and S.A. GANSKY (University of California, San Francisco; and University of the Pacific, San Francisco, CA, USA).

**1083** Variation in the Assessment of Malocclusions by Orthodontic Specialists. N. DE FRANCESCO\*, C.L.B. LAVELLE, C. BIREK, and W.A. WILTSHIRE (University of Manitoba, Winnipeg, Canada).

**1084** Tools for Building Graphical Decision Support Systems in Oral Healthcare. P. HAMMOND\* and P. WELLS (Eastman Dental Institute for Oral Health Care Sciences, University of London, UK).

**1085** Patient Satisfaction with Managed Care: A Paradigm for Developing a Survey Instrument. G. KRESS, J.D. SHULMAN, and M. NUNN\* (*Baylor College of Dentistry, Dallas, TX, USA*).

**1086** Validity and Reliability of Dental Satisfaction Questionnaire in Korea. J.I. SON\* and H.K. KWON (*Department of Preventive Dentistry and Public Oral Health, College of Dentistry, Yonsei University, Seoul, Korea*).

**1087** Long-term Satisfaction with Lower Dentures Fixed with Magnets on Dyna-implants. M.J. van der MEULEN\*, T.Y. TJIOOK, F.H.M. KROON, C.M. RIECHELMANN, and P.R. van MENS (*SBT, AMC, ACTA, Amsterdam, The Netherlands*).

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**Seq#: 122**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Behavioral Sciences & Health Services Research - Patient Fear and Anxiety**

**1088** Virtual Reality during Dental Treatment and Child Behavior and Anxiety. C. RICHTER, P.E. SCHNEIDER\*, R.J. MUSSELMAN, C.O. DUMMETT, Jr., and D.M. GARDINER (*Louisiana State University, School of Dentistry, New Orleans, USA*).

**1089** Resources Employed by Dentistry during Dental Treatment in Children. S.C. CHARLIER\*, R.B.C. VIANNA, M.E.P.R. COSTA, and F.T.S.C. FERREIRA (*Pediatric Dentistry, UFRJ, Brazil*).

**1090** Current Trends in Behavior Management Techniques among Practicing Southeastern US Pediatric Dentists. S. NIMMER\*, K. CARR, S. WILSON, J.B. THORNTON, A.A. HAFEZ, and C.F. COX (*University of Alabama at Birmingham Dental School; and Ohio State University, Columbus, USA*).

**1091** Ability of Dentists in the Management of Children. G.M.B. AMBROSANO\*, A.B.A. MORAES, J.E. CORRENTE, and V.C.P. GIATTI (*Faculdade de Odontologia de Piracicaba—UNICAMP; ESALQ—USP—Brazil*).

**1092** Characteristics of Local Anesthetic Use in Pediatric Dentistry. Y. NAKAI\*, P.K. DOMOTO, S.E. COLDWELL, D.S. RAMSAY, and P. MILGROM (*Pediatric Dentistry, Orthodontics, and Dental Public Health Science, University of Washington, Seattle, USA; and Pediatric Dentistry, Okayama University Dental School, Japan*).

**1093** Changes in Dental Anxiety Following Dental Treatment Using Intravenous Conscious Sedation. L.J. DEMPSTER\*, D. LOCKER, and R.P. SWINSON (*Faculty of Dentistry, University of Toronto; and Department of Psychiatry, McMaster University, Hamilton, ON, Canada*).

**1094** Effects of Audiovisual Distraction during Dental Treatment. C. FRERE\*, J. YORTY, D. McNEIL, and R. CROUT (*West Virginia University, Morgantown, USA*).

**1095** Anticipated and Experienced Pain Associated with Root Canal Treatment. C.A. WATKINS\*, H. LOGAN, and H.L. KIRCHNER (*University of Iowa, Iowa City, USA*).

**1096** Dental Anxiety—The Effects of Attachment Patterns, Psychopathologic Traits, and Dentist Characteristics. N. UZIEL\*, R. BAHT, and I. ELI (*School of Dental Medicine, Tel Aviv University, Israel*).

**1097** Differences in Dental Anxiety, Indifference, and Dissatisfaction between Emergency and Pre-appointed Dental Patients. A. LIBERMAN\*, S. REISINE, and S. LEPOWSKY (*School of Dental Medicine, University of Connecticut, Farmington, USA*).

**1098** Fear, Anxiety, and Pain Perception in Dental Emergency Clinic Patients. T.A. SPALLONE\*, F.J. FIRRIOLO, and J.P. SCHEETZ (*School of Dentistry, University of Louisville, KY, USA*).

**1099** Changes in Dental Fear and Utilization. T.A. SMITH\* (*College of Medicine and Dentistry, University of Kentucky, Lexington, USA*).

**1100** Fear of Pain in Oral Surgery Patients. B. WEAVER\*, D. McNEIL, R. GRAVES, D. McKEE, M. ZVOLENSKY, K. CAPEHART, and J.R. WILSON (*West Virginia University, Morgantown, USA*).

**1101** Psychiatric Diagnoses among Self-referred Dental Injection Phobics. T. KAAKKO\*, S.E. COLDWELL, T. GETZ, P. MILGROM, P. ROY-BYRNE, and D.S. RAMSAY (*Dental Public Health Sciences, University of Washington, Seattle, USA*).

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**Seq#: 123**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Implantology - Biomechanics of the Implant Interface**

**1102** Mechanics of Occlusion over Implants: Vectorial Analysis. J. DOS SANTOS, Jr., D. SHIN, and J.L. ONG\* (*Health Science Center, University of Texas, San Antonio, USA*).

**1103** Influence of Mandibular Superstructure Shape on Simulated Implant Strains. T.W.P. KORIOTH\* and A.R. JOHANN (*Minnesota Dental Research Center for Biomaterials & Biomechanics, Department of Oral Sciences, University of Minnesota, Minneapolis, USA*).

**1104** Effects of Splinting on Stress and Strain in Bone around Implants. L.-D. LIN\*, P.L. TSAI, T.M. WANG, J.S. WANG, and L.J. LEU (*Graduate Institute of Dentistry and Department of Civil Engineering, National Taiwan University, ROC*).

**1105** Influence of Implant Shape on Stress in Bone and Implant. S. TADA\*, H. KUSAKARI, R. STEGAROIU, and O. MIYAKAWA (*School of Dentistry, Niigata University, Japan*).

**1106** Influence of Elastic Modulus on Stress in Bone around Implants. R. STEGAROIU\*, H. HUSAKARI, N. TAGUCHI, and O. MIYAKAWA (*School of Dentistry, Niigata University, Japan*).

**1107** Prosthesis Load Transfer with Staggered Buccal-Lingual Implant Placement. H. ITOH\*, A.A. CAPUTO, T. KUROE, and H. NAKAHARA (*School of Dentistry, Tohoku University, Sendai, Japan; UCLA, USA; and Miyagi National Hospital, Japan*).

**1108** Effect of Buccal Cantilever on Staggered Implant Load Transfer. H. ITOH, T. KUROE\*, A.A. CAPUTO, and H. NAKAHARA (*School of Dentistry, Tohoku University, Sendai, Japan; UCLA, USA; and Miyagi National Hospital, Japan*).

**1109** Analysis of Implant Screws Subject to Long-term Occlusal Loading. H. ABOYOUSSEF\*, S. WEINER, M. ALA SAADEGHVAZIRI, A. LUKE, K. McBAIN, and A. ROKHSAR (*New Jersey Dental School and New Jersey Institute of Technology, Newark, USA*).

**1110** Reverse Torque of Ti Plasma-sprayed Screw Implants in Rabbit Bone. G.B. GIRARDELLO\*, P. PASSI, A. ZADRO, and R. PIEROBON (*Dental School, University of Padua; and Private Practitioner, Bassano d/G, Italy*).

**1111** Effects of Push-in Test on Rabbit Bone Surrounding Fixture. S. RIZZO\*, R. RODRIGUEZ Y BAENA, C. BRUSOTTI, and D. ZAFFE (*School of Dentistry, University of Pavia; and Department for Med. and Morphol. Sci., University of Modena, Italy*).

**1112** Microhardness Measurement of Cortical Bone around Dental Implants. C.M. STANFORD, S. HOYER\*, Y.L. CHANG, and J.C. KELLER (*Dows Institute for Dental Research, University of Iowa, Iowa City, USA*).

**1113** Bone Anatomy Supporting Three Different Implants in Baboon Jaws at Six Months. A.B. CARR\*, D.A. GERARD, and P.E. LARSEN (*Ohio State University College of Dentistry, Columbus; and Medical Center, University of Tennessee at Knoxville, USA*).

**1114** Clinical Analysis of Immediately Loaded Machined Implants in Man. L. PITASSO\*, M. PIATTELLI, A. SCARANO, F. WEISZ, and A. PIATTELLI (*Dental School, University of Chieti, Italy*).

**1115** Effect of IMC on the Screw-retained IMZ Implant Prosthesis. I. UNO\*, H. IJIMA, F. WATANABE, and Y. HATA (*School of Dentistry, The Nippon Dental University, Niigata, Japan*).

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**Seq#: 124**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

### **Implantology - Biomechanics of Load Transfer and Surface Chemistry**

**1116** Osteoblast Responses to Ti Treated with Silicone Quaternary Ammonium Salt Solution. P. CHANG\*, B.K. NORLING, K. MA, S. ANDREWS, R. CAVIN, and J.L. ONG (*University of Texas Health Science Center, San Antonio, USA*).

**1117** The Influence of Micro-current Stimulation on Bone Formation in the Rat. S. YAMAMOTO\*, A. YOKOYAMA, T. KAWASAKI, and T. KOHGO (*Departments of Prosthetic Dentistry and Oral Pathology, School of Dentistry, Hokkaido University, Sapporo, Japan*).

**1118** Continuum Damage Mechanics and the Behavior of Bone. W. WINTER\* and S. HECKMANN (*Departments of Mechanics and Prosthodontics, Dental Clinic, University of Erlangen-Nuremberg, Germany*).

**1119** Bone Vitality in Regenerated and Reimplanted Primate Mandibular Ridges. J. WARNER\*, D.L. KOTH, J.E. LEMONS, and M.E. FRITZ (*University of Alabama at Birmingham; and Yerkes Primate Center, Emory University, Atlanta, GA, USA*).

**1120** Three-dimensional Finite Element Analysis of Four Designs of a High-strength Silicon Nitride Implant. S. LIN\*, R.Z. LeGEROS, S. SHI, and J.P. LeGEROS (*New York University College of Dentistry, NY, USA*).

**1121** A Mimic Osseointegrated Implant Model for 3D FEA. Y. SATO\*, N. SHINDOI, M. WADAMOTO, and Y. AKAGAWA (*Department of Removable Prosthodontics, Hiroshima University, Japan*).

**1122** Optimal Design of Dental Implants Using Finite Element Analysis. C.-T. LIN\*, S.-Y. LEE, J.-H. KE, L.-D. WU, and H.-C. CHENG (*Graduate Institute of Oral Rehabilitation Sciences, Taipei Medical College, Taiwan, ROC*).

**1123** Axial and Lateral Mobility of Standard vs. Experimental Brånemark Fixtures. C. LIU and J.B. BRUNSKI\* (*Rensselaer Polytechnic Institute, Troy, NY, USA*).

**1124** Evaluation of the Bone-Fixture Biomechanical Interface. R. RODRIGUEZ Y BAENA\*, S. RIZZO, C. BRUSOTTI, V. QUAGLINI, M. SONCINI, and R. PIETRABISSA (*School of Dentistry, Pavia; and Laboratory of Biol. Struct. Mech., Politec. of Milano, Italy*).

**1125** Clinical and Histological Result in Immediately Loading Implant in Man. M. DEGIDI\*, A. SCARANO, and A. PIATTELLI (*Dental School, University of Chieti, Italy*).

**1126** Bone Response in Rabbit to Machined and RBM Titanium Implants. M. PIATTELLI\*, A. SCARANO, M. QUARANTA, G. PETRONE, and A. PIATTELLI (*Dental School, University of Chieti, Italy*).

**1127** Effects of 99.9% Pure Titanium to Bonding with Bone. S. CHO\* and S. YUN (*Kyung Pook National University, Tae-Ku, Korea*).

**1128** Microscopic Visualization and Morphometry of Plasma-sprayed Implant Surfaces. U. WAHLMANN\*, K.A. GRÖTZ, H. GOETZ, B. AL NAWAS, H. DUSCHNER, and W. WAGNER (*Clinic of Maxillofacial Surgery, and Applied Structure and Microanalysis, University of Mainz, Germany*).

**1129** Survival Rate for 5mm Wide and 6mm Length Fixture. S. YOON\* and S. CHO (*Kyung Pook National University, Tae-Ku, Korea*).

**1130** Aluminum Trioxide Implants Have No Effect on Reproductive Potential. O. ZELIĆ\* and P.C. LEKIC (*Faculty of Stomatology, University of Belgrade, Yugoslavia; and Faculty of Dentistry, University of Manitoba, Winnipeg, Canada*).

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**Seq#: 125**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

### **Cariology Research - Caries – Risk Factors**

**1131** DMFS in HIV+ Children: Three-year Findings. N. TOFSKY\*, E.M. NELSON, R.N. LOPEZ, and R.V. KATZ (*UMDNJ-Dental School, Newark; and School of Dental Medicine, University of Connecticut, Farmington, USA*).

**1132** Oral Health Perception in HIV+/AIDS Brazilian Patients. B.A. WAGNER\*, S.M. FERREIRA, A. SILVA, Jr., M. PERES, and A.S. CARDOSO (*IOUGF/FO (Department of Oral Diagnosis), NESC/UFRJ, Brazil*).

**1133** Dental Caries and Blood Lead Levels in the United States. M.E. MOSS\*, B.P. LANPHEAR, and P. AUINGER (*University of Rochester, NY; and University of Cincinnati, OH, USA*).

**1134** Socio-economic Variation in Caries Increment by Differing Exposure to Fluoridated Water. J. ARMFIELD\*, A.J. SPENCER, G.D. SLADE, and M.J. DAVIES (*University of Adelaide, South Australia; and University of North Carolina, Chapel Hill, USA*).

**1135** Evaluation of a Program to Prevent Early Childhood Caries. G. ANGELOS, J.P. BROWN\*, D. McMAHON, and K. SHETTY (*Brownsville Community Health Center, and University of Texas HSC at San Antonio, USA*).

**1136** Caries Status and Toothbrushing Attitude among Italian Elementary Schoolchildren. M.F. VALENTINO\* and E. FANCELLO (*Private practice, Milan; and University of Bologna, Italy*).

**1137** Dental Plaque Composition, Sugar Exposure, and Dental Caries Patterns in Pre-school Children. L. MELO dos SANTOS, S.B. FRANCISCO, J.A. CURY, and M. NOBRE dos SANTOS\* (*Piracicaba Faculty of Dentistry, UNICAMP, Brazil*).

**1138** Dental Caries in Children with Respiratory Tract Diseases and Allergy. J.A.T.L. GUIMARÃES and M.F.deA. SILVA\* (*Laboratory of Preventive Dentistry, Federal University of Alagoas, Brazil*).



**1139** Prevalence and Risk Indicators for Caries High-risk Subjects. A. SEGOVIA\*, M. GUTIÉRREZ, R. ESTRELLA, A. VALLEJOS, S. PÉREZ, and G. JIMÉNEZ (*Dentistry Faculty, University of Campeche-IMSS, México*).

**1140** Dental Caries Index in Epilepsy Patients with Anticonvulsant Drugs Monotherapy. C.C. LÓPEZ\*, M.D. GALVAN, R. ESPINOSA, M. ARAIZA, R. LÓPEZ, and S. PONCE (*Department of Odontopediatria, Department de Neurología, Hospital Infantil de México Federico Gómez y Fac. de Odontología, UNAM, México*).

**1141** Caries from Breastfeeding. A. ROSENBLATT\*, J.P.T. OLIVEIRA, G.C.A. SILVEIRA, and M.L.A. PONTUAL (*Preventive and Social Dentistry, University of Pernambuco, Brazil*).

**1142** Analysis of Risk Factors Influencing the Development of Early Childhood Caries. S.C. MITCHELL\*, Y. LI, H.W. WIENER, and P.W. CAUFIELD (*Specialized Caries Research Center, University of Alabama at Birmingham, USA*).

**1143** Relationship between Caries Experience and Between-meals Intake Pattern of Children. Y.H. LEE\* and H.K. KWON (*Department of Preventive Dentistry and Public Oral Health, College of Dentistry, Yonsei University, Seoul, Korea*).

**1144** The Effects of Feeding Practices and Oral Hygiene on Caries in Infants—Brazil/Natal. M.S.C.F. ALVES\* and L.M. CERQUEIRA (*UFRN-CMOS, Natal-RN, Brazil*).

**1145** Nutritional Status and Calorie Consumption of Venezuelan Pre-school Children with Rampant Caries. J. FLORES\*, A. AULAR, and A.M. ACEVEDO (*Faculty of Dentistry and Medicine, Central University of Venezuela, Caracas*).

**1146** Prevalence of Severe Caries and Risk Indicators. G. JIMÉNEZ\*, G. JIMÉNEZ, L. HERRERA, M. ZAZUETA, L. BARONI, and M. GUTIÉRREZ (*Faculty of Dentistry, University of Campeche, Mexico*).

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**Seq#: 126**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Oral/Dental Hygiene - Various Chemical Agents, Tooth Whitening, and Malodor**

**1147** Antibacterial Effect of Cetylpyridinium Chloride in a Non-ionic Surfactant Solution. K. MUKASA\*, T. HORIUCHI, K. SHIBUYA, T. YOKOO, Y. YAMAZAKI, and K. KANEKO (*Oral-Care Research Laboratories, Lion Corporation, Tokyo, Japan*).

**1148** Nine-month Results of a Mouthwash Study in the Very Old. A. ÄIKÄS\*, P. KALLIO, and J.H. MEURMAN (*Institute of Dentistry, University of Helsinki, Finland*).

**1149** Factors Influencing Mouthwash Rinsing Time. J. STEPHENS\*, C.A. MUNOZ, J. KETTERING, M. HOFFER, N. MELENDY, and T. WINDEMUTH (*Loma Linda University School of Dentistry, CA, USA*).

**1150** Comparison of Mouthrinses and Flossing on Residual Plaque after Toothbrushing. K.R. DAVIDSON\*, M.S. PUTT, C.J. KLEBER, R.B. TRUELOVE, and D.R. WILLIAMS (*Indiana-Purdue University, Fort Wayne; and Unilever HPC, Trumbull, CT, USA*).

**1151** Effects of Mouthrinses on Residual Plaque Following Toothbrushing and Flossing. J.L. MILLEMAN\*, M.S. PUTT, K.R. DAVIDSON, R.B. TRUELOVE, and D.R. WILLIAMS

(*Indiana-Purdue University, Fort Wayne; and Unilever HPC, Trumbull, CT, USA*).

**1152** Biological Inhibition of Tongue-coating Accumulation. K. YAEGAKI\* and J.M. COIL (*Preventive Dentistry, Tsurumi University, Japan; and Breath Testing Clinic, University of British Columbia, Vancouver, Canada*).

**1153** Clinical Effect of Carbamide/Xylitol Chewing Gum on Plaque Formation. C.J. KLEBER\*, K.R. DAVIDSON, J.L. MILLEMAN, and M.S. PUTT (*Health Science Research Center, Indiana University—Purdue University, Fort Wayne, USA*).

**1154** Interproximal Plaque Control with Chlorhexidine-impregnated Toothpicks. F.L. PILLON\* and R.V. OPPERMANN (*Department of Periodontology, ULBRA, Porto Alegre, Brazil*).

**1155** Testing for Erosiveness of Oral Hygiene Products. M. VESTERINEN\*, E. RANTANEN, V.-M. TIAINEN, D. BIRKHED, and J.H. MEURMAN (*Institute of Dentistry and Department of Physics, University of Helsinki, Finland; and Faculty of Dentistry, University of Göteborg, Sweden*).

**1156** Remineralization Effect of Enamel on Excessive Soft-cola Drinkers. C.A. MUNOZ\*, J.R. DUNN, W. ZHANG, L. SCHLUNT, C.W. TRIOL, and A.E. WINSTON (*Loma Linda University, CA; and Enamelon, Inc., NJ, USA*).

**1157** Use of a Whitening Dentifrice for Control of Chlorhexidine Stain. T.S.I. TILLISS\* (*University of Colorado, Denver, USA*).

**1158** Photo-induced Stain Removal in Bovine Enamel. R.E. MONTGOMERY\* and S.A. NATHOO (*OraCeutical LLC, Monterey, MA, USA*).

**1159** Comparison of Two Tooth-bleaching Regimens Using 10% Carbamide Peroxide. C.L. POORE, A.M. MADDUX, M.M. CRISANTI\*, M.K. ANASTASIA, and M.L. BOSMA (*Procter & Gamble Company, Mason, OH; and Hill Top Research, Inc., Cincinnati, OH, USA*).

**1160** Survey of Halitosis in Dental Patients. Y. MAO\*, H. MALMSTRÖM, D.T. ZERO, M.E. MOSS, and H. LI (*Eastman Department of Dentistry, School of Medicine and Dentistry, Clinical University of Rochester, NY, USA*).

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**Seq#: 127**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Mineralized Tissue - Dentin**

**1161** Isolation and Identification of Human Dentin Sialoprotein. S.R. CHANG\*, K. GU, R.B. RUTHERFORD, and B.H. CLARKSON (*School of Dentistry, University of Michigan, Ann Arbor, USA*).

**1162** Healthy and Altered Forms of Dentin by Micro FTIR. J.S. PARK\*, P.K. UPATHAM, L. GEE, S.J. MARSHALL, and J.M. WHITE (*University of California, San Francisco, USA*).

**1163** DMP2 Mutations Found in Dentinogenesis Imperfecta Type II (DGI-II). S.R. THOTAKURA\*, T. MAH, R. SRINIVASAN, Y. TAKAGI, A. VEIS, and A. GEORGE (*Northwestern University, Chicago, IL, USA; and Tokyo Medical and Dental School, Japan*).

**1164** Circular Dichroism of Recombinant DMP1 Shows Structure Changes with CaCl<sub>2</sub>. J. MALONE\*, B. CHEN, A. VEIS, and A. GEORGE (*Northwestern University Dental School, Chicago, IL, USA*).

**1165** Characterization of Collagen Cross-linking in Bovine Dentin. M. YAMAUCHI\*, G.S. CHANDLER, K. UZAWA, and

H. CHENG (*Dental Research Center, University of North Carolina, Chapel Hill, USA*).

**1166** Dentin Phosphoproteins in Zebrafish. C. SFEIR\*, S. BUTLER, E. LIN, and A. VEIS (*Northwestern University, Chicago, IL, USA*).

**1167** Vickers Microhardness Profile of the Human Dentin-enamel Junction. S.N. WHITE\*, Z. YU, Z.C. LI, M.L. SNEAD, W. LUO, M.L. PAINE, M. SARIKAYA, and H. FONG (*Center for Craniofacial Molecular Biology, University of Southern California; and University of Washington, Seattle, USA*).

**1168** Treatment of Hypersensitive Dentin with Different Potassium Oxalate Formulations: A Clinical Study. J.C. PEREIRA and A.C.B.F. MARTINELLI\* (*Bauru Dental School, University of São Paulo, Brazil*).

**1169** *In vitro* Effect of KOx-based Desensitizing Agents on Hydraulic Conductance of Human Dentin, Submitted to Different Surface Treatments. J.C. PEREIRA\* and A.D. SEGALA (*Bauru Dental School, University of São Paulo, Brazil*).

**1170** Spatial Variation in Micromechanical Properties of Dentin Using AFM/Picoindentation. S. TSAI, R.B. RUTHERFORD, B.H. CLARKSON, and D.H. KOHN\* (*University of Michigan, Ann Arbor, USA*).

**1171** Shear Punch Instrument for Measuring Shear Properties in Dentin. D.L. HAUPT\* and J.H. KINNEY (*Lawrence Livermore National Laboratory, CA, USA*).

**1172** Reflectance Theory Applied to Layers of Human Enamel on Dentin. E.Y. KANG, J.C. RAGAIN, W.M. JOHNSTON, and M. RAJ\* (*College of Dentistry, Ohio State University, Columbus; and Naval Dental Research Institute, Great Lakes, IL, USA*).

**1173** Thermal Analysis of Root and Coronal Dentin Treated with NaF. R. MONGIORGI, V. MINGUZZI, G. VALDRÉ\*, C. PRATI, and G. DOLCI (*Bologna University and "La Sapienza" University, Rome, Italy*).

**1174** Calcitonin Diffusion through Root Canal Dentin Tubules. *In vitro* Study. S. CAMARGO\*, G. GAVINI, C. AUN, J.D. WATERFIELD, and J.M. COIL (*USP-UNICID, São Paulo, Brazil; and University of British Columbia, Vancouver, Canada*).

**1175** Crystal Size of Apatite in Translucent Zone of Root Dentin. L. SARUWATARI\*, S. BAN, and N. OHNO (*School of Dentistry, Aichi-Gakuin University, Nagoya, Japan*).

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**Seq#: 128**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Mineralized Tissue - Bone Cells – Mechanical Stress**

**1176** Osteoclast Resorption of Bone Substitute Biomaterials *in vitro*. A. MORRA, S.E. CUFF, J.C. TAYLOR\*, and G.I. ANDERSON (*Dalhousie University, Halifax, Nova Scotia, Canada*).

**1177** CD8<sup>+</sup> T-Lymphocyte Regulation of Osteoclast Differentiation Involves IL-1b. D. GOMES-MOOSBAUER\*, J.P. BIDWELL, and R.J.S. GALVIN (*School of Dentistry, Indiana University; and Lilly Research Labs, Indianapolis, USA*).

**1178** Effects of the Insulin Antagonist, Fraction V<sub>3</sub>, on Bone Resorption. G.T.F. GALASKO\*, C.E. EVANS, C. WARD, and C.S.B. GALASKO (*SIUE School of Dental Medicine, Alton, IL, USA; and Manchester University, UK*).

**1179** Resorptive Activity and Efficiency of Large and Small Osteoclasts. V.K. SABHARWAL\*, R.L. LEES, T. SHIBUTANI, and J.N.M. HEERSCHÉ (*University of Toronto, Ontario, Canada*).

**1180** Ion Currents in Osteoclasts Isolated from Human Teeth. A.F. WEIDEMA, S.J. DIXON\*, and S.M. SIMS (*Department of Physiology and Division of Oral Biology, University of Western Ontario, London, Canada*).

**1181** Concanavalin A Induces the Production of MMP-2 (Gelatinase B) and MT1-MMP in Osteoblasts and Stimulates Bone Resorption. M. INADA\*, C. MIYAURA, T. OHSHIBA, and K. KAMOI (*Department of Periodontology, School of Dentistry, Nippon Dental University; and Department of Biochemistry, Tokyo University of Pharmacy and Life Science, Japan*).

**1182** Mineral Dissolution Activity of Osteoclasts Cultured on Apatite Thin Film. Y.S. KIM, J.Y. AHN, K.M. WOO\*, H.M. KIM, and J.S. KO (*College of Dentistry, Seoul National University; and College of Dentistry, Kangnung National University, Korea*).

**1183** Effects of Low-dosage Ionizing Radiation on Osteogenic Cell Function *in vitro*. P.M. LOOMER\* and H.C. TENENBAUM (*University of California, San Francisco, USA; and University of Toronto, Ontario, Canada*).

**1184** Electromagnetic Fields Inhibit Gap Junctional Communication and Differentiation of Osteoblasts. J. SUZUKI\*, B.L. UPHAM, and J.E. TROSKO (*Department of Pediatric Dentistry, Hiroshima University, Japan; and Department of Pediatrics and Human Development, Michigan State University, East Lansing, USA*).

**1185** Effect of Aging on Bone Remodeling in Canine Mandibular Condyle. A.P. FERNANDEZ\* and L.P. GARETTO (*Indiana University Schools of Dentistry and Medicine, Indianapolis, USA*).

**1186** Bone Dynamics in Denture-supporting Tissues under Masticatory Pressure. K. OHARA\*, T. SATO, Y. IMAI, M. OKAMOTO, T. HARA, S. MORI, H. SHIRAI, and S. MINAGI (*Department of Removable Prosthodontics, Okayama University Dental School, Japan*).

**1187** Mechanical Stress Increases MMP-9 Expression by Osteoblasts *in vitro*. R. NICHOLS\*, F. NIAGRO, J.L. BORKE, J.M. MAILHOT, J.B. LEWIS, and M. CUENIIN (*United States Army Periodontic Residency, Eisenhower Army Medical Center, Fort Gordon, GA; and Department of Oral Biology, Medical College of Georgia, Augusta, USA*).

**1188** Enhanced Expression of Collagenase-3 Induced by Mechanical Stretching. C.B. WU\*, M.L. SMITH, J.Y. RHO, and K.A. HASTY (*Department of Orthodontics and Anatomy, University of Tennessee, Memphis; and Department of Biomedical Engineering, University of Memphis, TN, USA*).

**1189** Anabolic Response to *in vitro* Micromechanical Loading of Viable Bone. J.G. KUNNEL\*, J.L. GILBERT, and P.H. STERN (*Departments of Pharmacology and Biological Materials, Northwestern University, Chicago, IL, USA*).

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**Seq#: 129**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Salivary Research - Gene Expression/Transfer**

**1190** Changes in Expression and Localization of the First N-glycosylation Gene, ALG7, during Postnatal Development of the Hamster Submandibular Gland. K. LENNON, F. ERKAN\*, D.A. COTANCHE, A.S. MENKO, and M.A. KUKURUZINSKA (*School of Dental Medicine, Boston University; Children's Hospital, Boston, MA; and Thomas Jefferson University, Philadelphia, PA, USA*).

**1191** Protein N-Glycosylation is an Evolutionarily-conserved Requirement for Determining Cell Polarity. K. LENNON\*, L.M. ST. JOHN, and M.A. KUKURUZINSKA (Department of Molecular and Cell Biology, School of Dental Medicine, Boston University, MA, USA).

**1192** Regulated Expression of Submandibular Gland Mucin mRNA in the Developing Mouse Submandibular Gland. T. SHAH\*, J. HU, and R.I. COUWENHOVEN (Department of Oral Pathology, Dental School, University of Maryland, Baltimore, USA).

**1193** Expression of Human Mucin Genes in Normal and Tumor Salivary Glands. S.H. KHAN\*, A. AGUIRRE, M. ZEID, and L.A. BOBEK (Departments of Oral Biology and Oral Diagnostic Science, State University of New York, Buffalo; and Pathology, Buffalo General Hospital, NY, USA).

**1194** Genomic Structure of the Rat SmgB and Psp Salivary Protein Genes. L. MIRELS\* and N. GUPTA (University of California, Berkeley, USA).

**1195** IGF-1 Expression was Reduced in Aged SAM Submandibular Gland. Y. KAMINO\*, F. TANAKA, H. NAGURA, M. KIYAMA, and Y. ABIKO (Nihon University School of Dentistry at Matsudo, Chiba, Japan).

**1196** Expression of Human Mismatch Repair Gene hMSH2 in Benign and Malignant Tumors of Salivary Glands. S. TETÈ\*, G. CASTRILLI, L. ARTESE, A. FABIANO, A. PIATTELLI, and M. PIATTELLI (Department of Oncology, University of Chieti; Ospedale Fatebenefratelli, Rome; and Dental School, University of Chieti, Italy).

**1197** mRNA Expression of Antioxidant Enzymes in Normal and Tumor Tissue of Parotid Glands. J. HOWELL\*, G.E. PETERS, L.J. WINDSOR, B. RAHEMTULLA, and F. RAHEMTULLA (University of Alabama School of Dentistry and Medicine, Birmingham, USA).

**1198** Epithelial Cytokine mRNA Expression in Labial Minor Salivary Glands of Healthy Volunteers. M. BRENNAN\* and P.C. FOX (GTTB, NIDCR/NIH, Bethesda, MD, USA).

**1199** The Expression of Oncogene HER-2/*neu* in Stimulated Whole and Glandular Saliva. N.R. CHOUNARD\*, L.G. BIGLER, C.F. STRECKFUS, M.R. PFEIFER, and T.M. DELLINGER (University of Mississippi Medical Center, Jackson, USA).

**1200** Effects of Incisor Separation on Gene Expression of Adrenoceptor Subtypes. F. OHTA\*, T. NISHIURA, T. ITOH, M. MATSUMOTO, and K. ABE (Fukuoka Dental College, Japan).

**1201** Cationic Liposome-mediated Gene Transfer to Salivary Cells *in vitro*. L. BACCAGLINI\*, C.M. GOLDSMITH, C.J. WHEELER, and B.J. BAUM (National Institute of Dental and Craniofacial Research, National Institutes of Health, Bethesda, MD; and Vical Inc., San Diego, CA, USA).

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**Seq#: 130**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Microbiology/Immunology - *Candida* and *Lactobacillus***

**1202** Adherence of *Candida albicans* and other *Candida* Species to Mucosal Epithelial Cells. B. DOROCKA-BOBKOWSKA and J. OTULAKOWSKA\* (Department of Prosthetic Dentistry, K. Marcinkowski University of Medical Sciences, Poznań, Poland).

**1203** Factors Affecting *in vitro* Adhesion of *Candida albicans* to Diabetic Buccal Epithelial Cells. W.A. COULTER\*, A.M.

WILLIS, and P.-J. LAMEY (School of Clinical Dentistry, The Queen's University, Belfast, Northern Ireland).

**1204** Coaggregation Studies of *Candida dubliniensis*. M.A. JABRA-RIZK\*, A.M.A. BAQUI, J.I. KELLEY, W.A. FALKLER, Jr., and T.F. MEILLER (University of Maryland Dental School, Baltimore, USA).

**1205** Comparison of Putative Virulence Factors of Oral *Candida dubliniensis* and *Candida albicans* Isolates. J. HANNULA\*, M. SAARELA, B. DOGAN, P. KOUKILA-KÄHKÖLÄ, J. PAATSAMA, S. PIRINEN, J. PERHEENTUPA, and S. ASIKAINEN (University of Helsinki, Finland).

**1206** Pro-inflammatory Cytokine Responses of Fibroblasts to *Candida albicans* Infection. A.I. DONGARI-BAGTZOGLU, K. WEN\*, and I. LAMSTER (Division of Periodontics, Columbia University, NY, USA).

**1207** The *in vitro* Post-antifungal Effect of Nystatin on *Candida* Species of Oral Origin. A.N.B. ELLEPOLA\* and L.P. SAMARANAYAKE (Faculty of Dentistry, University of Hong Kong, China).

**1208** Lactoperoxidase Antimicrobial Activity against *Candida albicans*. P.A. SAMANT\*, M.M. JEFFERSON, and E.L. THOMAS (Dental Research Center and Biochemistry Department, University of Tennessee, Memphis, USA).

**1209** A MADS-box Binding Site May Be the Universal Regulator of Phase-specific Genes in *Candida albicans*. M. NGUYEN\*, S.R. LOCKHART, and D.R. SOLL (College of Dentistry, University of Iowa, Iowa City, USA).

**1210** Genetic Variation within Clinical Isolates of *Candida dubliniensis*. B.J. HARRINGTON\*, S.F. GEE, G.P. MORAN, D.C. COLEMAN, and D.J. SULLIVAN (School of Dental Science, University of Dublin, Trinity College, Ireland).

**1211** Molecular Types of Oral *Candida albicans* Isolates and Relatedness to Phenotypic Features. R.S. DASANAYAKE\*, A.N.B. ELLEPOLA, and L.P. SAMARANAYAKE (Faculty of Dentistry, University of Hong Kong).

**1212** Proteinase Activity and Switching of *Candida* Varies in HIV+ Patients. K. VARGAS\* and D.R. SOLL (Dows Institute for Dental Research and Biological Sciences, University of Iowa, Iowa City, USA).

**1213** Oral Yeast and Coliforms Carriage of Tibetans in Lhasa. W.K. LEUNG\*, L.J. JIN, L.P. SAMARANAYAKE, K.Y. ZEE, E.C.M. LO, and E.F. CORBET (Faculty of Dentistry, University of Hong Kong).

**1214** Acquisition of *L. acidophilus* and *L. casei* in Infants. Z. LU\*, Y. LI, W. LEE, and P.W. CAUFIELD (Special Caries Research Center, University of Alabama at Birmingham, USA).

**1215** The Effect of Stannous Fluoride on Intracellular Polysaccharide Production in *L. salivarius*. L.P.-Y. HUANG\*, R. COLES, B. MACÊDO, S. VON HAGEN, and G. ROSIVACK (Department of Pediatric Dentistry, NJ Dental School, Newark, USA).

**1216** Phospholipid Analogue Profiles of Some IE and Non-IE *Lactobacillus* Isolates. D.B. DRUCKER\*, V. BOOTE, and D.W.S. HARTY (Dental School and Chemistry Department, University of Manchester, UK; and I.D.R., Sydney, Australia).

**1217** Withdrawn

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**Seq#: 131**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Microbiology/Immunology - Study of *Actinobacillus actinomycetemcomitans***

**1218** Determining *Actinobacillus actinomycetemcomitans* Serotype d by PCR. B. DOGAN\*, M. SAARELA, J. MÄTTÖ, J. HANNULA, and S. ASIKAINEN (Oral Research Laboratory, Institute of Dentistry, University of Helsinki; VTT Biotechnology and Food Research, Espoo, Finland; and Department of Periodontology, Faculty of Dentistry, University of Gazi, Ankara, Turkey).

**1219** Evaluation of *Actinobacillus actinomycetemcomitans* Binding to Fibronectin. M. AYNECHI\*, M.R. NONNEMACHER, and K.F. NOVAK (University of Pittsburgh School of Dental Medicine, PA, USA). (1998 AADR Student Fellowship Recipient)

**1220** Characterization of *Actinobacillus actinomycetemcomitans* Fimbriae. E.S. MCGILL\* and J.K. SPITZNAGEL (Department of Periodontics, University of Maryland, Baltimore; and Baltimore College of Dental Surgery, MD, USA).

**1221** Analysis of Pilin Gene Expression by *Actinobacillus actinomycetemcomitans*. E.S. MCGILL and J.K. SPITZNAGEL\* (Department of Periodontics, University of Maryland, Baltimore; and Baltimore College of Dental Surgery, MD, USA).

**1222** Response of Epithelial Cells to Cytolethal Distending Toxin (CDT)-containing Extracts of *Actinobacillus actinomycetemcomitans*. M. SONG\*, L.S.Y. WAN, J.M. DiRIENZO, and R.P. ELLEN (Faculty of Dentistry, University of Toronto, ON, Canada; and School of Dental Medicine, University of Pennsylvania, Philadelphia, USA).

**1223** Mutational Analysis of a Recombinant Cytolethal Distending Toxin (CDT) from *Actinobacillus actinomycetemcomitans*. M.P.A. MAYER\*, L.C. BUENO, and J.M. DiRIENZO (Department of Microbiology, School of Dental Medicine, University of Pennsylvania, Philadelphia, USA; and Department of Microbiologia, Instituto de Ciências Biomédicas, University of São Paulo, Brazil).

**1224** Characterization of Subcloned *Actinobacillus actinomycetemcomitans* DNA in the Invasion of Epithelial Cells. L.S.Y. WAN\*, G. LEPINE, and R.P. ELLEN (Faculty of Dentistry, University of Toronto, ON, Canada).

**1225** The *Actinobacillus actinomycetemcomitans* *apaH* is Implicated in Invasion of Epithelial Cells. M. SAARELA, J. LIPPMANN\*, D. HUTCHINS MEYER, and P. FIVES-TAYLOR (University of Vermont, Burlington, USA).

**1226** Hyperexpression of Bcl-2 Protein Inhibits *Actinobacillus actinomycetemcomitans* Leukotoxin-induced Apoptosis in Human Target Cells. N. YAMAGUCHI\*, J.M. KOROSTOFF, P.S. HOWARD, I.R. KIEBA, and E.T. LALLY (Leon Levy Research Center for Oral Biology, University of Pennsylvania, Philadelphia, USA).

**1227** Molecular Characterization of a Potential Aa Type V Transport System. K.F. NOVAK\*, M.R. NONNEMACHER, and Y. LIU (School of Dental Medicine, University of Pittsburgh, PA, USA).

**1228** Acquisition by *Actinobacillus actinomycetemcomitans* of a Transitory Resistance to a Lethal Stress Induced by a Non-lethal Stress. F. GOULHEN\*, I. GIRARD, D. GRENIER, and D. MAYRAND (GREB, Université Laval, Québec, Canada).

**1229** Siderophore Activity of Tetracyclines and Its Impact on the Susceptibility of *Actinobacillus actinomycetemcomitans* to These Antibiotics. M.-P. HUOT\*, D. GRENIER, and D. MAYRAND (GREB, Université Laval, Québec, Canada).

**1230** Characterization of the Penicillin Binding Proteins of *Actinobacillus actinomycetemcomitans*. M.K. LOEFFERT\* and

J.K. SPITZNAGEL (Department of Periodontics, University of Maryland, Baltimore; and Baltimore College of Dental Surgery, MD, USA).

**1231** Characterization of Surface Antigens of *Actinobacillus* and *Fusobacterium* by Immunoblotting. R. MINEYAMA\* and K. SAITO (The Nippon Dental University at Niigata, Japan).

**Seq#: 132** **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Microbiology/Immunology - Study of *Prevotella* and *Eikenella* spp**

**1232** Pathways for Amino Acid and Glucose Metabolism by Oral *Prevotella*. N. TAKAHASHI\* and T. YAMADA (Department of Oral Biochemistry, Tohoku University School of Dentistry, Sendai, Japan).

**1233** Adherence and the Profiles of Cell Surface Proteolytic Proteins of *Prevotella*. M. TAMURA\*, Y. HIRANO, and K. HAYASHI (Department of Bacteriology, Nihon University School of Dentistry, Tokyo, Japan).

**1234** Cooperativity in Binding of Human Hemoglobin by *Prevotella intermedia*. G.W. HOLLING\*, C. COX, and D. DRAKE (Colleges of Dentistry and Medicine, University of Iowa, Iowa City, USA). (1997 AADR Student Fellowship Recipient)

**1235** Binding of Peroxidase-Hemoglobin Conjugate by *Prevotella intermedia*. J.C. LIU\*, C. COX, and D. DRAKE (Colleges of Dentistry and Medicine, University of Iowa, Iowa City, USA).

**1236** Further Studies on Hemagglutinating Strains of *Prevotella melaninogenica*. G. HARALDSSON and W.P. HOLBROOK\* (Faculty of Odontology, University of Iceland, Reykjavik).

**1237** Expression of a Putative Hemolysin from *Prevotella intermedia*. J.E. BEEM and K.-P. LEUNG\* (Department of Oral Biology, University of Florida, Gainesville, USA).

**1238** Genetic Analysis of *Prevotella loescheii* Mutants Defective in Coaggregation. J.N. MANCH-CITRON\*, A. DEY, R.J. SCHNEIDER, E. YOZA, and S. TANG (University of Missouri—Kansas City School of Dentistry, USA).

**1239** Investigation on Distribution and Intra-familial Transmission of *Prevotella intermedia*. J. ZHANG\*, M. LIU, and Y. ZHANG (College of Stomatology, West China University of Medical Sciences, Chengdu, Sichuan, China).

**1240** Characterization of the Cytokine-induction Factors Released from *Eikenella corrodens*. H. YUMOTO\*, H. NAKAE, M. YAMADA, S. EBISU, and T. MATSUO (Department of Conservative Dentistry, Tokushima University School of Dentistry; and Faculty of Dentistry, Osaka University, Japan).

**1241** Expression of ICAM-1 on Gingival Epithelial Cells by *Eikenella corrodens*. M. YAMADA\*, H. NAKAE, H. YUMOTO, S. EBISU, and T. MATSUO (School of Dentistry, Tokushima University; and Faculty of Dentistry, Osaka University, Japan).

**1242** PCR and SDS-PAGE Techniques in the Differentiation of *Prevotella intermedia* and *Prevotella nigrescens*. T. PREMARAJ\*, N. KATO, K. FUKUI, H. KATO, and K. WATANABE (Institute of Anaerobic Bacteriology, Gifu University School of Medicine; and Department of Bacteriology, School of Medicine, Kanazawa University, Japan).

**1243** Detection of Putative Tetracycline-resistance Transfer Genes in the *Bacteroides-Prevotella* Group. J. LIU\* and C.B. WALKER (Periodontal Disease Research Center and

Department of Oral Biology, University of Florida, Gainesville, USA).

**1244** Antimicrobial Susceptibilities of *Eikenella corrodens* and *Prevotella intermedia*. N. LUONG\*, C. CHEN, and J. SLOTS (Periodontology, USC School of Dentistry, Los Angeles, CA, USA).

**1245** Cloning of the *Eikenella corrodens* Proline Iminopeptidase and Aspartase Genes. T.L. SELBY, R.P. ALLAKER, and D. DYMOCK\* (Department of Oral & Dental Science, Bristol; and Department of Oral Microbiology, London Hospital Medical College, UK).

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**Seq#: 133 Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Microbiology/Immunology - Dental Unit Waterlines and Handpieces**

**1246** Microbial Colonization of the Water Supply System of Dental Units. H. FRIESE\*, L. PRÖBSTER, and P. HEEG (Departments of Prosthodontic Dentistry and Hospital Infection Control, University of Tübingen, Germany).

**1247** SEM of Dental Unit Water Tubing. L. KRAMER\*, P. BUSH, and P.J. TEMPRO (School of Dental Medicine, University at Buffalo, NY, USA).

**1248** Control of Microbial Biofilms in Dental Unit Waterlines. B.A. SANFORD\*, D.P. KRIEG, H.R. RAWLS, V.L. THOMAS, E.K. ESKEW, G.A. SIEGEL, P.B. SIEGEL, and W.D. WARREN (Biomedical Development Corporation; and School of Dentistry and Department of Microbiology, University of Texas Health Science Center, San Antonio, USA).

**1249** Inhibition of Dental Waterline Biofilms by Commercial and Chemical Regimens. V. OLIVER\* and J.P. BABU (Dental Research Center, University of Tennessee, Memphis, USA).

**1250** Evaluation of General Dental Water Quality in Relationship to Surgery. E.E. PUTNINS, D. DI GIOVANNI, and A. BHULLAR\* (Faculty of Dentistry, University of British Columbia, Vancouver, Canada).

**1251** Comparison of Bacterial Contamination of Dental Unit Water Lines with Copper and Plastic Tubing Used in Restaurant/Grocery Misting Systems. I. BARASH, D. SWIFT, and R. WNEK\* (Micrylium Laboratories, Tempe, AZ, USA).

**1252** Optimization of the Hydroperoxide Ion Treatment of Dental Unit Waterlines. P.A. SHEPHERD\*, M. SHOJAEI, and R.H. STAAT (University of Louisville, KY, USA).

**1253** Comparison of Dentacide™ and Bleach in Treated Dental Unit Waterlines. W.D. WARREN\*, E.K. ESKEW, G.A. SIEGEL, P.B. SIEGEL, V.L. THOMAS, H.R. RAWLS, and B.A. SANFORD (Biomedical Development Corporation; and School of Dentistry and Department of Microbiology, University of Texas Health Science Center, San Antonio, USA).

**1254** Effectiveness of Odyssey Units in Meeting ADA Dental Unit Waterline Goal. C.E. LONG\*, J.M. COMOLLO, D.J. STOKER, B.J. PLOEGER, and R.P. CHRISTENSEN (Clinical Research Associates, Provo, UT, USA).

**1255** Evaluation of the Heterotrophic Plate Count Laboratory Methods. E.E. PUTNINS, L. NOCE, and D. DI GIOVANNI\* (Faculty of Dentistry, University of British Columbia, Vancouver, Canada).

**1256** Effectiveness of an Aerosol Reduction Device for the Air Polisher. K.B. MUZZIN\*, T.B. KING, and C.W. BERRY (Baylor College of Dentistry, Dallas, TX, USA).

**1257** Effect of Powder-free Latex Examination Gloves on Airborne Powder Levels. G. SPACKMAN\*, C.B. HERMESCH, W. DODGE, and A. SALAZAR (University of Texas Health Science Center, San Antonio, USA).

**1258** Comparing Enzyme Indicators and Spores for Monitoring Chemical Vapor Sterilization. M. HEISS\*, J. GORSKI, and A.F. GOLDBERG (University of Illinois at Chicago; Rexam Medical Packaging, Mundelein, IL; NAMSA, Northwood, OH; and Northwestern University, Chicago, IL, USA).

**1259** Durability of 4 Low-speed Handpiece Brands under Repeated Sterilization. D.R. RAWLINGS\*, T. WAHLIN, Z. HOUSER, T. RUMSEY, S.H. WOOLF, and R.P. CHRISTENSEN (Clinical Research Associates, Provo, UT, USA).

**1260** Anti-microbial Action of Electro-chemically Activated Water in Dental Water Lines. J.T. MARAIS\*, V.S. BROZEL, and A. BOTHA (Faculty of Dentistry, Faculty of Biological and Agricultural Sciences, Laboratory for Microscopy and Micro-analysis, University of Pretoria, South Africa).

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**Seq#: 134 Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Periodontal Research – Pathogenesis - Animal Models; Effects of Nicotine**

**1261** Periodontal Damage in Mice Following Chronic Ethanol and Nicotine Exposure. T.E. MADDEN\*, M.L. TAYLOR, T.F. JORGENSEN, A. CONLEY, and B.K. MADDOX (Oregon Health Sciences University and Shriners Hospital for Children, Portland, OR, USA).

**1262** Effect of Nicotine on Oral Squamous Cell Carcinoma OSCC, and Gingival Fibroblasts. C. WHYNOTT\*, L. HANEY, D.A. TIPTON, and M.K. DABBOUS (Dental Research Center, University of Tennessee, Memphis, USA).

**1263** Combined Effects of Smoking and Substance Abuse on the Periodontium. A. KHOCHT\*, S. KELLER, and S. SCHLEIFER (UMDNJ, New Jersey Dental School and New Jersey Medical School, Newark, USA).

**1264** Effect of Nicotine on Gingival Fibroblasts *in vitro*, Apoptosis Mechanism. J. LAHMOUZI\*, F. SIMAIN-SATO, M.P. DEFRESNE, M.C. DEPAUW, E. HEINNEN, and R. LEGRAND (Department of Oral Surgery and Periodontology, University of Liège, Belgium).

**1265** Alterations of Neutrophil F-actin Kinetics by Cigarette Smoke. M. RYDER\*, T. WU, S. KALLAOS, and W. HYUN (University of California, San Francisco, USA).

**1266** Relationship between Smoking and *B. forsythus*, *P. gingivalis*, *P. intermedia*. C. TSAI, J. HODGES, and L. WOLFF\* (School of Dentistry, University of Minnesota, Minneapolis, USA).

**1267** Adhesion of Bacterial Plaque to the Luting Agent of Porcelain Crowns. M. QUARANTA\*, S. DI CARLO, A. SCRASCIA, and F. DI CARLO (Dental School, University of Rome "La Sapienza", Italy).

**1268** Comparison of the Microbiotas on Oral Soft and Hard Tissues. D. MAGER\*, L.A. XIMENEZ-FYVIE, A.D. HAFFAJEE, and S.S. SOCRANSKY (Forsyth Dental Center, Boston, MA, USA).

**1269** Anti-plaque Efficacy of Non-alcoholic Mouthrinse Solutions. N. ARWEILER\*, L. NETUSCHIL, E.-M. WURM, and E. REICH (Department of Periodontology and Institute for Medical Biometrics, Epidemiology, & Informatics, University of the Saarland, Germany).

**1270** Surgically Created Furcation Defects in Dogs. E. MARCANTONIO, Jr., E.S. CHAVES\*, J.A. CIRELLI, C. ROSSA, Jr., E.F. ROCHA, and R.A.C. MARCANTONIO (*UNESP, Araraquara Dental School, São Paulo, Brazil; and University of Pittsburgh, PA, USA*).

**1271** Detection of Unique Genes Expressed in Periodontal Wound Healing. T. OHIRA\*, F. MYOKAI, S. TAKASHIBA, and Y. MURAYAMA (*Department of Periodontology and Endodontology, Okayama University Dental School, Japan*).

**1272** Fibronectin and Laminin-1 during Apical Migration of Rat Junctional Epithelium. E. IOANNIDOU\*, I. KONYUKHOV, and J.W. DEAN, III (*University of Connecticut, Farmington, USA*).

**1273** HLA-B27 Transgenic Rats are Susceptible to Accelerated Alveolar Bone Loss. D.N. TATAKIS\* and P. GUGLIELMONI (*Loma Linda University, CA, USA*).

**1274** Coagulation and Fibrinolytic Activity in Rats with Naturally Occurring Gingivitis. T. SAGAWA\*, M. SHINOHARA, and K. OHURA (*Department of Pharmacology, Osaka Dental University, Japan*).

**1275** Dexamethasone Modulates the Experimental Periodontitis in Rats. U. SKALERIC\* and R. GASPERSIC (*Center for Dental Research, Faculty of Medicine, University of Ljubljana, Slovenia*).

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**Seq#: 135**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Periodontal Research – Pathogenesis -      Gingival  
and Periodontal Fibroblasts**

**1276** Expression of Soluble Factors by Gingival and Periodontal Ligament Fibroblasts. C.R. IRWIN\* and I.C. MACKENZIE (*School of Clinical Dentistry, Queen's University, Belfast; and University of Michigan, Ann Arbor, USA*).

**1277** IL-1b Increases uPA Receptor Expression in Gingival Fibroblasts. N. OGURA\*, Y. ABIKO, and H. NAGURA (*Nihon University of Dentistry at Matsudo, Chiba, Japan*).

**1278** Manganese Stimulates Ca<sup>2+</sup> Mobilization and PGE<sub>2</sub> Release in Gingival Fibroblasts. S. NAKAO\*, Y. OGATA, S. FURUYAMA, and H. SUGIYA (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**1279** Cytokine and Growth Factor Receptor Synthesis in Periodontal Ligament Fibroblasts. C. BOCICARIU\*, J.M. KOROSTOFF, E.J. MACARAK, and P.S. HOWARD (*School of Dental Medicine, University of Pennsylvania, Philadelphia, USA*).

**1280** Mechanical Stretch Alters Matrix Protein big-h3 in Periodontal Ligament Fibroblasts. P.S. HOWARD\*, C. BOCICARIU, U. KUCICH, E.J. MACARAK, J.M. KOROSTOFF, and P. BILLINGS (*School of Dental Medicine, University of Pennsylvania, Philadelphia, USA*).

**1281** Influence of Centrifugal Force on Human Oral Fibroblasts and Osteoblast-like Cells. C. THEILIG\*, A. SAPOTNICK, A. BERND, G. LEYHAUSEN, and W. GEURTSSEN (*Medical University of Hannover; and Department of Dermatology, University Hospital, J.E. Goethe University, Frankfurt, Germany*).

**1282** Impaired Gene Transcription in Periodontal Ligament Cells and Gingival Fibroblasts. M.W. BRAITHWAITE\*, Y. SAWA, and F. NISHIMURA (*Cardinal Bernadin Cancer Center, Stritch School of Medicine, Loyola University of Chicago; Edward Hines, Jr. VA Hospital, USA; School of Dentistry,*

*Hokkaido University; and School of Dentistry, Okayama University, Japan*).

**1283** Roles of HLA Class II Molecules on Fibroblasts. H. OHYAMA\*, S. MATSUSHITA, F. NISHIMURA, K. NARUIISHI, N. KATO, S. TAKASHIBA, and Y. MURAYAMA (*Okayama University and Kumamoto University, Japan*).

**1284** Phenytoin Stimulates Interleukin-6 and Interleukin-8 Production in Human Gingival Fibroblasts. T. MODÉER, H. DOMEIJ\*, I. ANDURÉN, M. MUSTAFA, and G. BRUNIUS (*Department of Paediatric Dentistry, Karolinska Institutet, Huddinge, Sweden*).

**1285** Induction of Interferon-g in Human Gingival Fibroblasts Challenged with Phytohemagglutinin. M. MUSTAFA, B. WONDIMU\*, M. BAKHIET, and T. MODÉER (*Department of Paediatric Dentistry, Karolinska Institutet, Huddinge, Sweden*).

**1286** Effects of Arecoline on Human Periodontal Ligament Cultures *in vitro*. Y.C. CHANG\*, K.W. TAI, M.F. HUANG, P.H. LIAO, and M.Y. CHOU (*School of Dentistry, Chung Shan Medical and Dental College, Taichung, Taiwan, ROC*).

**1287** Expression Manner of SPARC in Human Periodontal-ligament-derived Cells. T. FUJITA\*, H. SHIBA, M. SAKATA, Y. UCHIDA, and H. KURIHARA (*Department of Periodontology & Endodontology, Hiroshima University School of Dentistry, Japan*).

**1288** Effects of Butyrate and Propionate on Human Gingival Fibroblasts. J.H. JENG\* and M.C. CHANG (*School of Dentistry, National Taiwan University; and Team of Biomedical Science, Chang-Gung Institute of Nursing, Taiwan*).

**1289** Effects of Thrombin on the Biological Functions of Human Gingival Fibroblasts. M.C. CHANG\* and J.H. JENG (*Team of Biomedical Science, Chang-Gung Institute of Nursing; and School of Dentistry, National Taiwan University, Taiwan, ROC*).

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**Seq#: 136**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Periodontal Research – Therapy - Root Surface Effects**

**1290** The Effects of Acid Etching with Different Citric Acid Concentrations and Application Times on Dentin Root Surface: A Comparative SEM Study. G. ISIK, B. TARIM, A.A. HAFEZ, F. YALÇIN\*, U. ONAN, and C.F. COX (*Istanbul University, Turkey; and UAB Dental School, Birmingham, AL, USA*).

**1291** A Comparative SEM Study on Dentin Demineralization Using Tetracycline-containing Controlled-release Fibers and Tetracycline-HCl Conditioning. G. ISIK\*, F. YALÇIN, S. INALOZ, F. ERCAN, M. SOYDINC, H. ISSEVER, and U. ONAN (*Istanbul University, Gaziantep University, and Marmara University, Turkey*).

**1292** Tetracycline Demineralization of Dentin Surfaces: A SEM Report on the Effects of Time and Method of Application. G. ISIK, F. YALÇIN, S. INALOZ\*, F. ERCAN, C. BASEGMEZ, H. ISSEVER, and U. ONAN (*Istanbul University, Gaziantep University, and Marmara University, Turkey*).

**1293** SEM Study on the Potential Occluding Properties of Acid Etchants. N.J. MORDAN\*, D.G. GILLAM, and A.D. SINODINOU (*Department of Periodontology and Electron Microscopy Unit, Eastman Dental Institute, University of London, UK*).

**1294** *In vitro* Effects of Everyday Stimuli on Selected Sealants/Varnishes. P.A. BURGESS\*, D.G. GILLAM, and N.J.

MORDAN (*Department of Periodontology and Electron Microscopy Unit, Eastman Dental Institute, University of London, UK*).

**1295** Surface and Sub-surface Effects of Selected Primers: SEM Study. A.D. SINODINOU, D.G. GILLAM\*, and N.J. MORDAN (*Department of Periodontology, Eastman Dental Institute, University of London, UK*).

**1296** *In vitro* Quantification of Desensitizing Agents Using Digital Image Analysis. T.R. AHMED\*, D.G. GILLAM, N.J. MORDAN, and M.S. GILTHORPE (*Eastman Dental Institute, University of London, UK*).

**1297** Evaluation of Dentin Hypersensitivity in Subjects Recruited for Clinical Trials. D.G. GILLAM, A. ARIS\*, J.S. BULMAN, and H.N. NEWMAN (*Eastman Dental Institute, University of London, UK*).

**1298** Ultrasonic Augmentation of Chlorhexidine Substantivity to Surface-characterized Dense Hydroxyapatite. M.J. GOULDING\*, R.E. BAIER, and R.J. NISENGARD (*State University of New York at Buffalo, USA; and Niagara College, Welland, Ontario, Canada*).

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**Seq#: 137**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Periodontal Research – Diagnosis/Epidemiology - Systemic Diseases, Genetics, and Periodontal Diseases**

**1299** Systemic Factors and Graded Periodontal Disease. N. MIRMADJLESSI, N. BISSADA\*, S. NELSON, and S. WOTMAN (*Case Western Reserve University, Cleveland, OH, USA*).

**1300** Relation between Periodontal Condition and Coronary Heart Disease. F. MORRIS, C. BUCKNALL, N. PATEL, R.F. WILSON, and F.P. ASHLEY\* (*Periodontology and Cardiology, GKT Dental Institute, King's College, London, UK*).

**1301** Association of Periodontitis and Cardiovascular Disease in an Outpatient Population. G. DI TURSI\*, J.A. KATANCIK, and S.G. CIANCIO (*Veterans' Administration Medical Center, Buffalo, NY, USA*).

**1302** Hyperlipidemia—A Possible Risk Indicator for Periodontitis—Preliminary Results of a Pilot Study. B. NOACK\* and Th. HOFFMANN (*Department of Periodontology, Medical Faculty of TU Dresden, Germany*).

**1303** The Relationship between Adult Periodontitis and the Prevalence of Hypertension. B. ROOS\*, H. GREENWELL, C. DRISKO, and J.L. GOLDSMITH (*University of Louisville, Kentucky, USA*).

**1304** Bacteremia Due to Periodontal Probing in Periodontitis and Gingivitis Patients. C. DALY\*, D. MITCHELL, J. HIGHFIELD, D. GROSSBERG, and D. STEWART (*Faculty of Dentistry, University of Sydney; Centre for Infectious Diseases and Microbiology, Westmead Hospital; and Dental Sedation Unit, Westmead Hospital, Australia*).

**1305** Tobacco Smoking and Supragingival Calculus. J. BERGSTRÖM\* (*Karolinska Institute, Stockholm, Sweden*).

**1306** The Histological Evaluation of Gingival Hyperplasia Associated with Nifedipine. M. MATSUE\*, S. HARAYAMA, H. ENDO, F. YAMANOUCHI, K. HOZUMI, H. YAMAMOTO, and I. MATSUE (*Department of Periodontology, Pathology Research Institute, Nihon University School of Dentistry at Matsudo, Japan*).

**1307** Periodontal Status in Type 1 Diabetes. A 7-year Follow-up Study. G. CAMPUS\*, A. LUMBAU, M. BOSSÙ, A. MANCONI, and P. FRESU (*Department of Metabolic Diseases, Dental Institute, Institute of Clinica Medica, University of Sassari, Italy*).

**1308** PCR Detection of Periodontal Pathogens from Diabetic Patients. A. ASHIMOTO\*, T. TANAKA, S. ISHIKURA, K. RYOKE, and C. CHEN (*OMFS, Faculty of Medicine, Tottori University, Yonago, Japan; and Periodontology, USC School of Dentistry, Los Angeles, CA, USA*).

**1309** IL-1 Genotype Associations with Periodontal Pathogens. D. ETIENNE\*, B. SCHWEITZ, and M. DAVARPANAH (*Department of Periodontology, University Denis Diderot—Paris 7; and Department of Periodontology, University Paris 6, France*).

**1310** Use of Salivary DNA for Interleukin-1 Polymorphism Screening. J. LYMAN\*, L.L. DAVID, and T.E. MADDEN (*Oregon Health Sciences University, Portland, USA*).

**1311** Prevalence and Severity of Periodontal Disease in a Population HIV+/AIDS. S.M. FERREIRA\*, R.G. FISCHER, G. VILLORIA, L.S. GONÇALVES, and L.H. CARVALHO (*Gama Filho, Rio de Janeiro Federal University; and Rio de Janeiro State University, Brazil*).

**1312** Periodontal Disease in HIV-positive Children: 3-year Findings. D. SCHOEN\*, D.H. FINE, E.M. NELSON, and E. VARAGIANNIS (*University of Medicine & Dentistry of New Jersey Dental School, Newark; and University of Connecticut School of Dental Medicine, Farmington, USA*).

**1313** Crevicular Fluid Elastase Levels and Periodontal Disease in HIV<sup>+</sup> Patients. T. ALPAGOT\*, D.W. CHAMBERS, G. GOWDEY, and R. HENSHAW (*School of Dentistry, University of the Pacific, San Francisco, CA, USA*).

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**Seq#: 138**      **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Pharmacology, Therapeutics, & Toxicology - Pharmacokinetics and Toxicology**

**1314** Methanol Extract of Radix Achyranthis Stimulates Osteoblastic Activities of Rat Calvarial Cells. Y.-H. OH\* and S.-J. KIM (*Department of Pharmacology, School of Dentistry, Kyung Hee University, Seoul, Korea*).

**1315** Chemotactic Activity of Sea Urchin Lectin-I from *Toxopneustes pileolus*. M. SHINOHARA\*, H. NAKAGAWA, H. SHIMPUKU, H. HAYASHI, and K. OHURA (*Department of Pharmacology, Osaka Dental University; and Department of Life Sciences, University of Tokushima, Japan*).

**1316** Pharmacokinetics of Bisphenol A from a Dental Sealant in Humans. Y.K. FUNG\*, N. EWOLDSEN, H.A. ST. GERMAIN, C.L. MIAW, H.-N. CHOU, S.E. GRUNINGER, F.C. EICHMILLER, and C. SIEW (*University of Nebraska Medical Center College of Dentistry, Lincoln, NE; and ADA HF, Chicago, IL, USA*).

**1317** Effects of Catechins on Hydroxyl Radical. M. KASHIMA\*, K. SAITOH, M. KOZUKA, Y. TSUJIMOTO, and M. YAMAZAKI (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**1318** Evaluation of Effect of EPC-K<sub>1</sub> on Hydroxyl Radical. Y. TSUJIMOTO\*, M. KASHIMA, I. UEDA, and M. YAMAZAKI (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**1319** Cannabinoids Suppress Capsaicin-evoked Release of iCGRP from Rat Pulp. A. POON\*, L. WAGNER, and K.M. HARGREAVES (*Department of Endodontics, University of Texas Health Science Center at San Antonio, USA*).

**1320** The Cytotoxicity of Resin-based Root Canal Sealers. T.H. HUANG\*, C.T. KAO, H. LII, and M.Y. CHOU (*Dental Department, Chung Shan Medical and Dental College, Taichung, Taiwan, ROC*).

**1321** Effect of Vesnarinone on Cell Growth, Differentiation, and Cytokine Secretion. Y. SUZUKI\*, T. OKAZAKI, N. DOMAE, and M. DAITO (*Pediatric Dentistry and Medicine, Osaka Dental University; and Hematology/Oncology, Kyoto University, Japan*).

**1322** Nicotine Effects on the Stimulation of Interleukins in Periodontal Fibroblasts. C.A. ZAPATA, R.L. GREGORY, J.C. McDONALD, and B.L. OLSON\* (*Indiana University School of Dentistry, Indianapolis, USA*).

**1323** Nicotine Effects on the Release of IL-6 from Epithelial Cells. M.J. SCHYMIK\*, R.L. GREGORY, J.L. McDONALD, and B.L. OLSON (*Indiana University School of Dentistry, Indianapolis, USA*).

**1324** Absence of Bisphenol A (BPA) in ADA Seal of Acceptance Pit and Fissure Sealants. C.L. MIAW\*, H.-N. CHOU, S.E. GRUNINGER, C. SIEW, R. GEARY, S. JOSE, W.T. WOZNIAK, and P.L. FAN (*ADAHF Research Institute, Chicago, IL, USA*).

**1325** Toxicological Evaluation of an H<sub>2</sub>O<sub>2</sub>-based Tooth Whitening Gel. Y. LI, W. ZHANG, J. DAVIS, A. AGUILAR, and J. KIM\* (*Loma Linda University, CA, USA*).

**1326** Peroxide Content and Free Radical Generation by Hi Lite 2. Y. LI, W. ZHANG, Y. XU, J. DAVIS\*, and J. KLAUNIG (*Loma Linda University, CA; and Indiana University, Indianapolis, USA*).

**1327** Cytotoxicity of Resin Components and Solvent Effect on TC<sub>50</sub> Determination. D.M. YOURTEE\*, P.Y. TONG, L.A. WETMORE, C.C. CHAPPELOW, J.D. EICK, A. GLAROS, and E.L. KOSTORYZ (*University of Missouri-Kansas City; and Midwest Research Institute, Kansas City, MO, USA*).

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**Seq#: 139** **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Neuroscience/TMJ - TMD Diagnosis, Treatment, and Assessment**

**1328** Ear Congestion and Tinnitus in TMD. E.E. SOMMERS\*, L. LeRESCHÉ, E.L. TRUELOVE, K.H. HUGGINS, and S.F. DWORKIN (*Department of Oral Medicine, University of Washington, Seattle, USA*).

**1329** Long-term Imaging Changes Associated with Temporomandibular Joint Implants: Preliminary Findings. H. SHIMOHIRA\*, J.O. LOOK, and J.R. FRICTON (*School of Dentistry, University of Minnesota, Minneapolis, USA*).

**1330** Long-term Mandibular Dysfunction Associated with Temporomandibular Joint Implants: Preliminary Findings. J.R. FRICTON\*, J.O. LOOK, E.L. SCHIFFMAN, P. YU, B.T. LOWRY, and P.L. CARLSON (*School of Dentistry, University of Minnesota, Minneapolis, USA*).

**1331** A Twin Study of Temporomandibular Joint Pathology. L. LO BIANCO\*, B. MICHALOWICZ, J. HODGES, and J.R. FRICTON (*Oral Health Clinical Research Center, University of Minnesota School of Dentistry, Minneapolis, USA*).

**1332** Oral-health-related Quality of Life in Temporomandibular Disorder Patients. M. JOHN\* (*Department of Prosthodontics, Martin Luther University, Halle, Germany*).

**1333** Long-term Follow-up of 109 Patients with Long-lasting Oro-facial Pain. E. WOLF\*, M. NILNER, A. PETERSSON, and K. PETERSSON (*Departments of Endodontics, Oral Radiology, and Stomatognathic Physiology, Faculty of Odontology, Lund University, Malmö, Sweden*).

**1334** Chronic Pains in a Multiracial Population of Young Women. O. PLESH\*, S.A. GANSKY, P.B. CRAWFORD, and Z.I. SABRY (*University of California, San Francisco and Berkeley, USA*).

**1335** Clinical Survey of TMD Patients with the Questionnaire. H. TAKEUCHI\*, K. NISHIGAWA, E. BANDO, M. HOSOKI, and M. NAKANO (*School of Dentistry, Tokushima University, Japan*).

**1336** Effects of Pain and Depression on Memory in Temporomandibular Disorder. A. GLAROS\* and J. ARB (*University of Missouri—Kansas City, USA*).

**1337** Impact of Parafunctional Clenching on Pain and Proprioception in TMD. M. FORBES\*, A. GLAROS, and E. GLASS (*University of Missouri—Kansas City, USA*).

**1338** A Temporomandibular Disorder (TMD) Screening Exam for Primary Care Workers. V.J. MILLER, V. BOOKHAN, P. MOIPOLAI\*, and H.V. EXNER (*University of the Witwatersrand and MEDUNSA, South Africa*).

**1339** A Novel Fast MRI Pulse Sequence for the Diagnosis of Temporomandibular Joint Disorders. E. HONDA\*, T. SASAKI, F.S. SIMM, and K. MARUYAMA (*Department of Dental Radiology, Tokyo Medical and Dental University; and Siemens-Asahi Medical Technologies, Ltd., Tokyo, Japan*).

**1340** Reliability of Dental Hygienists Performing Tender Point Screening for Fibromyalgia. P.L. CARLSON\*, J.L. REINHART, J.O. LOOK, P. LENTON, R.P. MESSNER, A.K. JACKSON, B.R. LINDGREN, and J.R. FRICTON (*Oral Health Clinical Research Center, University of Minnesota, Minneapolis, USA*).

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**Seq#: 140** **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Experimental Pathology - HIV-associated Diseases**

**1341** HHV-8 and HIV-associated Salivary Gland Disease. K.W. LIN\*, D.J. BLACKBOURN, E.T. LENNETTE, T. KUTZKEY, J.S. GREENSPAN, J.A. LEVY, and D. GREENSPAN (*University of California at San Francisco, USA*).

**1342** Dental Development in a Cohort of HIV-infected Children. M.J. HAUK, F. CYTRYN, M.E. MOSS, G. WEINBERG, C. MEYEROWITZ, and R.J. BERKOWITZ\* (*University of Rochester, NY, USA*).

**1343** Enhanced Susceptibility to Sustained-release Doxorubicin in AIDS-KS Cells. J.E. TOUHALISKY\*, R. ORTIZ, G.M. NESS, M.G. WIENTJES, and S.R. MALLERY (*Ohio State University, Columbus, USA*).

**1344** Stimulated Release of HSV-1 from Quiescently Infected PC-12 Cells. S.W. HAMBLY\*, R.J. DANAHER, R.J. JACOB, and C.S. MILLER (*College of Dentistry and Medicine, University of Kentucky, Lexington, USA*).

**1345** Growth Kinetics of HSV-1 in PC12 and Vero Cells. D.A. VIED\*, R.J. DANAHER, R.J. JACOB, and C.S. MILLER (*College of Dentistry and Medicine, University of Kentucky, Lexington, USA*).



**1346** Persistently Infected PC12 Cells Rapidly Produce Virus Following Heat Shock. C.S. FREEMAN\*, R.J. DANAHER, R.J. JACOB, and C.S. MILLER (*College of Dentistry and Medicine, University of Kentucky, Lexington, USA*).

**1347** Comparison of Dental Caries Experience in HIV+ and HIV- Women. R. MULLIGAN\*, M. ALVES, B. CHEIKH, J. BRUNELLE, M. REDFORD, G.L. HENLEY, S. GANGE, and J. PHELAN (*University of Southern California; University of Illinois, Chicago; University of California, San Francisco; Howard University, Washington, DC; JHU, Baltimore, MD; VAMC, Northport, NY, USA*).

**1348** Oral Fibroblasts are Non-permissive to HIV-1 Infection *in vitro*. C.O. EDWARDS\*, J.F. INGELS, D.A. TIPTON, and L.W. PIFER (*University of Tennessee, Memphis, USA*).

**1349** Expression of MRP8/MRP14 Complex in Oral Kaposi's Sarcoma Lesions. H. LIU\*, M.-E. PENARANDA, D. GREENSPAN, and J.S. GREENSPAN (*School of Stomatology, Beijing Medical University, China; and Oral AIDS Center, Department of Stomatology, University of California, San Francisco, USA*).

**1350** Functional Studies of K14, a Transient Gene of Kaposi-sarcoma-associated Herpesvirus. W.Y. CHUNG\* and Y. CHANG (*School of Oral and Dental Surgery, Columbia University, New York, USA*).

**1351** Human Papillomavirus Type 16 Affects Nucleotide Excision Repair in Oral Keratinocytes. O. REY\*, S. LEE, and N.-H. PARK (*UCLA School of Dentistry and Dental Research Institute, Los Angeles, CA, USA*).

**1352** Molecular Characterization of Oral *Candida albicans* in Radiation Therapy Patients. C.W. BAILEY\*, R.K. MCATEE, J.L. LOPEZ-RIBOT, W.R. KIRKPATRICK, T.F. PATTERSON, and S. REDDING (*University of Texas Health Science Center at San Antonio, USA*).

**1353** Development of a Novel Anticandidal Drug Delivery System. D.M. WILLIAMS\*, M. BRADEN, M.P. PATEL, A.T. CRUCHLEY, and D.C. COLEMAN (*Queen Mary and Westfield College, London, UK; and Trinity College Dublin, Ireland*).

**1354** Effect of Toothbrushing on Blood and HIV-1 RNA Load in Saliva. L.L. PATTON\*, D.C. SHUGARS, J. SCHOCK, and S.A. FISCUS (*Schools of Dentistry and Medicine, University of North Carolina, Chapel Hill, USA*).

**1355** Characterization of Mononuclear Inflammatory Cells in *in vitro*-infected Human Gingiva. V. NADARAJAH\*, R.E. COHEN, and E.J. BERGEY (*Departments of Periodontology and Oral Biology, State University of New York at Buffalo, USA*).

**1356** Profile of a New Urban HIV Dental Program, 1996-98. I. Demographics and Anti-retroviral Therapy. R.W. ROWLAND\*, E.A. GABALL, A.L. CAIRO, L. CRANE, and J.R. WINKLER (*University of Detroit Mercy, MI; and Wayne State University, Detroit, USA*).

**1357** Profile of a New Urban HIV Dental Program, 1996-98. II. Medical Status and Oral Lesions. J.R. WINKLER\*, A.L. CAIRO, E.A. GABALL, L. CRANE, and R.W. ROWLAND (*University of Detroit Mercy, MI; and Wayne State University, Detroit, USA*).

**1358** Profile of a New Urban HIV Dental Program, 1996-98. III. Dental Disease. R.W. ROWLAND, E.A. GABALL\*, A.L. CAIRO, L. CRANE, and J.R. WINKLER (*University of Detroit Mercy; and Wayne State University, Detroit, USA*).

**1359** Hairy Leukoplakia: A Unique Pathology that Arises from Transforming and Permissive EBV Infection. J. WEBSTER-CYRIAQUE\*, J. MIDDLEDORP, and N. RAAB-TRAUB

(*University of North Carolina Schools of Dentistry and Medicine, Chapel Hill; University of North Carolina Lineberger Cancer Research Center, Chapel Hill, USA; and Organon Technika, The Netherlands*).

**Seq#: 141** **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

### **Craniofacial Biology - Tooth Formation**

**1360** Calbindin D28k-like Immunoreactivity during Root Formation of Rat Molar. T. ONISHI\*, T. OOSHIMA, S. SOBUE, T. MAEDA, S. WAKISAKA, and K. KURISU (*Departments of Pedodontics and Oral Anatomy & Developmental Biology, Osaka University; and Department of Oral Anatomy, Niigata University, Japan*).

**1361** Insulin-like Growth Factors in Tooth Development. M. ZEICHNER-DAVID\*, J. CATON, C. BARRAGAN, V. BHAKTA, V. SANTOS, and P. BRINGAS, Jr. (*CCMB-USC School of Dentistry, Los Angeles, CA, USA*).

**1362** *Osf2/Cbfa1* is a Critical Regulator of Tooth Development. M.R. SCOTT\*, J. GAIKWAD, A. CAVENDER, T. ÅBERG, I. THESLEFF, and R. D'SOUZA (*Dental Branch, University of Texas Health Science Center, Houston, USA; and University of Helsinki, Finland*).

**1363** An Inactive MSX1 Causes Human Tooth Agenesis. H. VASTARDIS\*, H. GEZHI, A.J. BENDALL, C.E. SEIDMAN, J.G. SEIDMAN, and C. ABATE-SHEN (*New York University; Harvard University, Boston, MA; and CABM and UMDNJ, Piscataway, NJ, USA*).

**1364** Smad2/3 and Smad7 Play Opposite Roles in Regulating Mandibular Morphogenesis. Y. CHAI\* and J. ZHAO (*Center for Craniofacial Molecular Biology, School of Dentistry, University of Southern California, Los Angeles, USA*).

**1365** Fibrillin is an Abundant Extracellular Component of Developing Oral Tissues. B.K. MADDOX\*, L.Y. SAKAI, and D.R. KEENE (*Shriners Hospital for Children, and Department of Oral and Molecular Biology, Oregon Health Sciences University, Portland, USA*).

**1366** Immunohistochemical Demonstration of hMSH2 and hMHLH1 Proteins in Ameloblastoma. G. PERFETTI\*, G. CASTRILLI, M. PIATTELLI, L. ARTESE, M. FIORONI, C. RUBINI, and A. PIATTELLI (*Department of Oncology, Chieti; Dental Schools, University of Chieti and University of Ancona, Italy*).

**1367** Dentin Matrix Protein 1 (DMP1) is a Target for Regulation by Ets2. G.V. KULKARNI\*, A. GEORGE, and A. SETH (*Faculty of Dentistry, University of Toronto, ON, Canada; Northwestern University, Chicago, IL, USA; and MRC Group in Periodontal Physiology and Department of Laboratory Medicine and Pathobiology, University of Toronto, Ontario, Canada*).

**1368** Localized Enamel Hypoplasia of Human Deciduous Canines: Genotype or Environment? S. TAJI\*, G. TOWNSEND, J. ROGERS, and T. HUGHES (*Department of Dentistry, University of Adelaide, Australia*).

**Seq#: 142** **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

### **Craniofacial Biology - Bone Repair and Tooth Movement**

**1369** Biophysical Properties of the Calcium-conducting Stretch Channel in the MC3t3-E1 Osteoblasts. C. LEKNIUS\*, K.W. SNOWDOWNE, and M.H. PAYNE (*Departments of Restorative Dentistry & Orthodontics, School of Dentistry, University of the Pacific, San Francisco, CA, USA*).

**1370** Tooth Movement to the Newly Generated Bone Induced by rhBMP-2. T. KAWAMOTO\*, N. MOTOHASHI, A. KITAMURA, M. OGAWA, N. IMAMURA, A. NUNOTA, T. FUKAYA, Y. BABA, S. SUZUKI, and T. KURODA (*Tokyo Medical and Dental University, Japan*).

**1371** Osteonectin, Osteopontin, and c-Fos Immunoreactivity during Osseous Regeneration. T. CHINO\*, A.H. KAFRAWY, D.A. MILES, and S.L. ZUNT (*School of Dentistry, Indiana University, Indianapolis, USA*).

**1372** Fracture Healing of the Mandible Results in Altered Levels of PDGF and VEGF. M. GIBBS\*, B. STONE, R. SPEARS, J.B. COPE, L.A. OPPERMAN, and R.P. HARPER (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**1373** TGF- $\beta$  Levels are Elevated after Fracture of the Mandible in Culture. B. STONE\*, M. GIBBS, R. SPEARS, J.B. COPE, L.A. OPPERMAN, and R.P. HARPER (*Baylor College of Dentistry—Texas A&M University System, Dallas, USA*).

**1374** Measurement of Cytokine Concentration in the Gingival Crevicular Fluid of Orthodontic Patients. O. JUREYDA\*, A. LALA, R.J. GENCO, and C.B. PRESTON (*Department of Orthodontics and Department of Oral Biology, State University of New York at Buffalo, USA*).

**1375** Ultrasound-mediated Enhanced Secretion of Vascular Endothelial Growth Factor (VEGF). Q.A. HAMID\*, T. KIANOUSH, S. UEMATSU, M. TEWARI, S. USMANI, R. WEINER, O.C. TUNCAY, and D.S. TEWARI (*Department of Orthodontics, School of Dentistry, Temple University, Philadelphia, PA, USA*).

**1376** Activation of Signaling Pathways by Inflammatory Mediators in Chondrocytic Cells. C. SÉGUIN and S.M. BERNIER\* (*University of Western Ontario, London, Canada*).

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**Seq#: 143** **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Craniofacial Biology - Dental Arch and Tooth Form**

**1377** The Presence of Sexual Dimorphism in the Human Dental Arches: A Fourier Analytic Study. S.S. AHN\*, P.E. LESTREL, and O. TAKAHASHI (*UCLA School of Dentistry, USA; and Nihon University at Matsudo School of Dentistry, Japan*).

**1378** A Size and Shape Study of Dental Arch Crowding vs. Non-crowding: Fourier Analysis. O. TAKAHASHI\*, P.E. LESTREL, and S.S. AHN (*UCLA School of Dentistry, USA; and Nihon University at Matsudo, School of Dentistry, Japan*).

**1379** An Analysis of Dental Arch Form: A Model Based on Fourier Descriptors. P.E. LESTREL\*, O. TAKAHASHI, and S.S. AHN (*University of California at Los Angeles School of Dentistry, USA; and Nihon University (at Matsudo) School of Dentistry, Japan*).

**1380** Predictors of Dental Crowding at Hellman's IIA Developmental Stage. L. MELO\*, Y. ONO, K. FUNAYAMA, D. SATO, and Y. TAKAGI (*Department of Pediatric Dentistry, Tokyo Medical and Dental University, Japan*).

**1381** Polynomial Curve Superimpositions on Dental Arch Forms with Normal Occlusions. H. ISHIKAWA, C. NAKAGAWA\*, M. FUJITA, and K. ARAI (*Department of Orthodontics, Nippon Dental University, Tokyo, Japan*).

**1382** Canine Wear and Dental Development in the Primary Dentition. T. SEKIMOTO\*, K. MURAKAMI, S. TANAKA, and S. SHIMOOKA (*The Nippon Dental University, School at Niigata, Japan*).

**1383** Effects of Monozygotic Chorionicity on Dental Arch Size and Form. B.G. BURRIS\*, E.F. HARRIS, and R.H.Y. POTTER (*University of Tennessee, Memphis, USA*).

**1384** Enamel, Dentin, and Pulp Contributions to Deciduous Tooth Crown Size. J.D. HICKS\*, E.F. HARRIS, and B.D. BARCROFT (*University of Tennessee, Memphis, USA*).

**1385** Mandibular Incisor Width as a Predictor of Maxillary Intermolar Width. R.L. MOLEN\*, K.S. LINDEMANN, T.L. LOISEAU, and J.M. CARUSO (*School of Dentistry, Loma Linda University, CA, USA*).

**1386** Early Eruption of First Premolars in Blacks: Is it Maturation in Blacks? E.R. RICHARDSON\* and S.K. MALHOTRA (*Meharry Medical College, Nashville, TN, USA*).

**1387** Sulcus Depths, Keratinized Gingival Width Changes of Erupting Non-succedaneous Teeth. B. WOODFORD\*, M. BECK, and J. BURCH (*Ohio State University College of Dentistry, Columbus, USA*).

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**Seq#: 144** **Thursday, March 11, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Craniofacial Biology - Biomechanics/Force Application**

**1388** Comparisons of Debonding Forces between Different Tooth Types. S.E. BISHARA\*, M.E. OLSEN, and A. SULIEMAN (*University of Iowa, Iowa City, USA*).

**1389** Human Canine Movement in Response to Low Force Magnitudes. J.E. HAACK\*, J.C. NICKEL, and L.R. IWASAKI (*College of Dentistry, University of Nebraska Medical Center, Lincoln, USA*).

**1390** Orthodontic Tooth Movement Using Anterior Torquing Mechanics. S.J. LINDAUER\*, B.A. BRASSINGTON, and G. BATH (*Virginia Commonwealth University, School of Dentistry, Richmond, USA*).

**1391** Torque Rate: A Comparison of Two Methods of Force Application. P.R. VARBLE, P.C. KESLING, F.J. SOBKOWSKI, D.J. FERGUSON, and P.J. SANTUCCI\* (*Center for Advancement of Dental Education, St. Louis University, MO, USA*).

**1392** Modification of Orthodontic Force System in Case of Furcation Defects. P. JEON\* and K. TING (*University of California, Los Angeles, USA*).

**1393** Compensated Bracket Height for Vertical Variation of the FA Points. M. FUJITA\*, K. ARAI, and H. ISHIKAWA (*Department of Orthodontics, Nippon Dental University, Tokyo, Japan*).

**FRIDAY (Morning)**

**PLENARY SESSION #2**

**Thursday, 8:15 to 9:00 am Ballroom A**

**"Evidence-based Medicine:  
Selection of Proper Study Design"**

**JOHAN KARLBERG  
(Paediatrics, University of Hong Kong, CHINA)**

**Seq#: 145 Friday, 9:00 am – 11:00 am  
Workshop #2, Pan Pacific Hotel, Gazebo II**

**Education Research Group - Evaluation of Problem-Solving  
Skills: What We Really Do**

**Chairperson: L. Johnson**

- 1394** 9:00 Opening Comments.  
9:20 The University of Melbourne: A Case Study. M. ALDRED (*University of Melbourne, Australia*).  
9:40 The Triple Jump and Beyond: The USC Story. C. SHULER (*University of Southern California, Los Angeles, USA*).  
10:00 The University of Hong Kong: A Case Study. M. COMFORT (*University of Hong Kong*).  
10:20 Trinity College: A Case Study. B. McCARTAN (*Trinity College, Dublin, Ireland*).  
10:40 Discussion.

**Seq#: 146 Friday, 9:00 am – 11:00 am  
Symposium, Room 1**

**Nutrition and Cariology Groups – Tea and Oral Health  
[Supported by Unilever, Wm. Wrigley, Jr. Co., Warner-Lambert Co., Tea Council and Tea Association of Canada, and Optiva Corp.]**

**Chairpersons: C. Wu and S. Kashket**

- 1395** 9:00 Opening Comments.  
9:05 Biological Role of Tea Polyphenols. Y. HARA (*Mitsui Norin Co. Ltd., Shizuoka, Japan*).  
9:25 The Effects of Tea Extracts on Plaque Regrowth/Glycolysis and Oral Malodor. C. WU (*University of Illinois, Chicago, USA*).  
9:45 Effects of Black Tea Extracts on the Oral Microflora *in vitro*. P.D. MARSH (*Center for Applied Microbiology and Research, Salisbury, UK*).  
10:05 Tea and the Consumption of Dietary Starches. S. KASHKET (*Forsyth Dental Center, Boston, MA, USA*).  
10:25 Odor-removing Ability of Selected Taiwanese Teas and its Implication in Oral Health. L.S. HWANG (*National Taiwan University, Taipei*).  
10:45 Discussion.

**Seq#: 147 Friday, 9:00 am – 11:00 am  
Symposium, Ballroom A**

**IADR - Applications of New Concepts/Technologies to Clinical  
Research in Dentistry  
[Supported by Warner-Lambert Co.]**

**Chairpersons: J. Clarkson and J. Stamm**

- 1396** 9:00 Opening Comments.

- 9:05 Key Design Issues for Outcomes Research in Dentistry. A. WHITE (*Kaiser Permanente, Portland, OR, USA*).  
9:25 Cariology: Diagnostic Methods and Their Impact on Clinical Research and Prevention/Treatment Strategies. N. PITTS (*University of Dundee, Scotland*).  
9:45 Periodontology: Clinical Research and Modern Periodontal Diagnostics. D. KINANE (*Glasgow Dental School, Scotland*).  
10:05 Oral Medicine: Advances in Clinical Research in Oral Medicine. S. CHALLACOMBE (*Guy's Hospital, London, UK*).  
10:25 Saliva: Recent Developments in Clinical Research on Saliva. B. O'CONNELL (*NIDCR/NIH, Bethesda, MD*).  
10:45 Summary. J. STAMM (*University of North Carolina, Chapel Hill, USA*).  
10:50 Discussion.

**Seq#: 148 Friday, 9:00 am – 11:00 am  
Symposium, Ballroom B**

**Periodontal Research Group - Cementum and Periodontal  
Regeneration [Supported by BIORA Inc., USA]**

**Chairperson: A.S. Narayanan and M.-I. Cho**

- 1397** 9:00 Opening Comments.  
9:05 Structural Organization of Matrix Molecules in Cementum. D.D. BOSSHARDT (*Center for Dental Medicine, Basel, Switzerland*).  
9:25 Biologically Active Molecules in Cementum. M. SOMERMAN (*University of Michigan, Ann Arbor, USA*).  
9:45 Cementogenesis. T. YAMAMOTO (*Hokkaido University, Sapporo, Japan*).  
10:05 Regulatory Factors in Cementogenesis. W. BEERTSEN (*ACTA, Amsterdam, The Netherlands*).  
10:30 Interaction Between Periodontal Cells and Cementum Molecules: Clinical Implications. S. PITARU (*Tel Aviv University, Israel*).  
10:55 Discussion.

**Seq#: 149 Friday, March 12, 9:00 am - 11:00 am  
Poster Discussion Session, Room 14**

**Behavioral Sciences & Health Services Research - Restoration  
Longevity**

**Chairpersons: E. Treasure and F. Young**

- 9:00 Poster Viewing Time  
**1398** 9:30 Caries Risk of Patients with Watched vs. Replaced Restorations. J.R. LUSTIG\*, V.A. MARKER, B.A. DESPAIN, and P.W. WOODS (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).  
**1399** 9:38 Preformed Crowns—Evidence for Efficacy in Primary Molar Teeth. R.C. RANDALL\*, M.M.A. VRIJHOEF, and N.H.F. WILSON (*Laboratoires 3M Santé, France; and University of Manchester, UK*).  
**1400** 9:46 Impact of Patient and Practice Variables on Restoration Decisions. M.A.D. PANAIT\*, E.H. VERDONSCHOT, and A.J.M. PLASSCHAERT (*Department of Cariology and Endodontology, University of Nijmegen, The Netherlands*).

**1401** 9:54 Longevity of Class V Restorations—Findings from a Systematic Review. R.J. JONES\*, A.S.M. GILMOUR, and S. RICHMOND (*Dental Systematic Reviews, University of Wales College of Medicine, Cardiff, UK*).

**1402** 10:02 Longevity of Porcelain and Composite Inlays—Systematic Review Findings. P.M.H. DUMMER\*, R.J. JONES, and B.L. CHADWICK (*Dental Systematic Reviews, University of Wales College of Medicine, Cardiff, UK*).

**1403** 10:10 A Systematic Review of Dental Restoration Longevity—Statistical Issues. F.D. DUNSTAN\*, R.J. JONES, and E.T. TREASURE (*Dental Systematic Reviews, University of Wales College of Medicine, Cardiff, UK*).

**1404** 10:18 Issues in Assessing the Cost-effectiveness of Dental Restorations. C. PHILLIPS\*, J.S. REES, and R.J. JONES (*Dental Systematic Reviews, University of Wales College of Swansea, College of Medicine; and Bristol University, UK*).

**1405** 10:26 Restoration Longevity—Recommendations on Reporting Requirements for Publication. E.T. TREASURE\*, B.L. CHADWICK, and R.J. JONES (*Dental Systematic Reviews, University of Wales College of Medicine, Cardiff, UK*).

10:34 Poster Discussion Time

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**Seq#: 150** **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Room 3**

### **Cariology Research - Lasers/Diagnostic Methods**

**Chairpersons: J. ten Bosch and J. Featherstone**

**1406** 9:00 Modification of Enamel by Carbon Dioxide Laser-induced Heating. M.J. ZUERLEIN, D. FRIED, and J.D.B. FEATHERSTONE\* (*University of California, San Francisco, USA*).

**1407** 9:15 Argon Laser and APF Treatment Effect on Enamel Surface Morphology: An SEM Study. G. WESTERMAN\*, J. HICKS, C. FLAITZ, R.J. BLANKENAU, and L. POWELL (*Creighton University School of Dentistry, Omaha, NE; University of Texas Dental Branch, Texas Children's Hospital, Houston; and University of Utah, Salt Lake City, USA*).

**1408** 9:30 Effects of CO<sub>2</sub> Laser and Organic Matrix on Fluoride-induced Inhibition of Enamel Demineralization. C.S. HSU\* and J.S. WEFEL (*Department of Preventive Dentistry, National University of Singapore; and Dows Institute for Dental Research, College of Dentistry, University of Iowa, Iowa City, USA*).

**1409** 9:45 Measurement of Transmission Coefficient of Teeth for Dental Caries Diagnosis. K. KAWAI\*, Y. NIKAWA, and S. EBISU (*Faculty of Dentistry, Osaka University; and School of Electrical Engineering, National Defense Academy, Yokosuka, Japan*).

**1410** 10:00 Electrical Conductivity of Fissure Enamel: Time-dependence, Relation with Lesion Onset. J.J. ten BOSCH\*, Y.L. FENNIS-IE, and E.H. VERDONSCHOT (*Lab. Materia Technica, University of Groningen; and Department of Cariology and Endodontology, University of Nijmegen, The Netherlands*).

**1411** 10:15 Electrical Resistance of Probed and Unprobed Dentin. J.F. PRINZ\*, M. GROOTVELD, A. BAYSAN, P.B. BOORSBOOM, and E. LYNCH (*Saint Bartholomew's and Royal London School of Medicine and Dentistry, QMW, UK; and Scientific Foundation of Caries Diagnosis, NL*).

**1412** 10:30 Characterization of Pits and Fissures Using Air Abrasion. J.C. HAMILTON\*, J.B. DENNISON, and K.W.

STOFFERS (*School of Dentistry, University of Michigan, Ann Arbor, USA*).

**1413** 10:45 Enamel Demin/Remin after Radiotherapy, *in situ* and *in vitro* Irradiations. H. DUSCHNER\*, K.A. GRÖTZ, B. AL NAWAS, and W. WAGNER (*Medical Faculty, University of Mainz, Germany*).

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**Seq#: 151** **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Room 12**

### **Craniofacial Biology - Cranial Base Synchronoses**

**Chairpersons: M. Ignelzi and P. Gakunga**

**1414** 9:00 Hyaluronan in Cranial Base Synchronosomal Growth. P. GAKUNGA\* and R. STERN (*Department of Biomedical Sciences, Baylor College of Dentistry-The Texas A&M University System, Dallas; and Department of Pathology, University of California San Francisco, USA*).

**1415** 9:15 Exogenous Application of FGF1, 2, 4 to Fetal Mouse Calvaria Leads to Suture Closure. A.T. YOUNG\*, A.M. FRIBLEY, and M.A. IGNELZI, Jr. (*Department of Orthodontics and Pediatric Dentistry, School of Dentistry, University of Michigan, Ann Arbor, USA*).

**1416** 9:30 Exogenous Application of FGF1, 2, 4 to Fetal Mouse Calvaria Leads to Increased *Mx2* Expression. W. WANG, A.T. YOUNG, A.M. FRIBLEY, and M.A. IGNELZI, Jr.\* (*Department of Orthodontics and Pediatric Dentistry, School of Dentistry, University of Michigan, Ann Arbor, USA*).

**1417** 9:45 Fetal Mouse Dura Mater Functions to Maintain Suture Patency. R. AINGE\*, A.T. YOUNG, G.S. KANG, J.L. DREIER, A.M. FRIBLEY, L.A. OPPERMAN, R. OGLE, and M.A. IGNELZI, Jr. (*Dept. of Orthodontics and Pediatric Dentistry, University of Michigan School of Dentistry, Ann Arbor; Baylor College of Dentistry, Texas A&M University System, Dallas; and School of Medicine, University of Virginia, Charlottesville, USA*). **(1997 AADR Student Fellowship Recipient)**

**1418** 10:00 Temporal and Spatial Pattern of Expression of *msx-2* Gene in *Xenopus laevis*. S.-G. GONG, P. SHRIMANKAR, and S. RYNKIEWICZ\* (*School of Dentistry, University of Michigan, Ann Arbor, USA*).

**1419** 10:15 Study of *msx2* Function in a *Xenopus laevis* Model System. P. SHRIMANKAR\*, A. KIBA, and S.-G. GONG (*School of Dentistry, University of Michigan, Ann Arbor, USA*).

**1420** 10:30 Gene Expression Changes Correlate with Abnormal Facial Development in *cpp* Chick Embryos. K.Y.N. WONG\* and J.M. RICHMAN (*Department of Oral Health Sciences, University of British Columbia, Vancouver, BC, Canada*).

10:45 Discussion

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**Seq#: 152** **Friday, March 12, March 12, 9:00 am - 11:00 am**

**Poster Discussion Session, Room 13**

### **Craniofacial Biology - Muscle Activity and Function**

**Chairpersons: M. Laine-Alava and T. Goto**

9:00 Poster Viewing Time

**1421** 9:30 Magnetic Resonance Spectroscopy of the Masseter Muscle in Patients with Various Facial Morphological Patterns. E.T. AL-FARRA\*, K. VANDENBORNE, A. SWIFT,

and J. GHAFARI (*University of Pennsylvania, Philadelphia, USA*).

**1422** 9:38 Functional Problems Related to Sagittal Malocclusions. M.T. LAINE-ALAVA\* and R.H. PAHKALA (*Orthodontics Graduate Program and Department of Physiology, University of Kentucky, Lexington, USA; and Department of Orthodontics, University of Oulu, Finland*).

**1423** 9:46 Volume and Length Changes in Human Jaw Muscles during Opening. T.K. GOTO\*, K. TOKUMORI, K. OKAMURA, Y. NAKAMURA, K. YUASA, T. TANAKA, and S. KANDA (*Department of Oral and Maxillofacial Radiology and Department of Radiology, Kyushu University, Fukuoka, Japan*).

**1424** 9:54 Mandibular Advancement Modulates Respiratory-related Genioglossus Electromyographic Activity. S. TSUIKI\*, T. ONO, and T. KURODA (*Second Department of Orthodontics, Tokyo Medical and Dental University, Japan*).

**1425** 10:02 Altered Breathing Modes and Body Positions Affect Suprahyoid Muscle Activity. S. TAKAHASHI\*, T. ONO, Y. ISHIWATA, and T. KURODA (*Second Department of Orthodontics, Tokyo Medical and Dental University, Japan*).

**1426** 10:10 Effects of Bite-opening Treatment on the Expression of Myogenic Regulatory Factors in Rat Masseter Muscle. Y. OHNUKI\*, A. YAMANE, Y. SAEKI, and K. YANAGISAWA (*Tsurumi University School of Dental Medicine, Yokohama, Japan*).

**1427** 10:18 Effect of Simulated Tooth Removal on Human Mandibular Corpus Stiffness. J.P. BEYER\*, W.H. DOUGLAS, and T.W.P. KORIOOTH (*Minnesota Dental Research Center for Biomaterials and Biomechanics, University of Minnesota School of Dentistry, Minneapolis, USA*).

10:26 Poster Discussion Time

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**Seq#: 153** **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Room A-2**

**Dental Materials - Bond Strength and Physical Properties of Dentin**

**Chairpersons: S. Uno and R. Halvorson**

**1428** 9:00 Dentin Strength as a Function of Tubule Orientation and Density. R.M. CARVALHO\*, C.A.O. FERNANDES, R. VILLANUEVA, L. WANG, and D.H. PASHLEY (*FOB—University of São Paulo, Brazil; and Medical College of Georgia, Augusta, USA*).

**1429** 9:15 Influence of the Direction of Tubules on Bond Strength to Dentin. M. OGATA\*, M. OKUDA, M. NAKAJIMA, H. SANO, and J. TAGAMI (*Tokyo Medical and Dental University and Hokkaido University, Sapporo, Japan*).

**1430** 9:30 Theoretical Model of Micro-tensile Bond Test. K. WAKASA\* and Y. YOSHIDA (*Hiroshima University School of Dentistry, Japan*).

**1431** 9:45 Micro-tensile Bond Strength of Cerec Inlay Luted to Dentin. S. UNO\*, C. KAWAMOTO, J. KONISHI, T. TANAKA, and H. SANO (*School of Dentistry, Hokkaido University, Sapporo, Japan*).

**1432** 10:00 Development of a Micro-Shear Test for the Study of Adhesion. W.G. McDONOUGH\*, J.M. ANTONUCCI, G.E. SCHUMACHER, Y. SHIMADA, C.R. SCHULTHEISZ, and J.P. DUNKERS (*National Institute of Standards and Technology, Paffenbarger Research Center/American Dental Association Health Foundation, Gaithersburg, MD, USA; and Tokyo Medical and Dental University, Japan*).

**1433** 10:15 Effect of Smear Layer on Tensile Bond Strength. C. KAWAMOTO\*, S. UNO, S. WATANABE, M. NAKAMURA, H. SANO, J. TAGAMI, and D.H. PASHLEY (*Hokkaido University; Tokyo Medical and Dental University, Japan; and Medical College of Georgia, Augusta, USA*).

**1434** 10:30 Pulpal Pressure Simulation, Adhesion, and Microleakage of 4 Dentin Adhesives. C. BESNAULT\*, S. GONTHIER, P. COLON, and M. DEGRANGE (*Groupe de Recherches Biomateriaux, Université Paris V, France*).

**1435** 10:45 Saliva Contamination at Different Stages and Adhesion of 3 Dentin Adhesives. L. HITMI\*, J.P. ATTAL, and M. DEGRANGE (*Groupe de Recherches Biomateriaux—Université Paris V, France*).

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**Seq#: 154** **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Room A-5**

**Dental Materials - Clinical Trials – Glass Ionomers**

**Chairpersons: A. Boghosian and A. Walls**

**1436** 9:00 Clinical Evaluation of a Resin-modified Glass-ionomer Restorative: 5-year Results. A. BOGHOSIAN\*, J. RICKER, and R. McCOY (*Northwestern University Dental School, Chicago, IL, USA*).

**1437** 9:15 Use of G.I.C. (Fuji IX) in Disabled Patients. G. FANI\* and R. DE IULIS (*Dental School, University of Siena, Italy*).

**1438** 9:30 A Clinical Evaluation of a New Ormocer Restorative at 6 Months. M. ROSIN\*, A. HARTMANN, C. KONSCHAKE, U. GREESE, B. SCHWAHN, and G. MEYER (*Dental School, University of Greifswald; Private Practice, Zinnowitz; Gützkow; and Greifswald, Germany*).

**1439** 9:45 Compomer for Class I/II Restorations—Results after 6 Months. K. HUTH\*, S. SELBERTINGER, K.-H. KUNZELMANN, and R. HICKEL (*Department for Operative Dentistry and Periodontology, University of Munich, Germany*).

**1440** 10:00 Comparative Clinical Study of Two Restorative Materials for Deciduous Molars. I.C.S. ALMEIDA\*, S. TEIXEIRA, and S. MONTEIRO, Jr. (*The Federal University of Santa Catarina, Florianópolis, Brazil*).

**1441** 10:15 Clinical Comparison of Restorative Materials for Caries in Xerostomic Patients. C. HAVEMAN\*, J.O. BURGESS, and J.B. SUMMITT (*University of Texas Health Science Center Dental School, San Antonio, USA*).

**1442** 10:30 Evaluation of Compomers as Class II Restorations in Primary Molars. L.C. GROSS\*, P.S. CASAMASSIMO, A.L. GRIFFEN, C.W. LAMELL, and G. FRAONE (*Ohio State University College of Dentistry, Columbus, USA*).

**1443** 10:45 Fuji IX Restorations in Occlusal Cavities of Molar Teeth, 12-month Data. A.W.G. WALLS\* and E. MATHER (*University of Newcastle upon Tyne, UK*).

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**Seq#: 155** **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Room A-4**

**Dental Materials - Composite Bond Strength: Dentin Preparation Effects**

**Chairpersons: S. Pamuk and K. Söderholm**

**1444** 9:00 Effect of Bleaching on the Shear Bond Strength of Sandblasted Enamel. F. ÇET'İNER, D. SEN, and S. PAMUK\*

(Faculty of Dentistry, Department of Fixed Prosthodontics, University of Istanbul, Turkey).

**1445** 9:15 Effect of Bleaching on Composite Resin Shear Bond Strength *in vitro*. P. YU\*, A. ABOUSHALA, and D. BARDWELL (Tufts University School of Dental Medicine, Boston, MA, USA).

**1446** 9:30 Steam Autoclave and Ethylene Oxide Gas: Their Effects on Dentin Bond Strength. D.T. OLIVEIRA, M. SPERANDIO\*, and J.B. SOUZA (Department of Pathology, Bauru Dental School, University of São Paulo; and Department of Operative Dentistry, University of Goiás, Brazil).

**1447** 9:45 Influence of Acid-etching Times on Microtensile Bond Strength in Deciduous Dentin. R. MACHADO, S. GERALDELI, and A.R.P. do CARMO\* (University of Mogi das Cruzes, São Paulo, Brazil).

**1448** 10:00 Phosphoric Acid Concentrations, Etch Times, Calcium Leachability, and Dentin Shear Bond Strength. K.-J.M. SÖDERHOLM\*, T. JACOBSEN, I. GARCEA, and E. MONDRAGON (College of Dentistry, University of Florida, Gainesville, USA; and Faculty of Odontology, University of Göteborg, Sweden).

**1449** 10:15 The Effect of Storage Condition on a Dentin Bonding Agent. R.M. BEDINGHAUS\*, D.G. CHARLTON, D.F. MURCHISON, H.W. ROBERTS, and K.S. VANDEWALLE (Wilford Hall Medical Center; DIS/Brooks AFB, TX; and Keesler AFB, MS, USA).

**1450** 10:30 Effects of Different Ways of Storage on Dentin Bond Strength. J. DUARTE\*, F.C. COHEN, A.C. LAMOSA, M.S. MIRANDA, and P.L.A. SCABELL (Universidade do Estado do Rio de Janeiro, Brazil).

**1451** 10:45 The Effect of Water Storage on Dentin Bond Strengths of Eight Bonding Agents. S. YU\* and M.S. WOLFF (Department of General Dentistry, State University of New York at Stony Brook, USA).

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**Seq#: 156** **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Room A-3**

**Dental Materials - Polymer Properties – Experimental Formulations**

**Chairpersons: S. Kalachandra and J. Stansbury**

**1452** 9:00 Effect of Molecular Structure on Properties and Photopolymerization of Novel Dimethacrylate Networks. S. KALACHANDRA\*, N. GUNDUZ, A.R. SHULTZ, and J.E. McGRATH (Virginia Tech., Blacksburg; and University of North Carolina, Chapel Hill, USA).

**1453** 9:15 Near-infrared Analysis of Conversion in Resins and Composites. J.W. STANSBURY\* and S.H. DICKENS (Polymers Division, National Institute of Standards and Technology, Gaithersburg, MD; and American Dental Association Health Foundation, Paffenbarger Research Center, National Institute of Standards and Technology, Gaithersburg, MD, USA).

**1454** 9:30 Primary Cyclization in Polymerization of Triethylene Glycol Dimethacrylate (TEGDMA). J.E. GIBSON\* and C.N. BOWMAN (University of Colorado, Boulder, USA).

**1455** 9:45 Mechanical Properties and Structural Heterogeneity of Dental Resins. L.G. LOVELL\*, Y.A. OGUNTMEIN, and C.N. BOWMAN (Chemical Engineering Department, University of Colorado-Boulder, USA).

**1456** 10:00 Effects of Chemical Composition on Cure Properties of Dental Resins. S.H. DICKENS\*, J.W. STANSBURY, and C.J.E. FLOYD (American Dental Association Health Foundation, Paffenbarger Research Center, National Institute of Standards and Technology, Gaithersburg, MD, USA).

**1457** 10:15 Computational Energetic and Mechanistic Investigation of Vinyl Ether Polymerization. J.A. MORRILL\*, A.J. HOLDER, C.C. CHAPPELOW, and J.D. EICK (Departments of Chemistry and Oral Biology, University of Missouri, Kansas City; and Midwest Research Institute, Kansas City, MO, USA).

**1458** 10:30 Calculated Thermodynamic Parameters for Polymerizations of Spiroorthocarbonate Derivatives. A.J. HOLDER, C.D. HARRIS\*, D.A. WHITE, C.C. CHAPPELOW, and J.D. EICK (Departments of Chemistry and Oral Biology, University of Missouri, Kansas City; and Midwest Research Institute, Kansas City, MO, USA).

**1459** 10:45 Computational Energetic and Mechanistic Study of Various Expanding Monomers. A.J. HOLDER\*, D.A. WHITE, C.D. HARRIS, C.C. CHAPPELOW, and J.D. EICK (Departments of Chemistry and Oral Biology, University of Missouri, Kansas City; and Midwest Research Institute, Kansas City, MO, USA).

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**Seq#: 157** **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Room 15**

**Experimental Pathology - Diagnosis and Treatment of Oral Cancer**

**Chairpersons: K. Adler-Storthz and T. ElAttar**

**1460** 9:00 Suppression of Oral Cancer Cell Growth by Curcumin, Resveratrol, and Quercetin. T. ELATTAR\* and A. VIRJI (UMKC School of Dentistry, Kansas City, MO, USA).

**1461** 9:15 Immunohistochemical Characterization of Manganese Superoxide Dismutase Level in Squamous Cell Carcinoma of Human Tongue. M.-T. LAI, H.H. CHOU\*, H.-K. LU, H. FUKUSHIMA, N. NISHIZAKI, and Y. MASUDA (Department of Otolaryngology and School of Dentistry, Taipei Medical College, Taiwan, ROC; and Department of Otolaryngology, Okayama University Medical School, Japan).

**1462** 9:30 Differential Expression of Cytokeratin 4, CEA, and SOX4 between Normal, Pre-malignant, and Malignant Oral Mucosa. N.R. SMITH, A. HIGH, T. FREEMAN, W.J. HUME, A.F. MARKHAM, and P.A. ROBINSON\* (Leeds Dental Institute and Molecular Medicine Unit, University of Leeds; and Wellcome Trust Genome Campus, Hinxton, Cambridge, UK).

**1463** 9:45 The Expression of Mutations in p53 Induced by Chemopreventives. J.L. SCHWARTZ\* and G. XINBIN (College of Dentistry, Howard University, Washington, DC, USA).

**1464** 10:00 Herpes Simplex Virus Mutants for Therapy of Oral Cancer. E.J. SHILLITOE\*, E. GILCHRIST, C. PELLENZ, and V.A. MURRAH (Department of Microbiology and Immunology, SUNY Health Science Center, Syracuse, NY; and Department of Diagnostic Sciences and General Dentistry, University of North Carolina, Chapel Hill, USA).

10:15 Discussion

**1466** 10:30 Adenoviral Vector-mediated Manganese Superoxide Dismutase Gene Transfer to Experimental Oral Tumors. E.W.N. LAM\*, R. ZWACKA, C.J. DARBY, B.L. DAVIDSON, J.F. ENGELHARDT, and L.W. OBERLEY (University of Alberta, Canada; Western General Hospital, Edinburgh, UK; and the University of Iowa, Iowa City, USA).

**1467** 10:45 Correlation of Cisplatin Sensitivity and EGFR Expression in Head and Neck Cancer Cells. L.D. KE, K. ADLER-STORTHZ\*, X.-H. YUAN, G.L. CLAYMAN, and Z. CHEN (University of Texas Dental Branch, Houston; and University of Texas M.D. Anderson Cancer Center, Houston, USA).

**Seq#: 158** **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Room 8**

**Implantology - Clinical Outcomes Assessment of Dental Implants**

**Chairpersons: R. Jacobs and J. Walton**

**1468** 9:00 Meta-analysis on the Performance of Single-tooth Restorations Supported by Implants. N.H.J. CREUGERS, C.M. KREULEN, P.A. SNOEK\*, and R.J.A.M. DE KANTER (College of Dental Science, University of Nijmegen, The Netherlands).

**1469** 9:15 A Meta-analysis of Single-tooth Implant Survival. M.S. SCURRIA, J.S. SELDEN\*, D.A. SHUGARS, and J.D. BADER (University of North Carolina School of Dentistry, Chapel Hill, USA).

**1470** 9:30 Survival of Implants in Patients with Ectodermal Dysplasia and Severe Hypodontia. A.D. GUCKES\*, M.S. SCURRIA, G.R. MCCARTHY, and J.S. BRAHIM (University of North Carolina School of Dentistry, Chapel Hill; and National Institute of Dental and Craniofacial Research, Bethesda, MD, USA).

**1471** 9:45 The Relationship among Gender, Age, and Implant Success. C.A. BAIN\* (University of Glasgow Dental School, Scotland, UK).

**1472** 10:00 Changing Indications of Oral Implantology. E. VAN DER ZEE\* and M.A.J. VAN WAAS (School of Dentistry, University of the Pacific; and School of Dentistry, University of California at San Francisco, USA).

**1473** 10:15 Speech Evaluation in Patients Rehabilitated with Various Oral Implant-supported Prostheses. R. JACOBS\*, C. VAN LOOY, D. LEMBRECHTS, and E. MANDERS (Department of Periodontology and Department of Logopedics and Audiology, Catholic University of Leuven, Belgium).

**1474** 10:30 Peri-implant Changes of Splinted and Unsplinted Implants Retaining Maxillary Overdentures. T.O. NÄRHI\*, M. HEVINGA, W. KALK, and R.A.C.A. VOORSMIT (University of Nijmegen, The Netherlands; and University of Turku, Finland).

**1475** 10:45 A Prospective Study of Sensation Before and After Placement of Implants in the Anterior Mandible. J.N. WALTON\* and M.I. MacENTEE (Department of Oral Health Sciences, University of British Columbia, Vancouver, Canada).

**Seq#: 159** **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Room A-1**

**Microbiology/Immunology - Study of Bacteria from Various Surfaces of the Oral Cavity**

**Chairpersons: P. Caufield and G. Minah**

**1476** 9:00 Evidence of Clonality among African-derived Strains of *S. mutans*. P.W. CAUFIELD\*, Y. LI, and Z.H. ZOU (Specialized Caries Research Center, University of Alabama at Birmingham, USA).

**1477** 9:15 Microbial Populations in Deep Carious Lesions. F.E. MARTIN\*, W.L.K. MASSEY, and N. HUNTER (Institute of

Dental Research and Faculty of Dentistry, University of Sydney, Australia).

**1478** 9:30 Correlation between Volatile Sulfur Levels and Odorigenic Bacteria in Saliva. M. EL-HALABI, G. MINAH, B. TURNG\*, and M. ZHANG (Dental School, University of Maryland, Baltimore, USA).

**1479** 9:45 Relationship between Gram-negative Anaerobes and Oral Malodor. E.A. GOULBOURNE, Jr.\*, P.R. LEACH, K. HERBERT, and J.J. WITT (OTC—Health Care Technology Division, The Procter & Gamble Co., Cincinnati, OH, USA).

**1480** 10:00 Microbiological Investigation of Oral Malodor in Young Children. F. PARYAVI-GHOLAMI, G. MINAH\*, and B. TURNG (Dental School, University of Maryland, Baltimore, USA).

**1481** 10:15 Identification of *Helicobacter pylori* in the Saliva and Dental Plaque. A. WICHELHAUS\*, U. GLASAUER, Q. SONG, G. BODE, and G. ADLER (Departments of Orthodontics and Internal Medicine I, University of Ulm, Germany).

10:30 Discussion

**Seq#: 160** **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Ballroom C**

**Mineralized Tissue - Sialophosphoprotein & Other Proteins**

**Chairpersons: M. MacDougall and H. Ritchie**

**1482** 9:00 A Dentin Sialophosphoprotein -1447 bp-+54LacZ Promoter Construct Drives Tooth-specific Expression in Transgenic Mice. M. MacDOUGALL\*, D. JING, T.T. GU, T. SREENATH, A.B. KULKARNI, and J.Q. FENG (Department of Pediatric Dentistry, University of Texas Health Science Center at San Antonio; and Functional Genomics Unit, NIDCR/NIH, Bethesda, MD, USA).

**1483** 9:15 Molecular Cloning of a Human Dentin Phosphoprotein cDNA. K. GU\*, S.R. CHANG, M. SLAVEN, B.H. CLARKSON, H.H. RITCHIE, and R.B. RUTHERFORD (School of Dentistry, University of Michigan, Ann Arbor, USA).

**1484** 9:30 Spatial and Temporal Expression of Dentin Sialophosphoprotein Gene (DSPP) is Directed by 5.7 kb 5' Flanking Sequence. T. SREENATH\*, A. CHO, J.Q. FENG, M. MacDOUGALL, and A.B. KULKARNI (Functional Genomics Unit, NIDCR/NIH, Bethesda, MD; and Pediatric Dentistry, University of Texas Health Science Center, San Antonio, USA).

**1485** 9:45 Genomic Organization of the Human Dentin Sialophosphoprotein Gene. C. ORTIZ\*, D. SIMMONS, T.T. GU, and M. MacDOUGALL (Department of Pediatric Dentistry, University of Texas Health Science Center at San Antonio, USA).

**1486** 10:00 Transcriptional Regulation of Mouse Dentin Sialophosphoprotein by TGF $\beta$ -1 in Odontoblasts. A. UNTERBRINK\*, J.Q. FENG, and M. MacDOUGALL (Department of Pediatric Dentistry, University of Texas Health Science Center at San Antonio, USA).

**1487** 10:15 The Presence of Multiple Rat DSP-PP Transcripts. H.H. RITCHIE\* and L.-H. WANG (Department of Pediatrics, University of Iowa, Iowa City; and Department of Internal Medicine, University of Texas Health Science Center, Houston, USA).

**1488** 10:30 Dentin Sialophosphoprotein Processing during Dentinogenesis. S. RANI\*, J. NYDEGGER, O.H. RYU, J.P. SIMMER, and M. MacDOUGALL (Department of Pediatric

Dentistry, Dental School, University of Texas Health Science Center at San Antonio, USA).

**1489** 10:45 Gene Structure, Regulation, and Functional Roles of Mouse Dentin Matrix Protein 1. J.Q. FENG\*, X. LUAN, K. TRAIANEDES, S. DALLAS, A. UNTERBRINK, J. DAI, S.E. HARRIS, and M. MacDOUGALL (*Departments of Pediatric Dentistry and Medicine, University of Texas Health Science Center, San Antonio; and University of Missouri—Kansas City, USA*).

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**Seq#: 161** **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Room 17**

**Neuroscience/TMJ - TMD: Clinical Trials and Diagnosis**  
*(themed oral session)*

**Chairpersons: S. Dworkin and C. Carlson**

**1490** 9:00 RCT of Splints for TMD: Clinical Findings at 12 Months. K.H. HUGGINS\*, E.L. TRUELOVE, S.F. DWORKIN, L. MANCL, E.E. SOMMERS, and L. LeRESCHÉ (*Department of Oral Medicine, University of Washington, Seattle, USA*).

**1491** 9:15 RCT of Splint Treatment in TMD: 12-month Self-report Outcomes. E.L. TRUELOVE\*, K.H. HUGGINS, S.F. DWORKIN, L. MANCL, E.E. SOMMERS, and L. LeRESCHÉ (*Department of Oral Medicine, University of Washington, Seattle, USA*).

**1492** 9:30 Randomized Clinical Trial for TMJ Disk Displacement with Reduction. G.C. ANDERSON\*, E.L. SCHIFFMAN, K.L. DECKER, and J. HODGES (*Department of Diagnostic & Surgical Sciences, University of Minnesota, Minneapolis, USA*).

**1493** 9:45 Effects of Relaxation on TMD Symptoms: A Randomized Clinical Trial. J. UYANIK\* and R. OHRBACH (*Department of Oral Diagnostic Sciences, University at Buffalo, NY, USA*).

**1494** 10:00 Validity for Research and Clinical Utility of RDC/TMD Axis II. S.F. DWORKIN\*, J. SHERMAN, R. OHRBACH, E.L. TRUELOVE, K.H. HUGGINS, and L. LeRESCHÉ (*Department of Oral Medicine, University of Washington, Seattle; and State University of New York, Buffalo, USA*).

**1495** 10:15 Domains of Measurement in Chronic TMD Pain: Psychometric Properties. R. OHRBACH\*, S.F. DWORKIN, and E.L. TRUELOVE (*University at Buffalo, NY; and University of Washington, Seattle, USA*).

**1496** 10:30 Validity of a Self-report Scale for TMD-related Disability. B.M. HORRELL\*, R. OHRBACH, S. MARKELLO, and C. GRANGER (*Departments of Oral Diagnostic Sciences and Rehabilitation Medicine, University at Buffalo, NY, USA*).

10:45 Discussion

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**Seq#: 162** **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Room 9**

**Oral/Dental Hygiene - Manual Toothbrushes, Bristle Evaluation, Oral Irrigators**

**Chairpersons: P. Adriaens and S. Jepsen**

**1497** 9:00 Comparison of Toothbrush Stiffness Values. B. SCHEMEHORN\* (*School of Dentistry, Indiana University, Indianapolis, USA*).

**1498** 9:15 Anti-gingivitis Efficacy of Toothbrushing Compared with Toothbrushing and Gum Stimulation. M.J. CRONIN, W.Z. DEMBLING, D.M. JACOBS, M.L. LOW\*, B.J. MACKAY, and D.A. WEBER (*Oral-B Laboratories, Belmont, CA, USA*).

**1499** 9:30 Evaluation of Dental Plaque Removal with a "New Technology Bristles" (NTB) Toothbrush. P.A. ADRIAENS\* and S. MATTHIJS (*International Center for Periodontology and Oral Implants (ICPOI), Brussels; and University of Brussels, Belgium*).

**1500** 9:45 Design Characteristics of Toothbrushes for Infants and Toddlers. A.J. NOWAK\* (*University of Iowa, Iowa City, USA*).

**1501** 10:00 The Effectiveness of a Novel Irrigator on the Reduction of Gingivitis. C.-P. ERNST\*, M. PITTRUF, and B. WILLERSHAUSEN (*Department of Restorative Dentistry and Periodontology, Johannes Gutenberg University, Mainz, Germany*).

**1502** 10:15 Evaluation of a Novel Oral Irrigation System in Experimental Gingivitis. S. JEPSEN\*, S. LÖHNERT, K. JEPSEN, and H.-K. ALBERS (*University of Kiel Dental School, Germany*).

10:30 Discussion

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**Seq#: 163** **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Room 7**

**Oral & Maxillofacial Surgery - Oral and Maxillofacial Trauma**

**Chairpersons: E. Ellis and V. Shetty**

**1503** 9:00 Open Treatment of Condylar Process Fractures: Assessment of Adequacy of Repositioning and Stability. E. ELLIS\* and G.S. THROCKMORTON (*Oral and Maxillofacial Surgery, University of Texas Southwestern Medical Center, Dallas, USA*).

**1504** 9:15 Stability during Closed Treatment of Condylar Process Fractures. G.S. THROCKMORTON\*, E. ELLIS, and C. PALMIERI (*Division of Oral and Maxillofacial Surgery, University of Texas Southwestern Medical Center, Dallas, USA*).

**1505** 9:30 A Photoelastic Model for Biomechanical Study of Surgically Treated Condyle Fractures. P. CHRISTOPOULOS\*, A.A. CAPUTO, V. SHETTY, and C. ALEXANDRIDIS (*School of Dentistry, University of Athens, Greece; and UCLA, USA*).

**1506** 9:45 Clinical, Radiographic, and MRI Findings after Condylar Fractures. T.M. PRÄGER\*, R. FISCHBACH, M. SIESSEGGER, J. HIDDING, and J.E. ZÖLLER (*Departments of Oral and Maxillofacial Surgery and Radiology, University at Cologne, Germany*).

**1507** 10:00 Body Lead Burden as a Result of Maxillofacial Gunshot Wounds. J. McQUINTER\*, S. ROTHENBERG, G. DINKINS, and A. TREADWAY (*Charles R. Drew University of Medicine and Sciences, Los Angeles, CA, USA*).

**1508** 10:15 Current Trends in the Treatment of Maxillofacial Injuries in the United States. D.M. LASKIN\* and A.M. BEST (*Virginia Commonwealth University, Richmond, USA*).

**1509** 10:30 Orofacial Injury Severity Rating by OMF Surgeons. V. SHETTY\*, K. ATCHISON, and T. BELIN (*University of California at Los Angeles School of Dentistry; and University of California at Los Angeles Neuropsychiatric Institute, USA*).

**1510** 10:45 Comparison of Experimental Mandibular Fractures with Clinical Forensic Trauma Evaluation. E. FELSZEGI\*, S. BENTHAUS, A. DUCHESNE, U. MEYER, P.



PIFFKO, and U. JOOS (*Clinic for Forensic Medicine, University of Budapest, Hungary; and Clinics for Forensic Medicine and Craniofacial Surgery, University of Münster, Germany*).

**Seq#: 164**      **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Room 11**

**Periodontal Research – Pathogenesis - *P. gingivalis* Proteases; Immunization; Microbial Plaque**

**Chairpersons: R. Page and I. Darby**

**1511** 9:00 Immunization with *Porphyromonas gingivalis* Cysteine Protease Attenuates Alveolar Bone Loss. R.C. PAGE\*, M.S. LANTZ, G.R. PERSSON, L.S. HOUSTON, S.A. LUKEHART, M.K. JEFFCOAT, L. MANCL, A. WEINBERG, P. BRAHAM, and R. DARVEAU (*Schools of Dentistry and Medicine, University of Washington, Seattle; School of Dentistry, University of Indiana, Indianapolis; and School of Dentistry, University of Alabama, Birmingham, USA*).

**1512** 9:15 Immunization with *Porphyromonas gingivalis* Cysteine Protease Decreases Local Prostaglandin E<sub>2</sub> in Experimental Periodontitis. L.S. HOUSTON\*, G.R. PERSSON, M.S. LANTZ, M.K. JEFFCOAT, L. MANCL, S.A. LUKEHART, and R.C. PAGE (*University of Washington, Seattle; University of Indiana, Indianapolis; and University of Alabama, Birmingham, USA*).

**1513** 9:30 Characterization of a *Porphyromonas gingivalis* W50 *rgpA-rgpB* Protease Gene Mutant. J. ADUSE-OPOKU\*, M. RANGARAJAN, A. GALLAGHER, and M.A. CURTIS (*MRC Molecular Pathogenesis Group, Saint Bartholomew's and Royal London School of Medicine and Dentistry, England, UK*).

**1514** 9:45 Diversity in the Glycosylation of Arg-x Proteases of *P. gingivalis*. M. RANGARAJAN\*, N. PARAMONOV, E.F. HOUNSELL, and M.A. CURTIS (*MRC Molecular Pathology Group, Saint Bartholomew's and Royal London School of Medicine and Dentistry; and Department of Biochemistry and Molecular Biology, UCL, London, England, UK*).

**1515** 10:00 Induction of Immunity Using a Non-virulent *recA*-defective Mutant of *Porphyromonas gingivalis* W83. H.M. FLETCHER\* (*Loma Linda University, CA, USA*).

**1516** 10:15 *Porphyromonas gingivalis* Lipopolysaccharide Delays Neutrophil Apoptosis *in vitro*. P.M. PRESHAW\*, R.E. SCHIFFERLE, and J. WALTERS (*Ohio State University, Columbus; and State University of New York, Buffalo, USA*).

**1517** 10:30 Supra- and Subgingival Plaque Composition in Health and Periodontitis. L.A. XIMENEZ-FYVIE\*, A.D. HAFFAJEE, S. SOM, and S.S. SOCRANSKY (*Forsyth Dental Center, Boston, MA, USA*).

**1518** 10:45 Comparative Microflora of Adult and Early-onset Periodontitis. I.B. DARBY\*, P.J. HODGE, M.P. RIGGIO, and D.F. KINANE (*Periodontology and Oral Immunology Research Group, Glasgow Dental School, Scotland, UK*).

**Seq#: 165**      **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Room 2**

**Pharmacology, Therapeutics, & Toxicology - General Topics**

**Chairpersons: C. Flores and P. Antony Raj**

**1519** 9:00 Identification and Quantification of Some Potentially Antimicrobial Anionic Components in *Salvadora persica* Extracts Using Capillary Electrophoresis. I. DAROUT\*,

A. CHRISTY, and N. SKAUG (*University of Bergen and Agder College, Kristiansand, Norway*).

**1520** 9:15 Defensin Fragments Elicit Bactericidal Activity against Oral Pathogens. P. ANTONY RAJ\*, T. KARUNAKARAN, and K.J. ANTONY RAJ (*School of Dentistry, Marquette University, Milwaukee, WI; and Oral Biology, Periodontal Disease Research Center, State University of New York, Buffalo, USA*).

**1521** 9:30 Oral Manifestations of Cyclosporin and Methotrexate in Rheumatoid Arthritis Patients. D.F. McCLOY\*, A. CHALMERS, K.K. RANGNO, and B.J. CRAIG (*University of British Columbia; and The Arthritis Society, Vancouver, BC, Canada*).

**1522** 9:45 *In vitro* Measurements of Salivary Bisphenol A, BIS-DMA, and TEGDMA: A Pilot Study. J.C. ATKINSON\*, G.K. JONES, F.C. EICHMILLER, S.H. DICKENS, R.H. SELWITZ, and S.R. PILLEMER (*NIDCR/GTTB, Bethesda, MD; NDRI, Great Lakes, IL; ADAHF/PRC, Gaithersburg, MD; and NIDCR/HPADB, Bethesda, MD, USA*).

**1523** 10:00 Bis-phenol A Leached Out of Dental Materials. A. MANABE\*, S. KANEKO, S. NUMAZAWA, K. ITOH, R. SASA, T. YOSHIDA, M. INOUE, and H. HISAMITSU (*Schools of Dentistry and Pharmaceutical Science, Showa University, Japan*).

**1524** 10:15 NMDA Modulation of Capsaicin-evoked iCGRP Release from Dental Pulp. M.R. KOBAYASHI\*, N.I. IMTHURN, and D.L. JACKSON (*University of Washington, School of Dentistry, Seattle, USA*).

**1525** 10:30 A Pharmacological Basis for Tobacco-related Inflammation within the Oral Cavity. C.M. FLORES\*, S. KILO, G.O. DUSSOR, A.S. LEONG, N.B. GRACIA, Y.M. ULRICH, and K.M. HARGREAVES (*University of Texas Health Science Center at San Antonio Dental School, USA*).

**1526** 10:45 Systemic Exposure to Gold Released from Dental Gold Alloys. L. BJÖRKMAN\* and B. LIND (*Department of Dental Toxicology and Institute of Environmental Medicine, Karolinska Institutet, Stockholm, Sweden*).

**Seq#: 166**      **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Room 10**

**Prosthodontics - Dowel-Core Design/Adhesive Cements & Crown Retention**

**Chairpersons: J. Holloway and A. Maya**

**1527** 9:00 Effects of EDTA/NaOCl and Resin Cement on Post Tooth Retention. P. MILLSTEIN\*, B. ROBISON, and C. RANKIN (*Tufts University School of Dental Medicine, Boston, MA, USA*).

**1528** 9:15 Comparing Post Core Retention with Post Head Diameter. P. MILLSTEIN, A. MAYA, Y. FREEMAN\*, and J. O'LEARY (*School of Dental Medicine, Tufts University, Boston; and Department of Mechanical Engineering, Tufts University, Medford, MA, USA*).

**1529** 9:30 Retention and Load Transfer Characteristics of Zirconium Dioxide Endodontic Dowels. T.C. SNYDER\* and A.A. CAPUTO (*Biomaterials Science, University of California at Los Angeles School of Dentistry, USA*).

**1530** 9:45 Effect of Heat Treatment on the Microstructure of a Zirconia-containing Ceramic for Posts and Cores. J.A. HOLLOWAY\* and I.L. DENRY (*Ohio State University, Columbus, USA*).

**1531** 10:00 Determining Resin-ionomer Cement Crown Retention to Primer-treated Composite Cores. P. MILLSTEIN, A. MAYA\*, and J. O'LEARY (Tufts University School of Dental Medicine, Boston, MA; and Tufts University Department of Mechanical Engineering, Medford, MA, USA).

**1532** 10:15 Retentive Properties of Adhesive Luting Cements for Complete Cast Crowns. M. AYAD, M. BAHABRI\*, and S. ROSENSTIEL (Elite Medical and Surgical Center, Riyadh, Saudi Arabia; and Ohio State University, Columbus, USA).

**1533** 10:30 *In vitro* Study on Adhesive Core Materials under Crowned Teeth. P. RAMMELSBERG\*, M. ABUELYAN, P. POSPIECH, and K. ERDEL (Department of Prosthodontics, University of Munich, Germany).

**1534** 10:45 Porcelain Veneers: Dentin Bonding Optimization and Biomimetic Recovery of the Crown. P. MAGNE\* and W.H. DOUGLAS (University of Geneva, Switzerland; and MDRCBB, University of Minnesota, Minneapolis, USA).

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**Seq#: 167** **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Room 18**

**Pulp Biology - Pulp: Restorative and Deciduous, Inflammation**

**Chairpersons: H. Goodis and C. Cox**

**1535** 9:00 Pulpal Response to Er:YAG Laser Following Accidental Exposure. J.K.D.J.A.U. JAYAWARDENA\*, J. KATO, K. MORIYA, and Y. TAKAGI (Department of Pediatric Dentistry, Tokyo Medical and Dental University, Japan).

**1536** 9:15 Drill Speed Effects on Pulpal Activity Following Dentin Cavity Preparation. P.E. MURRAY\*, A.J. SMITH, P.J. LUMLEY, H.F. ROSS, and T.W. SMYTH (University of Birmingham, UK; and University of Minnesota, Minneapolis, USA).

**1537** 9:30 Pulp Reactions to Long-term Dental Restorations Exhibiting Secondary Caries. A. ZOELLNER\* and P. GAENGLER (School of Dental Medicine, University of Witten/Herdecke, Germany).

**1538** 9:45 Relation between Fluoride Intake and Pulpal Calcification in Primary Teeth. E.A. HOLTGRAVE\*, W. HOPFENMÜLLER, and S. AMMAR (Orthodontic Department and Department of Statistics and Documentation, Free University Berlin, Germany).

**1539** 10:00 Clinical and Radiographic Evaluation of Deciduous Teeth after Endodontic Therapy. R. BARONI\*, M.J.C. ROCHA, and I.C.S. ALMEIDA (School of Dentistry, Santa Catarina Federal University, UFSC, Brazil).

**1540** 10:15 The Relationship between Extent of Carious Involvement of the Marginal Ridge and Pulp Inflammation in Primary Molars. M.S. DUGGAL\*, A. NOOH, and A. HIGH (Department of Paediatric Dentistry and Dental Surgery, Leeds Dental Institute, UK).

**1541** 10:30 Biocompatibility of DC-PRIMER, DC-BOND, and AP-X Systems in Monkey Teeth. C.F. COX\*, A.A. HAFEZ, H. KOPEL, S. NIMER, L. AVSAR, and B. TARIM (Departments of Restorative Pedodontics, Periodontics, and Biomaterials, University of Alabama at Birmingham Dental School; University of Southern California, Los Angeles, USA; and Istanbul University, Turkey).

**1542** 10:45 Biocompatibility of KREATIV PowerGel and Kuring Systems on Non-human Primate Pulp. A.A. HAFEZ\* and C.F. COX (Departments of Restorative Dentistry and

*Biomaterials, University of Alabama at Birmingham School of Dentistry, USA).*

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**Seq#: 168** **Friday, March 12, 9:00 am - 11:00 am**  
**Oral Session, Room 16**

**Salivary Research - Saliva/Disease**

**Chairpersons: W. Niedermeier and D. Scheibe**

**1543** 9:00 The Mineralization Function of Saliva and Caries in Children. N. KRUPNYK\* and N. SMOLYAR (Department of Children's Dentistry, Medical University, L'viv, Ukraine).

**1544** 9:15 Salivary Flow in Caries-free and Caries-active Down Syndrome Children. D.F. SCHEIBE\*, B. MACÊDO, R. HOWLAND, G. ROSIVACK, and J. STONE (Department of Pediatric Dentistry, NJ Dental School, Newark, USA).

**1545** 9:30 Multicomponent Analysis of Saliva by 2D NMR Methods. C. SILWOOD\*, M. GROOTVELD, and E. LYNCH (Inflammation Research Group and Conservative Dentistry, Saint Bartholomew's and Royal London School of Medicine and Dentistry, England, UK).

**1546** 9:45 Saliva Flow and Morphometric Findings of Oral Epithelial Tissues. W. NIEDERMEIER\*, A. BRINNINGER, and M. FARTASCH (School of Dental and Oral Medicine, University at Cologne; and Department of Dermatology, University of Erlangen-Nuremberg, Germany).

**1547** 10:00 Effect of Saliva on Tannin-dependent Pigmentation. G.R. GERMAINE\*, J.R. MILLER, and S.J. JOHNSON (Department of Oral Science, School of Dentistry, University of Minnesota, Minneapolis, USA).

**1548** 10:15 Intake of Fluids and Its Effect on Saliva Flow Rates. M. LAMEK, P. HERMANUTZ\*, and W. NIEDERMEIER (School of Dental and Oral Medicine, University at Cologne, Germany).

**1549** 10:30 Subjective Xerostomia in Long-term Survivors after Pediatric Bone Marrow Transplantation. M. BÅGESUND\*, J. WINIARSKI, and G. DAHLLÖF (Department of Pediatric Dentistry, School of Dentistry, Karolinska Institutet, Stockholm, Sweden).

10:45 Discussion

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**Seq#: 169** **Friday, 11:00 am – 12:30 pm**  
**Workshop #3, Room 10**

**NIDCR – Enhancing Communications between the NIDCR and the International Dental, Craniofacial, and Oral Research Communities.**

**Chairperson: D. Mangan**

**1550** 11:00 Opening Comments.  
11:05 Scientific Program Information Presented by NIDCR Staff.  
11:30 Breakout and Discussion Sessions by All Participants.  
12:00 Group Reports and Summation by All Participants.

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**Seq#: 170** **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Pulp Biology - Dentin, ECM, Connective Tissue, Forensics, Morphology**

**1551** Dentinal Fluid Flow Recorded with an Impression Technique *in vitro*. V. KERDVONGBUNDIT, S. SOO-AMPON\*, N. VONGSAVAN, and B. MATTHEWS (Faculty of Dentistry, Mahidol University, Bangkok, Thailand; and Department of Physiology, University of Bristol, UK).

**1552** Dynamic Fluid Flow in Dentinal Tubules: A 3-D FEM Pilot Study. S.C. KHERA\*, V.K. GOEL, Y. LEI, and I. DIAZ (University of Iowa Colleges of Dentistry and Engineering, Iowa City, USA).

**1553** Topical Application of Warm Oxalate to Exposed Human Dentin *in vivo*. W. HONGPAKMANOON, N. VONGSAVAN\*, and M. SOO-AMPON (Department of Hospital Dentistry and Physiology and Biochemistry, Faculty of Dentistry, Mahidol University, Bangkok, Thailand).

**1554** Post-natal Changes of Hyaluronan and Versican in Rat Dental Pulp. S. SHIBATA\*, S. YONEDA, and Y. YAMASHITA (Tokyo Medical and Dental University, Japan).

**1555** DMP1 is Dominantly Expressed in Developing Mouse Mineralized Tissues. J. GAIKWAD, H. KAPADIA\*, A. CAVENDER, M. MacDOUGALL, L.W. FISHER, and R. D'SOUZA (University of Texas Health Science Center-Dental Branch, Houston and San Antonio; and National Institute of Dental and Craniofacial Research/National Institutes of Health, Bethesda, MD, USA). (1998 AADR Student Fellowship Recipient)

**1556** Expression of Connexin, Osteocalcin, and Cbfa1 in Dental Pulp. T. MURAMATSU\*, H. HAMANO, T. INOUE, and M. SHIMONO (Department of Pathology, Oral Health Science Center, Tokyo Dental College, Chiba, Japan).

**1557** Connexin Expression in Rat Dentin/Pulp Complex Cells. S. MURAKAMI\*, T. MURAMATSU, T. INOUE, and M. SHIMONO (Department of Pathology, Oral Health Science Center, Tokyo Dental College, Chiba, Japan).

**1558** Splice Variants of Nestin in Human Dental Pulp Tissue. M. SLAVEN\*, K. GU, and R.B. RUTHERFORD (School of Dentistry, University of Michigan, Ann Arbor, USA).

**1559** Characterization of Tyrosylprotein Sulfotransferase from Human and Rat Pulp Cells. R. LORINO\*, L. GRIECO, P. RAMAPRASAD, E. KUMAR, F. PANAGAKOS, and C. KASINATHAN (Dental Research Center, New Jersey Dental School, University of Medicine and Dentistry of New Jersey, Newark, USA).

**1560** Analysis of DNA from Teeth Exposed to Various Environmental Conditions. H.A. PADA\*, D.P. HILDEBRAND, and D.J. SWEET (Bureau of Legal Dentistry, University of British Columbia, Vancouver, Canada).

**1561** Morphology of the C-shaped Root in Mandibular Second Molars. F.H. CHUANG\*, R.T. ROAN, W.J. ROU, and G.L. HOU (Department of Conservative Dentistry, Kaohsiung Medical College, Taiwan, ROC).

**Seq#: 171** Friday, March 12, 11:00 am - 12:15 pm  
Poster Session, Exhibit Hall B&C

**Prosthodontics - Reinforced Composites, Provisional Resins, Porcelain Repair —Mechanical Properties, Bond Strength & Microleakage**

**1562** Effect of Location in Light-curing Unit on DC and MOR. T.H. CHAMBERLAIN\*, J.A. SORENSEN, and S.R. DYER (Fixed Prosthodontics Department, School of Dentistry, Oregon Health Sciences University, Portland, USA).

**1563** Changes in Microhardness of Provisional Fixed Prosthodontic Materials. A.H. JONES\*, J.T. DUNNE, and A.M. DIAZ-ARNOLD (University of Iowa, Iowa City, USA).

**1564** The Effects of Thermal Cycling and Storage Parameters on the Ultimate Tensile Strength of Provisional Resin Crown Materials. D. EHRENBERG\* and S. WEINER (UMDNJ—New Jersey Dental School, Newark, USA).

**1565** Chemically Cured Acrylic with Antibacterial Properties. S.A. NATHOO\*, L.M. STEINBERG, G.M. KOWITZ, and R.E. MONTGOMERY (New Jersey Dental School, Newark; University of California, Los Angeles; and OraCeutical LLC, Monterey, MA, USA).

**1566** Selected Physical Properties of Five Provisional Resins for Fixed Restorations. M. GONGORA, G. BERNAL\*, C.A. MUNOZ, and R. FELLER (Javeriana University, Colombia, South America; and Loma Linda University, CA, USA).

**1567** Ceramo-Metal Interface: Microleakage and Gap Evaluation under Optical Microscope. A.F. QUINTAS\*, V. GIANNINI, D.R. SANTOS, I. BALDUCCI, and M.A. BOTTINO (Dental Materials and Prosthodontics Department-UNESP São José dos Campos, Brazil).

**1568** *In vitro* Microleakage of Targis-Vectris Crowns after Cyclic Loading. E. KNOX\* and T.J. LINDQUIST (Department of Prosthodontics, University of Iowa, Iowa City, USA).

**1569** Shear Loads of Indirect Composite Material to Casting Alloys. E. PAPAZOGLU, M.M. STAVRIDAKIS, M. VAN PUTTEN\*, and R. SEGHI (College of Dentistry, Ohio State University, Columbus, USA).

**1570** The Effect of Dynamic Loading on the Microleakage of Fiber-reinforced Composite Crowns. S. VILLARROEL\*, S. UPPITURI, J. YANICH, and R. SEGHI (College of Dentistry, Ohio State University, Columbus, USA).

**1571** Fiber-reinforced FPD vs. Experimental Ceramic/Fiber-reinforced FPD. M. ROSENTRITT\*, M. BEHR, R. LANG, and G. HANDEL (Department of Prosthetic Dentistry, University of Regensburg, Germany).

**1572** *In vitro* Examination of Polyethylene-fiber Reinforced Composite Bridges. C. KOLBECK\*, M. ROSENTRITT, M. BEHR, R. LANG, and G. HANDEL (Department of Prosthetic Dentistry, University of Regensburg, Germany).

**1573** Clinical Outcomes on Fractured Ceramic-fused-to-Metal Restorations Repaired with an Intra-oral Silica Coating Method. M. ÖZCAN\*, P. PROAÑO, A. SCHULZ, and W. NIEDERMEIER (School of Dental and Oral Medicine, Cologne, Germany).

**1574** Porcelain-repair Composite Bond Strength to Metal and Porcelain with the Rocatec System. C.D. ROBIN\*, S.S. SCHERRER, and U.C. BELSER (School of Dentistry, University of Geneva, Switzerland).

**Seq#: 172** Friday, March 12, 11:00 am - 12:15 pm  
Poster Session, Exhibit Hall B&C

**Prosthodontics - Fixed Prosthodontics—General**

**1575** Reasons for the Placement and Replacement of Restorations in Singapore. A. WONG\*, R. CRAVEN, T.V.

- MACFARLANE, I.A. MJÖR, and N.H.F. WILSON (*University of Manchester, UK; and University of Florida, Gainesville, USA*).
- 1576** Reasons for Placing and Replacing Crowns in General Dental Practice. N. WILSON\*, T.V. MACFARLANE, I.A. MJÖR, and N.H.F. WILSON (*University of Manchester, UK; and University of Florida, Gainesville, USA*).
- 1577** Pattern of Bridgework in General Dental Practice in the U.K. A. AMINIAN\*, P. BRUNTON, H. WORTHINGTON, and N.H.F. WILSON (*University of Manchester, England, UK*).
- 1578** Movement of Teeth Adjacent to Untreated Posterior Bounded Edentulous Spaces. K.L. GRAGG\*, D.A. SHUGARS, J.D. BADER, and B.A. WHITE (*University of North Carolina, Chapel Hill; and Kaiser Permanente Center for Health Research*).
- 1579** 12-year Follow-up Study of Silicoated Resin-bonded Fixed Partial Dentures. A. KETABI\*, T. KAUS, C. BERGBREITER, and L. PRÖBSTER (*Department of Prosthodontics, University of Tübingen, Germany*).
- 1580** Fracture Toughness of PFM Crowns with Porcelain Margins. S. RINKE, J. ROTHAUT\*, F. SCHÄFERS, and A. HÜLS (*ZMK-Klinik, Abt. Prothetik II, University of Göttingen; and DEGUSSA AG, Hanau, Germany*).
- 1581** Calculated Dimensions of 3-unit Fixed Partial Dentures. E. TASHKANDI\*, W.J. O'BRIEN, and E. HILL (*School of Dentistry, University of Michigan, Ann Arbor, USA*).
- 1582** Effect of Alloy Surface Treatment on Bond Strength of a Ni/Cr/Ceramic Interface. A. JOHNSON\*, J.D. GRAHAM, M.Y. SHAREEF, D.G. WILDGOOSE, and G. CANNAVINA (*Department of Restorative Dentistry, University of Sheffield, UK*).
- 1583** Labial Shoulder Geometry and Emergence Angle of Metal Ceramic Crowns. K. SEYMOUR\*, D. SAMARAWICKRAMA, L. ZOU, E. LYNCH, and V. JOVANOVSKI (*Conservative Dentistry, Saint Barthomolew's and Royal London School of Medicine and Dentistry, England, UK*).
- 1584** Assessment of VitaPan Classical Shade Guide Tabs in CIE L\*a\*b\* Using the PR650 Spectrophotometer. E.A. RENO\*, R.A. BAKER, T.W. WEISBROD, and L.L. ODIOSO (*Procter & Gamble, Cincinnati, OH, USA*).
- 1585** Color Match of Machinable Ceramics for Cerec II Crowns. S. REICH\*, M. HERRGUTH, and H. BRAUNER (*Polyclinic for Prosthetic Dentistry, University of Erlangen, Nuremberg, Germany*).
- 1586** Tooth Particle Generation Associated with Finishing Procedures. A.F. GOLDBERG, H. LAPIDOW\*, H.T. LOEVY, and L. TASCHINI (*Veterans Affairs Medical Center, North Chicago; University of Illinois at Chicago; and Northwestern University School of Dentistry, Chicago, IL, USA*).
- 1587** Effect of pH on Endotoxin Affinity for Metal-Ceramic Alloys. K.L. KNOERNSCHILD, K. THORNE, S.D. CAMPBELL, and J.P. EDMONDS\* (*Department of Restorative Dentistry, University of Illinois at Chicago, USA*).
- 1588** Endotoxin Affinity for Metal-Ceramic Alloys based upon Treatment Concentration. K.L. KNOERNSCHILD\*, K. THORNE, S.D. CAMPBELL, J.P. EDMONDS, and A. OBREZ (*University of Illinois at Chicago, USA*).
- 1589** Microleakage of Flowable Composites (an *in vitro* study). A.M. COSTA\*, P.M. YAMAGUTI, R.P. AVELAR, and L.M. DE PAULA (*University of Brasilia-UnB, Brazil*).
- 1590** Leakage and Penetration of Experimental Hydrophilic Sealants to Moist Enamel. J. DONALDSON-MANNING\*, J.R. GALLO, X. XU, and J.O. BURGESS (*School of Dentistry, LSU-MC, New Orleans, LA, USA*).
- 1591** Marginal Leakage in Chemically- and Light-cured Resin Composite Restorations. E.B. FRANCO and S.S. SÁBIO\* (*Bauru Dental School, University of São Paulo, Brazil*).
- 1592** An *in vitro* Evaluation of Microleakage around Class V Esthetic Restorations. G.C. SALES\*, E. PISANECHI, K. DIAS, and S. SOUSA (*Dental School at PUC Campinas University; and Dental School at Rio de Janeiro University, Brazil*).
- 1593** Effects of Rotary Instruments on Microleakage of Composite Restorations. M. PARAÍZO\*, A.J.F. RIBEIRO, M.S. MIRANDA, and K. DIAS (*Universidade do Estado do Rio de Janeiro and Brazilian Navy, Brazil*).
- 1594** Microleakage of Three Universal Adhesives used as Sealants. M.F. WITZEL\*, J.M. SINGER, and R.H.M. GRANDE (*Dental Materials and Statistics Departments, University of São Paulo, Brazil*).
- 1595** Effect of NaOCl Dentin Treatment on Microleakage of Composite Resin Class V Restorations. M. TOLEDANO\*, J. PERDIGÃO, E. OSORIO, and R. OSORIO (*University of Granada, Spain; and University of North Carolina, Chapel Hill, USA*).
- 1596** Effects of Four Adhesive Systems on Microleakage of Composite Resin Class V Restorations. R. OSORIO\*, J.I. ROSALES, and M. TOLEDANO (*University of Granada, Spain*).
- 1597** Gingival Microleakage and Gap Size in Class V Composite Inlays. W.D. BROWNING and K.E. JACKSON\* (*Medical College of Georgia, Augusta, USA*).
- 1598** Microleakage of Compomer Cervical Restoration under Thermocycling and Simultaneous Repeated Load. S. NAKAMURA\*, T. KIMISHIMA, J. SHIMIZU, Y. NARA, H. TANAKA, and I.L. DOGON (*Nippon Dental University, Japan; and Harvard School of Dental Medicine-Forsyth Dental Center, Boston, MA, USA*).
- 1599** Microleakage of Ethanol- and Acetone-based Dentin Bonding Agents. N. BARGHI, F. GARCÍA-GODOY, and J. RUÍZ\* (*Department of Restorative Dentistry, University of Texas Health Science Center at San Antonio, USA; and Santiago, Chile*).
- 1600** Microleakage Evaluation of Three Class II Composite Restorative Techniques *in vitro*. A. PAPATHANASIOU\*, S. KASTALI, G. KUGEL, D. BARDWELL, and E. HURLEY (*Tufts University School of Dental Medicine, Boston, MA, USA*).
- 1601** Effects of Curing Lights on Microleakage in Class V Composite Restorations. C. LALSINGH, E. HURLEY\*, M. HASSAN, R. TRUSHKOWSKY, G. KUGEL, and C. LEONE (*Tufts University School of Dental Medicine, Boston, MA, USA*).
- 1602** The Effect of an Experimental One-application Self-conditioning Adhesive on Microleakage. M.F. NUNES\*, J. PERDIGÃO, and B.T. ROSA (*Department of Operative Dentistry, University of North Carolina at Chapel Hill, USA*).
- 1603** Microleakage of Condensable Composite Resins Combined with a Flowable Composite. W.G. MIRANDA, Jr.\*, M.F. NUNES, P.E.C. CARDOSO, and J.F.F. SANTOS (*Department of Dental Materials, University of São Paulo, Brazil*).

**Seq#: 173**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Microleakage**

**1604** *In vitro* Study of Microleakage of a New Self-etching Adhesive System. R. SOLIS\*, M.A. SARAVIA, and M.F. DE GÓES (School of Dentistry, Universidad Peruana Cayetano Heredia, Lima, Perú-UNICAMP, Piracicaba, SP, Brazil).

**Seq#: 174**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Ceramics: Evaluation of Fixed Prostheses, Surface Roughness and Color**

**1605** Clinical Assessment of High-strength, All-ceramic Crowns. D.R. HASELTON\*, A.M. DIAZ-ARNOLD, M.W. LOGUE, H. KUO, and S.L. HILLIS (College of Dentistry and Department of Statistics, University of Iowa, Iowa City, USA).

**1606** Evaluation of Conventional and Copy-milled All-ceramic Crowns. S.M. JEONG\*, D.W. KANG, and A. HÜLS (Department of Prosthodontics, Chosun University Clinic, Kwangju, Korea; and Department of Prosthodontics, University of Göttingen, Germany).

**1607** Comparative Strength Measurements for All-ceramic Crowns on Dental Implants. H. BRAUNER\*, S. HECKMANN, and P. GREIL (Department of Prosthodontics, Dental Clinic, and Department of Materials Science, Glass & Ceramics, University of Erlangen-Nuremberg, Germany).

**1608** Fracture Resistance of Dentin-bonded Crowns Constructed in a Leucite-reinforced Ceramic. F.J.T. BURKE\* (University of Glasgow Dental School, Scotland, UK).

**1609** *In vitro* Investigations on the Fracture Strength of All-ceramic Posterior Bridges of Empress 2. P. POSPIECH, P. ROUNTREE\*, F. UNSÖLD, and P. RAMMELSBURG (Department of Prosthodontics, Ludwig-Maximilians-University of Munich, Germany).

**1610** Luting Cements Using Fixed Prosthesis. Microleakage Study. H.R. VALVERDE and M.A. SARAVIA\* (Universidad Peruana Cayetano Heredia, Lima—Perú).

**1611** Surface Roughness of Three Dental Porcelains after Different Surface Treatments. J.J. HERRERA, J.D. LAFUENTE, and K. LORIA\* (School of Dentistry, University of Costa Rica, San José).

**1612** Atomic Force Microscope (AFM) Study of Ceramic Surfaces. A.S. TREVIÑO\*, A. FERNÁNDEZ-PEDRERO, E.G. MEDINA, and O. ALVAREZ-FREGOSO (Facultad de Odontología and Instituto de Investigación en Materiales, UNAM, Mexico).

**1613** Post-adjustment Polishing of CAD-CAM Ceramic with Diamond Paste. M.J. NOACK\* and W.J. FINGER (School of Dentistry, University of Cologne, Germany).

**1614** A Comparative Study of the Etched and Polished Surfaces of Two Dental and an Experimental Ceramic. M. ETMAN\*, S.E. NORTHEAST, and R. VAN NOORT (Department of Restorative Dentistry, School of Clinical Dentistry, University of Sheffield, UK).

**1615** Effect of Acid-etching on Porcelain Wettability and Roughness. F.S. AGUILERA\*, R. OSORIO, M. TOLEDANO, M.A. CABRERIZO, and F. GARCÍA-GODOY (University of Granada, Spain; and UTHSC, San Antonio, TX, USA).

**1616** Relationships between Translucency and Color Parameters of Porcelain Shades. W.M. JOHNSTON, M.L. GROSKO\*, and E.Y. KANG (College of Dentistry, Ohio State University, Columbus, USA).

**1617** Correlation among Light Absorption, Color, and Thickness for Dicor Glass-ceramics. S.A. ANTONSON\*, M.C.K. YANG, and K.-J.M. SÖDERHOLM (Departments of Dental Biomaterials and Biostatistics, University of Florida, Gainesville, USA).

**1618** Colorimetric Changes of Ceramic Blocks after Polishing and Glazing. B.H. CHO\* (Department of Conservative Dentistry, College of Dentistry, Seoul National University, Korea).

**1619** Evaluation of Dental Ceramics Using Light-curing Molding Liquids. K.M. KIM\* and K.N. KIM (Department of Dental Materials, College of Dentistry, Yonsei University, Seoul, Korea).

**Seq#: 175**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Clinical Trials**

**1620** Evaluation of Class II Composite and Ceramic Restorations *in vivo* and *in vitro*. W. KLIMM\*, U. WOLFF, and I. NATUSCH (University Clinic of Operative Dentistry, Dresden, Germany).

**1621** Total Bonding of Direct Posterior Composite Restorations—Two-year Results. N. KRÄMER\*, R. FRANKENBERGER, J. EBERT, and A. PETSCHLIT (Poliklinik of Operative Dentistry and Periodontology, University of Erlangen, Germany).

**1622** Clinical Evaluation of a New Ceramic Luting System—Six Months' Follow-up. G. BODENHEIM\*, R. FRANKENBERGER, M. SCHOCH, and N. KRÄMER (Poliklinik for Operative Dentistry and Periodontology, University of Erlangen, Germany).

**1623** Clinical Evaluation of Leucite-reinforced Glass Ceramic Inlays and Outlays after Six Years. R. FRANKENBERGER\*, K. RUMI, and N. KRÄMER (Poliklinik for Operative Dentistry and Periodontology, University of Erlangen, Germany).

**1624** Clinical Long-term Comparison of Amalgam and Composite Restorations. A. STASSINAKIS\*, D. SIEGENTHALER, A. LUSSI, and P. HOTZ (Department of Operative Dentistry, School of Dental Medicine, University of Bern, Switzerland).

**1625** Clinical Performance of Polyglass Fillings in Posterior Teeth after One Year. M. MARTIN\*, C.-P. ERNST, and B. WILLERSHAUSEN (Department of Restorative Dentistry and Periodontology, Johannes Gutenberg University, Mainz, Germany).

**1626** Provisional Posterior Coronal Restorations in an HIV-dedicated Dental Clinic: An Ongoing Longitudinal Evaluation. M. NICHOLS\*, P. BALU, G. GOVIN, C. FLAITSZ, and J. HICKS (Bering Dental Clinic; University of Texas-Houston Dental Branch; and Baylor College of Medicine, USA).

**1627** Clinical Performance of a Polyacid-modified Resin Composite Restorative Material. W.W. BRACKETT\* and W.D. BROWNING (University of Nebraska, Lincoln; and Medical College of Georgia, Augusta, USA).

**1628** Five-year Clinical Performance of Heat- and Pressure-cured Indirect Composite. S.J. O'NEAL\*, D.A. GIVAN, and S. SUZUKI (University of Alabama School of Dentistry, Birmingham, USA).

**1629** Quantitative 3D Wear Analysis of Composite Fillings with and without Inserts. H.-P. FLESSA\*, K.-H. KUNZELMANN, A. MEHL, and R. HICKEL (Department for

*Operative Dentistry, Ludwig-Maximilians-University, Munich, Germany).*

**1630** One-year Clinical Evaluation of a High-density Posterior Restorative. R. PERRY\* and G. KUGEL (*Tufts University School of Dental Medicine, Boston, MA, USA*).

**1631** Clinical Performance of 3 Filled Polymer Crowns with and without Substructures. R.P. CHRISTENSEN\*, S.L. SMITH, D.K. HEIN, and S.H. WOOLF (*Clinical Research Associates, Provo, UT, USA*).

**1632** 2-year Clinical Performance of Six Direct Class 2 Restorative Materials. S.L. SMITH\*, D.K. HEIN, T. AINA, S.H. WOOLF, and R.P. CHRISTENSEN (*Clinical Research Associates, Provo, UT, USA*).

**1633** Clinical Evaluation of Class V Compomer Restorations. C. BENZ, L. KREMERS\*, B. BENZ, and R. HICKEL (*Department of Restorative Dentistry and Periodontology, University of Munich, Germany*).

**1634** Clinical Evaluation of an Experimental Resin Cement. D.S. COBB\*, M.A. VARGAS, G.E. DENEHY, and M.R. BOUSCHLICHER (*University of Iowa, Iowa City, USA*).

**1635** Clinical Evaluation of a Hydrophilic Impression Material. M.A. LATTA, W.T. CAVEL\*, and R.J. BLANKENAU (*Creighton University School of Dentistry, Omaha, NE, USA*).

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**Seq#: 176**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Composite Bond Strength: Compomers, Technique Variables**

**1636** Light-cured Glass Ionomer vs. Composite Resin in Re-attachments. R. LONG\*, J. DEAN, D. ZIMMERMAN, and B.K. MOORE (*Indiana University School of Dentistry, Indianapolis, USA*).

**1637** The Bond Strength and Fluoride Release of Compomers. K. YOSHIKAWA\*, M. SHIRAIISHI, K. YAMAMOTO, M. INOUE, and M. INOUE (*Department of Operative Dentistry, Osaka Dental University, Japan*).

**1638** Tensile Bond Strength of Compomers with a New Adhesion Concept. O. FREY\* and M. HANSEN (*R & D Department, ESPE Dental AG, Seefeld, Germany*).

**1639** Microleakage of Two Compomer Systems in Class V Restorations. D. ESTAFAN\*, M. PINES, P.F. FUERST, and M.C. ERAKIN (*New York University College of Dentistry, NY, USA*).

**1640** Influence of 2% Chlorhexidine on Glass-ionomer Bond Strength. P.L.A. SCABELL\*, F.C. COHEN, H.R. SAMPAIO FILHO, and M. PARAÍZO (*Universidade do Estado do Rio de Janeiro, Brazil*).

**1641** Bonding of Glass Ionomers and Compomer to Unground Enamel and Dentin. Y. MOMOI\*, K. KIDA, and A. KOHNO (*Tsurumi University School of Dental Medicine, Yokohama, Japan*).

**1642** Bond Strength of Glass-ionomer-based Restorative Materials to Fluorosed Dentin. W. AWLIYA and E.S. AKPATA\* (*King Saud University, Riyadh, Saudi Arabia*).

**1643** Effect of Variation in Cure Time on the Bond of Resin-modified Glass-ionomer Orthodontic Cement Bonded to Enamel. L.A. FULSAAS\*, R.D. DAVIS, J.D. OVERTON, and B. CHRISTENSON (*Keesler Medical Center, Keesler AFB, MS, USA*).

**1644** Effect of Surface Treatment on Bonding of Indirect Composite Resin. P. JAIN\*, K. WHITTETT, and G.P. STEWART (*SIU School of Dental Medicine, Alton, IL, USA*).

**1645** Effect on Bond Strength of Different Techniques for Applying Dentin Adhesive. J.D. LAFUENTE, M. NEMA\*, and S.G. RODRIGUEZ (*School of Dentistry, University of Costa Rica, San José*).

**1646** Effects of Simulated Clinical Use on Bond Strengths of One-bottle Adhesives. J. PERDIGÃO, E.J. SWIFT, Jr., and G.C. LOPES\* (*University of North Carolina, Chapel Hill; and Federal University of Santa Catarina, Florianópolis, Brazil*).

**1647** Dentin Bond Strengths Obtained with Two Different Testing Methods. A. RUMPHORST\*, A. GIANASMIDIS, U. SALZ, D. LI, and J.M. POWERS (*Ivoclar-Vivadent AG, Schaan, Liechtenstein; and Houston Biomaterials Research Center, TX, USA*).

**1648** Influence of Bond Area on Shear Bond Testing to Dentin. L.G. WATANABE, A.H. NGUYEN\*, A. HARNER, G.W. MARSHALL, and S.J. MARSHALL (*University of California, San Francisco, USA*).

**1649** Influence of Bonding Area and Crosshead Speed on Dentin Bond. M. MIYAZAKI\*, Y. OSHIDA, K. IWASAKI, H. ONOSE, and B.K. MOORE (*Nihon University, Tokyo, Japan; and Indiana University, Indianapolis, IN, USA*).

**1650** Effect of Cross-head Geometry, Contact, and Thickness on Shear Bond Strength. N. JESSOP\*, C.A. MUNOZ, and J.R. DUNN (*Loma Linda University, CA, USA*).

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**Seq#: 177**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Composite Color Stability and Wear**

**1651** Corrosive Wear of Commercial Composite Resins. N.K. SARKAR, K.-H. YANG\*, J. BHATTACHARYA, R. MOISEYEVA, G. IAZZETTI, and L. LI (*LSU School of Dentistry, New Orleans, LA, USA*).

**1652** *In vitro* Wear Assessment of Compomer Restoratives. W.W. BARKMEIER, S.M. BLAKE\*, T.M. WILWERDING, and M.A. LATTA (*Creighton University, Omaha, NE, USA*).

**1653** *In vitro* Wear of Primary Enamel with Different Restorative Materials. S.C. CHANG\* and D.A. GIVAN (*School of Dentistry, University of Alabama, Birmingham, USA*).

**1654** Occusal Wear of Ariston Class II Restorations. A.C.R. GABRIELLI\*, F.C. PANZERI, S.D. HEINTZE, and R. MÜSSNER (*Dental School of Ribeirão Preto, USP, Brazil; and Ivoclar A.G., Schaan, Liechtenstein*).

**1655** *In vitro* Wear of Enamel and Posterior Restorative Materials. M.H. RAMP\*, D.A. GIVAN, and S.J. O'NEAL (*University of Alabama at Birmingham School of Dentistry, USA*).

**1656** Color Stability of Fluoride-containing Restorative Materials. G. IAZZETTI\* and J.O. BURGESS (*Louisiana State University School of Dentistry, New Orleans, USA; and UFRJ School of Dentistry, Rio de Janeiro, Brazil*).

**1657** Effect of Antimicrobial Ingredient on the Color Stability of Composite. T.K. VAIDYANATHAN, J. VAIDYANATHAN, R. MEHRA\*, R.E. MONTGOMERY, and S.A. NATHOO (*New Jersey Dental School, Newark; and OraCeutical LLC, Monterey, MA, USA*).

**1658** Color Stability of Restorative Materials after Accelerated Aging. R.M. FAY\*, J. MANHART, D. LI, R. HICKEL, and J.M.

POWERS (*University of Texas at Houston Dental Branch, USA; and University of Munich, Germany*).

**1659** Color Stability of Restorative Materials Exposed to Fluoride Varnishes. T. DEBNER\*, D.P. WARREN, and J.M. POWERS (*Houston Biomaterials Research Center, University of Texas at Houston Dental Branch, USA*).

**1660** The Color of Dissimilar Layers of Esthetic Direct Restorative Materials. E.Y. KANG\*, J.C. RAGAIN, and W.M. JOHNSTON (*College of Dentistry, Ohio State University, Columbus, USA; and Naval Dental Research Institute, Great Lakes, IL, USA*).

**1661** Predicting Color Stability of Acrylic Resins Using Electron Spin Resonance. A. HASEGAWA\*, T. HAMANO, S. NAGASAKA, and M. MIWA (*GC Dental Products Corp., Kasugai; and University of Gifu, Japan*).

**Seq#: 178** **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

### **Dental Materials - Composite Degradation and Cellular Response**

**1662** A New Screening Test for Toxicity Testing of Dental Materials. M. PELKA, C. DANZL\*, W. DISTLER, and A. PETSCHT (*Policlinic for Operative Dentistry, University of Erlangen-Nuremberg, Germany*).

**1663** Discoloration of Facing and Filling Materials by UV Irradiation. R. LANG\*, M. ROSENTRITT, M. BEHR, and G. HANDEL (*Department of Prosthetic Dentistry, University of Regensburg, Germany*).

**1664** Extractable Residual Monomers/Additives from Resin-modified GIC and a Polyacid-modified Resin. B. SCHMIDT, P. BUBECK, C. THEILIG, M. SCHMIDT-ROSIECKA, V. NEITEMEIER, J. MUNACK\*, G. LEYHAUSEN, and W. GEURTSSEN (*Department of Organic Chemistry & Dental Hospital, Hannover, Germany*).

**1665** Co-adherence of *Candida albicans* and *Streptococcus mutans* on Polymethylmethacrylate. T. WALTIMO\*, J. TANNER, P.K. VALLITTU, E. SÖDERLING, and M. HAAPASALO (*NIOM, Haslum, Norway; Institute of Dentistry, University of Turku, Finland; and Dental Faculty, University of Oslo, Norway*).

**1666** Effects of Sub-lethal Concentrations of TEGDMA and Bis-GMA on Monocytes. C.A. LEFEBVRE\*, J.C. WATAHA, and S. BOUILLAGUET (*School of Dentistry, Medical College of Georgia, Augusta, USA*).

**1667** Effect of Saliva-like Esterase Activities on Micro-filled Dental Composites. N. PERSHAD\*, N. CHAKRAVARTI, Y. FINER, and J.P. SANTERRE (*Faculty of Dentistry, University of Toronto, ON, Canada*).

**1668** Synergy of Cholesterol Esterase and Pseudocholinesterase on Composite Resin Biodegradation. F. JAFFER\*, Y. FINER, and J.P. SANTERRE (*Faculty of Dentistry, University of Toronto, ON, Canada*).

**1669** Cell Proliferative Responses to Dental Resin Xenostrogenic Compounds. R.M. CIBIRKA\* and G.S. SCHUSTER (*Medical College of Georgia, Augusta, USA*).

**1670** Actimicrobial Activity and its Retention in an Antibacterial Composite. T.K. VAIDYANATHAN, J. VAIDYANATHAN, V.L.N. MURTY\*, R.E. MONTGOMERY, and S.A. NATHOO (*New Jersey Dental School, Newark; and OraCeutical LLC, Monterey, MA, USA*).

**1671** Composite Resin Supplemented with an Antimicrobial Agent. L.M. STEINBERG, D.H. FINE, H. SCHREINER\*, R.E. MONTGOMERY, and S.A. NATHOO (*New Jersey Dental School, Newark; and OraCeutical LLC, Monterey, MA, USA*).

**1672** Antibacterial Activity of a Composite Supplemented with an Antimicrobial Agent. L.M. STEINBERG\*, D.H. FINE, R.E. MONTGOMERY, and S.A. NATHOO (*New Jersey Dental School, Newark; and OraCeutical LLC, Monterey, MA, USA*).

**1673** Altered Clonogenicity and Induction of Apoptotic Cell Death in L929 Cells Exposed to Denture Base Acrylic Resins. M.R. CIMPAN\*, N. SKAUG, B.T. GJERTSEN, and R. MATRE (*University of Bergen, Norway*).

**Seq#: 179** **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

### **Dental Materials - Dental Polymers – Properties**

**1674** The Clinical Use of a Glass Polymer used in Dental Technology. A. SCRASCIA\*, F. ROSSANI, E. CASTIGLIONE, and M. QUARANTA (*Dental School, University of Rome “La Sapienza”, Italy*).

**1675** Itaconic Anhydride Modification of Polyoxypropylene Diamine for Dental Applications (II). B.M. CULBERTSON, Q. WAN\*, and S. SCHRICKER (*College of Dentistry, Ohio State University, Columbus, USA*).

**1676** Itaconic Anhydride Modification of Polyoxypropylene Diamine for Dental Applications (I). B.M. CULBERTSON\*, Q. WAN, and S. SCHRICKER (*College of Dentistry, Ohio State University, Columbus, USA*).

**1677** Preparation and Evaluation of VLC Multi-methacrylates Derived from BPA Resins. A. TIBA\* and B.M. CULBERTSON (*College of Dentistry, Ohio State University, Columbus, USA*).

**1678** Determination of Polymerization Shrinkage Stress in Low Shrinkage Epoxy Resins. D.C. KRENKEL\*, J.D. EICK, G.M. KAUFMAN, and C.Q. BOWLES (*School of Dentistry, University of Missouri—Kansas City, USA*).

**1679** Variables Affecting the Watts Method of Measuring Polymerization Shrinkage. G.A. LAUGHLIN\*, A. GLAROS, D.C. KRENKEL, and J.D. EICK (*University of Missouri, Kansas City, USA*).

**1680** Experimental Photocurable Adhesive Formulations Containing Expanding Monomers and Reaction Promoters. C.S. PINZINO\*, C.C. CHAPPELOW, J.D. OXMAN, J.A. MORRILL, M.D. POWER, and J.D. EICK (*Midwest Research Institute, Kansas City, MO; University of Missouri, Kansas City; and 3M Company, St. Paul, MN, USA*).

**1681** Influence of Shrinkage Stress on Network Structure of Photo-cured Resin. F.W. WANG\* and K. KOMATSU (*National Institute of Standards and Technology, Gaithersburg, MD, USA; and Nihon University, Chiba, Japan*).

**1682** Physical Change Elicited by Microwave Processing in Previously Polymerized Resins. W. GARDNER\* and W.G. DE RIJK (*University of Texas Health Science Center at San Antonio, USA*).

**1683** Comparison of Various Resins Used for Provisional Restorations. M. GAUSMANN\*, P. KELLER, B. WÖSTMANN, and P. FERGER (*Dental Clinic, Department of Prosthodontics, Justus-Liebig-University, Giessen, Germany*).

**1684** Microwave-cured Acrylic Resins and Silicone-Gypsum Molding Technique. A.A. DEL BEL CURY, R.N. RACHED\*,

S.M. GANZAROLI, and E.M. FRANCO (*Faculty of Dentistry of Piracicaba, UNICAMP, Brazil*).

**1685** Stress Relaxation Diametral Tensile Tests of Selected Impression Materials. N.L. JACOBSEN, K.H. WYATT\*, M.G. DUNCANSON, Jr., S.S. KHAJOTIA, and P.M. MULLASSERIL (*University of Oklahoma College of Dentistry, Oklahoma City, USA*).

**1686** The Effect of Surface Treatment on Elastomeric Impression Materials. K.N. KIM\*, S.B. LEE, and K.M. KIM (*Department of Dental Materials, College of Dentistry, Yonsei University, Seoul, Korea*).

**1687** Finite Element Analysis of Soft-lined Complete Mandibular Dentures. J.S. SHIM\* and D.C. WATTS (*University of Manchester Dental School, UK*).

**1688** Accuracy of Auto-mix Silicone Impression Materials. Y. KIM, N. KATSUBE\*, C. KIM, K. ITOH, H. HISAMITSU, and S. WAKUMOTO (*School of Dentistry, Showa University, Tokyo, Japan*).

**1689** Linear Dimensional Change of Silicone Impression Materials. C. TRAJTENBERG\*, G. ALIAN, and J.M. POWERS (*University of Texas—Houston Dental Branch, TX, USA; and Ain Shams University, Cairo, Egypt*).

**1690** The Effect of Environment on Five Experimental Soft Liners. T. TAKAMATA\*, T. NOMURA, S. KALACHANDRA, and S. PARKER (*Matsumoto Dental University, Nagano, Japan; Virginia Tech., Blacksburg, USA; and IRC Biomedical Materials, QMW, London, UK*).

**1691** Mechanical Properties of a New Denture Base Polymer, Sinomer®. L.V.J. LASSILA\* and P.K. VALLITTU (*Institute of Dentistry and Biomaterials Project, University of Turku, Finland*).

**1692** Rheological Properties of Different Type 3 PVS Impression Materials. J. ZECH\* and B. REUSCH (*ESPE Dental AG, Seefeld, Germany*).

**1693** Evaluation of Tear and Peel Strength of Soft Lining Materials. Y. YONEYAMA\*, J.F. McCABE, T. HOSOI, S. ONODERA, and J.G. ROBINSON (*University of Newcastle, UK; and Tsurumi University, Japan*).

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**Seq#: 180**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Properties of Enamel, Dentin; Effects of Bleaching**

**1694** Evaluation of the Application of Fluor Together with Bleaching Treatment: Possible Microstructural Changes of the Enamel and in the Color. A.O.E. KRAUL\*, J. BOCANGEL, N.A. JUNIOR, and E. MATSON (*Department of Operative Dentistry, School of Dentistry, University of São Paulo, Brazil*).

**1695** Changes in Enamel Surfaces after Take-home Bleaching Treatment *in vitro*. C. NAM\*, G. KUGEL, and C. HABIB (*Tufts University School of Dental Medicine, Boston, MA, USA*).

**1696** The Effects of Vital Bleaching on Bonded and Non-bonded Enamel *in vitro*. P. YU, D. BARDWELL\*, and A. ABOUSHALA (*Tufts University School of Dental Medicine, Boston, MA, USA*).

**1697** Evaluating Tooth Color Change at Various Depths with Vital Bleaching. R. JONES\*, G.E. DENEHY, M.A. VARGAS, D.S. COBB, and T. KRENZ (*University of Iowa, Iowa City, USA*).

**1698** Rheological Characteristics of Tooth Bleaching Materials. T. WILLE\*, E.C. COMBE, I.J. PESUN, and D.W.

GILES (*School of Dentistry and Department of Chemical Engineering and Materials Science, University of Minnesota, Minneapolis, USA*).

**1699** Effects of 35% Carbamide Peroxide on Enamel Composition. H. NGO, J. PERDIGÃO, E.J. SWIFT, Jr., and A. TRAN\* (*University of Adelaide, Australia; and University of North Carolina at Chapel Hill, USA*).

**1700** Bleaching Effects on Resin-reinforced Light-cured Glass Ionomer. J. LEE\*, N.J. GRIMAUDO, and C. SHEN (*Department of Dental Biomaterials, College of Dentistry, University of Florida, Gainesville, USA*).

**1701** Studies on the Flexural Strength of Resin-infiltrated Human Dentin. C.W. KIM\*, H.Y. JOO, and B.S. LIM (*Department of Dental Biomaterials, College of Dentistry, Seoul National University, Korea*).

**1702** Reinforcement Mechanism of Dentin Tensile Strength by Intracanal Medicament. F. NAKANO\*, K. TONAMI, H. TAKAHASHI, and F. NISHIMURA (*Department of Dental Technology I, Tokyo Medical and Dental University, Japan*).

**1703** Microstructural Changes in Dentin Irradiated by Er:YAG Laser. N. ARIMOTO\*, A. SUZAKI, K. SAKUMA, S. KASHIHARA, M. YAMADA, and A. SENDA (*Department of Operative Dentistry, School of Dentistry, Aichi-Gakuin University, Japan*).

**1704** Mechanical and Optical Properties of Transparent Non-cariogenic Human Dentin. M. BALOOCH\*, G.W. MARSHALL, G. BALOOCH, J.H. KINNEY, and S.J. MARSHALL (*Lawrence Livermore National Laboratory, CA; and University of California, San Francisco, USA*).

**1705** Experimental and Numerical Analyses of Impulsive Loads to the TMJ Disc. J.C. NICKEL, M.W. BEATTY\*, L.R. IWASAKI, M.J. BRUNO, D.E. FEELY, and K.D. STORMBERG (*College of Dentistry, University of Nebraska, Lincoln; and San Diego, CA, USA*).

**1706** The Effect of a Nonlinear PDL on Center of Rotation. M. DURKEE\*, E.D. REKOW, and V.P. THOMPSON (*Department of Orthodontics, West Virginia University, Morgantown; and Departments of Orthodontics and Prosthodontics & Biomaterials, UMDNJ, Newark, NJ, USA*).

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**Seq#: 181**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Endodontic Materials, Orthodontic Elastics, Mouth Protectors**

**1707** Formaldehyde Release from Three Endodontic Filling Cements. B.L. MUSIKANT\*, B.I. COHEN, M.K. PAGNILLO, and A.S. DEUTSCH (*Essential Dental Laboratories, S. Hackensack, NJ, USA*).

**1708** The Effects of Root-end Filling Materials on Cultured Periodontal Tissue Cells. S.-S. JUE\*, M.-Y. YANG, G.-W. CHOI, and J.-W. SHIN (*Department of Oral Anatomy and Department of Conservative Dentistry, Kyung Hee University, Seoul, Korea*).

**1709** Enzymatic Responses of Human Pulpal Fibroblasts to Pulp Capping Materials. R.C.S. CHEN and D.C.N. CHAN\* (*Department of Dentistry, China Medical College, Taichung, Taiwan, ROC; and Medical College of Georgia, Augusta, USA*).

**1710** Cytotoxicity of MTA Compared with Other Root-end Filling Materials. C.C. JOHNSON\* and K. KEISER (*University of Tennessee, Memphis, USA*).



**1711** The Sealing Ability of Retrograde Filling Materials on a Serum-contaminated and Noncontaminated Surface: Spectrophotometric Study. I. BENJAMIN\*, E. NIXON, and C. SHEN (*College of Dentistry, University of Florida, Gainesville, USA*).

**1712** Biocompatibility of Two Sealer Cements, Grossman Type vs. Glass Ionomer. C.A. GALLARDO\*, J.P. TORRES, C. ESPINOZA, and M.A. SARAVIA (*School of Dentistry, Universidad Peruana Cayetano Heredia, Lima, Perú*).

**1713** The Effects of Bonding Agents on Torsional Resistance of Posts and Cores. A.S. DEUTSCH\*, B.I. COHEN, M.K. PAGNILLO, I. NEWMAN, and B.L. MUSIKANT (*Essential Dental Laboratories, S. Hackensack, NJ, USA*).

**1714** Reconstruction of Endodontically Treated Frontal Teeth with Composite Resin Pivots. A. PAGLIARINI, R. RUBINI\*, M. REA, and M. CAMPESE (*University of Ferrara, Italy*).

**1715** Sealing Ability of Roekoseal<sup>®</sup>-automix under Different Conditions. J. EBERT\*, T. LOEFFLER, H. ZELS, and A. PETSCHT (*Polyclinic of Operative Dentistry and Periodontology, University of Erlangen-Nuremberg, Germany*).

**1716** Mechanical Properties of Orthodontic Latex and Non-latex Elastics. J. ZIMMER, C. LOVELL\*, D. FERGUSON, and V.B. DHURU (*Marquette University School of Dentistry, Milwaukee, WI, USA*).

**1717** Investigation of Using Poly(para-xylylene) Coatings for Chain Modules. R.P. KUSY\*, J.Q. WHITLEY, and R.P. McKAMEY (*Dental Research Center and Orthodontics Department, University of North Carolina, Chapel Hill, USA*).

**1718** DSC Studies of Orthodontic Plastic Modules. I. As-received Products. M.R. RENICK, W.A. BRANTLEY, C.S. WEBB\*, F.M. BECK, K. VIG, and B.M. CULBERTSON (*College of Dentistry, Ohio State University, Columbus, USA*).

**1719** DSC Studies of Orthodontic Plastic Modules. II. *In vitro* and *in vivo* Tests. M.R. RENICK\*, W.A. BRANTLEY, C.S. WEBB, F.M. BECK, K. VIG, and B.M. CULBERTSON (*College of Dentistry, Ohio State University, Columbus, USA*).

**1720** Efficacy of Mouthguard Protection *in vitro*. P. BEMELMANN\* and P. PFEIFFER (*School of Dental and Oral Medicine, University at Cologne, Germany*).

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**Seq#: 182**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Diagnostic Systems - Caries/Osteoporosis/Vision**

**1721** *In vitro* Evaluation of Three Caries Detectors in Human Teeth. G. GLASS\*, C.F. COX, A.A. HAFEZ, and B. TARIM (*Departments of Restorative and Biomaterials, University of Alabama at Birmingham Dental School, USA; and Faculty of Dentistry, Istanbul University, Turkey*).

**1722** Detection of Proximal Enamel Surface Caries by Fluorescein-enhanced Argon Laser Fluorescence. C.A. MURDOCH-KINCH\*, J. HESS, and J. GEIST (*School of Dentistry, University of Detroit Mercy, MI, USA*).

**1723** Digital Image Analysis: Quantitative Measurement of Non-cavitated Smooth-surface Enamel Lesions. W.S. BORGNACKE\*, S.C.S. PAI, L. NYQUIST, and R.A. BAGRAMIAN (*School of Dentistry, University of Michigan, Ann Arbor, USA*).

**1724** Imaging Analyses Accessing Plaque Prevention Due to Polymer Bonded to Enamel. C.C. KO\*, D. RESCH, T. NGUYEN,

S.M. ROZZI, S.B. MITRA, and W.H. DOUGLAS (*MDRCCB, University of Minnesota, Minneapolis, USA*).

**1725** Assessment of Clinical System for Diagnosis *in vivo* of Deciduous Molars' Occlusal Caries. A.R. ROMANO\* and N. VILLA (*University of São Paulo, Brazil*).

**1726** The Tactile Method in Occlusal Diagnosis and Treatment Decision for Deciduous Molars: An Inter-examiner Study. R.D.N. FONOFF\*, C.A. BARRETO, and A. CHELOTTI (*Pediatric Dentistry Department, Paulista University, and University of São Paulo, Brazil*).

**1727** Validation of Caries Diagnostic Methods for Posterior Approximal Surfaces. D.F. CÔRTEZ\*, E.H. VERDONSCHOT, M.F.L. NAVARRO, R. PASCOTTO, J.B. de SOUZA, and M. COUTINHO (*Gama Filho University, Rio de Janeiro, Brazil; University of Nijmegen, The Netherlands; and Bauru Dental School, São Paulo University, Brazil*).

**1728** Reproducibility and Accuracy of Three Diagnostic Methods in Detecting Occlusal Caries. M. MORELL\* and R.J. FEIGAL (*University of Michigan, Ann Arbor, USA*).

**1729** Radiomorphometric Indices of the Mandible in a Female Population. D. LEDGERTON, K. HORNER, H. DEVLIN\*, and H. WORTHINGTON (*University Dental Hospital of Manchester, UK*).

**1730** Visual Acuity in a Sample of Scottish Dentists. A.H. FORGIE\*, T. GEARIE, C.M. PINE, and N.B. PITTS (*Unit of Dental and Oral Health, Dundee Dental Hospital and School, University of Dundee, Scotland, UK*).

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**Seq#: 183**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Geriatric Oral Research - Salivary Factors, Bone and Dental Hard Tissues in Aging**

**1731** Effect of Amine-stannous Fluorides on Some Oral Microbiological and Salivary Findings of the Elderly. K. KARI\*, A. ÄIKÄS, P. KALLIO, and J.H. MEURMAN (*Institute of Dentistry, University of Helsinki, Finland*).

**1732** Whole Stimulated Saliva among Institutionalized Elderly. M. LAMY\*, P. MOJON, G.K. KALYKAKIS, R. LEGRAND, and E. BUDTZ-JØRGENSEN (*CHU, University of Liège, Belgium; and University of Geneva, Switzerland*).

**1733** Salivary Function and Glycemic Control in Older Diabetics and Controls. E.M. CHAVEZ\*, L.N. BORRELL, G.W. TAYLOR, and J.A. SHIP (*School of Dentistry and School of Public Health, University of Michigan, Ann Arbor, USA*).

**1734** Objective and Subjective Measures of Drug-induced Salivary Hypofunction in Young and Older Subjects. M.L. GOODSON\*, E.M. GHEZZI, M.P. BEYRAMIAN, C.C. COTCA, P.S. DIXIT, S.C.S. PAI, E.M. ROSIER, K. SHIMOYAMA, and J.A. SHIP (*University of Michigan, Ann Arbor, USA; University of Newcastle, UK; and Tokyo Medical and Dental University, Japan*).

**1735** Preserved Quality of Life and Saliva Output in Post-radiotherapy Cancer Patients. B.S. HENSON\*, A. EISBRUCH, and J.A. SHIP (*School of Dentistry and Department of Radiation Oncology, University of Michigan, Ann Arbor, USA*).

**1736** A Comparison of Salivary Cytokine Levels and Saliva Function between Pre & Postmenopausal Women. S.T. NORRIS\*, L.G. BIGLER, and C.F. STRECKFUS (*University of Mississippi Medical Center, Jackson, USA*).

**1737** Effects of Aging on Salivary Cytokine Concentrations and Whole Saliva Flow Rates among Women. T.M. O'BRYAN\*, L.G. BIGLER, and C.F. STRECKFUS (*University of Mississippi Medical Center, Jackson, USA*).

**1738** Periodontal Disease in St. Louis, Missouri, in the Early 20th Century. R. SAKASHITA\*, N. INOUE, T. KAMEGAI, and D.R. HUNT (*Kagoshima University Dental School; University of Tokyo; Iwate Medical College, Japan; and National Museum of Natural History, Washington, DC, USA*).

**1739** Jaw Radiographic Bone Density and Skeletal DEXA Correlations. K.A. SOUTHARD\*, T.E. SOUTHARD, J.A. SCHLECHTE, and P.A. MEIS (*University of Iowa, Iowa City, USA*).

**1740** Reduction of Osteoporotic Edentulous Ridge in the Region of Mandibular 1st Molar. S.D. POSTIĆ, N.Z. PILIPOVIĆ, A.L.J. KRSTIĆ\*, and B. KNEZEVIĆ (*Departments of Prosthodontics and Radiology, Faculty of Stomatology; and Institute of Rheumatology, Faculty of Medicine, University of Belgrade, Yugoslavia*).

**1741** Tooth Loss and Bone Mineral Density in Men and Women. E.A. KRALL\*, B. DAWSON-HUGHES, C. RANDALL, and R.I. GARCIA (*Goldman School of Dental Medicine, VA Outpatient Clinic, Boston University; and USDA Nutrition Research Center at Tufts University, Boston, MA, USA*).

**1742** Dentinal Tubules of Young and Elderly Patients. M.A.L. de SOUZA\* and D. PADILHA (*Dental School, UFRGS, Porto Alegre, RS, Brazil*).

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**Seq#: 184**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Behavioral Sciences & Health Services Research - Access To and Utilization of Dental Care**

**1743** Oral Health Policy in Transitional Health Care System. G. ASLANYAN\* and J.L. LEAKE (*Faculty of Dentistry, University of Toronto, ON, Canada*).

**1744** Access to Dental and Medical Services: Mecklenburg County, North Carolina. J.M. KOUNTZ\*, J.S. KAUFMAN, J.A. ESCOTT, and P.B. LOCKHART (*Carolinas Medical Center and Mecklenburg County Department of Social Services, Charlotte, NC, USA*).

**1745** Evaluation of Hygienists' Screening to Allocate Access to Dental Care. J.L. LEAKE\*, P.A. MAIN, S. BIRCH, E. HO, G. WOODWARD, and R. PIMENTAL (*University of Toronto, McMaster University, and Toronto Public Health Department, ON, Canada*).

**1746** Access to Oral Health Care of an Indian Rural Population. I.M. MADDEN\*, C.A. STOCK, P.D. BIDINGER, and R.D. HOLT (*Eastman Dental Institute, London, UK; and Institute for Rural Health Studies, Hyderabad, India*).

**1747** Oral Health Survey of Children in Riyadh, Saudi Arabia. R. AL-BANYAN\*, E. ECHEVERRI, S. NARENDRAN, and H. KEENE (*University of Texas Health Science Center, Houston Dental Branch, USA*).

**1748** THI Comparisons of Four Groups of Low-income Children Including Migrants. J.R. JAKOBSEN\*, M.J. KANELIS, E.M. BOYER, and J.A. MCGRADY (*College of Dentistry, University of Iowa, Iowa City, USA*).

**1749** Oral Health Situation of Asylum Seekers and Refugees in Denmark. A.M. TORRES\* and P.E. PETERSEN (*Department of*

*Community Dentistry and Graduate Studies, Faculty of Health Sciences, University of Copenhagen, Denmark*).

**1750** Smile in the Country Project—A Caries Status Study. E. LO BUONO\* and M. CASTRO (*Itaipava Institute—ONG, Rio de Janeiro, Brazil*).

**1751** Periodontal Conditions of Brazilian Children and Adolescents: 1995-1998. E.L. DINI\*, A.L.R. FOSCHINI, I.M.G. BRANDÃO, and F.C. CASARINI (*School of Dentistry, UNESP, Araraquara, São Paulo; and Municipal Dental Service, Brazil*).

**1752** Determinants of Dentist Participation in a Children's Medicaid Access Program. K. McNABB\*, P. MILGROM, and D. GREMBOWSKI (*University of Washington, Seattle, USA*).

**1753** The Effect of Managed Care on ER Dental Cases. S. DANESH\* and M. McCUNIFF (*School of Dentistry, University of Missouri-Kansas City, USA*).

**1754** Oral Hygiene Practice and Utilization of Dental Services in Fiji. T. KING\* (*School of Oral Health, Fiji School of Medicine, Suva*).

**1755** Utilization of Dental Health Care Services by Adult Females. A. SAMANT\* (*New Jersey Dental School, University of Medicine & Dentistry of New Jersey, Newark, USA*).

**1756** Adult Dental Visits in Selected US States, 1995-1997. S.L. TOMAR\* and D.M. MALVITZ (*Centers for Disease Control Division of Oral Health, Atlanta, GA, USA*).

**1757** Recent Changes in US Dental Service Expenditures by State. J. BROWN and T. WALL\* (*American Dental Association, Chicago, IL, USA*).

**1758** Risk Factors Determining the Development of Caries and Periodontal Diseases of Children Living in the Sakhalin Island at the Far East of Russia. N.V. ALIMOVA\* and V.M. ELIZAROVA (*Moscow Medical Stomatological Institute, Russia*).

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**Seq#: 185**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Behavioral Sciences & Health Services Research - Treatment**

**1759** Caries and Sucrose Availability in the UK over 50 Years. M.C. DOWNER\* (*Eastman Dental Institute, London; and University Dental Hospital, Manchester, UK*).

**1760** Predicting Dentinal Caries and Restorative Treatment Experience in Adolescents. N.M. NUTTALL\* and C. DEERY (*Dental Health Services Research Unit, Dundee Dental Hospital and School, Scotland, UK*).

**1761** Dental Health Status in a Belgian Schoolchildren Population in 1983 and 1998. J.P. VAN NIEUWENHUYSEN\*, J.C. CARVALHO, and W. D'HOORE (*Catholic University of Louvain, Belgium*).

**1762** A Tooth Chart for Severity and Activity of Caries Lesions. D.K. BENN, D.D. DANKEL, S. KOSTEWICZ, J.E. EVEN\*, and P.K. BLASER (*University of Florida Colleges of Dentistry and Engineering, Gainesville, USA*).

**1763** Management of the Incipient-Early Occlusal Caries Lesion in Young Adults. M.E. MOSS, N. ZAFARANCHI, and S.L. HANDELMAN\* (*University of Rochester Eastman Department of Dentistry, NY, USA*).

**1764** Treatment Needs in the Casa Pia Trial of Dental Amalgam. M. MARTIN\*, M. BERNARDO, J. LEITÃO, H. SOARES, B. LEROUX, N. HAWKINS, N. BRAVEMAN, and T. DEROUEN (*University of Washington, Seattle, USA; University of Lisbon, Portugal; and National Institute of Dental and Craniofacial Research, Bethesda, MD, USA*).

**1765** Care of Patients with Symptoms Allegedly Caused by Dental Materials. E. STENMAN\* and M. BERGMAN (*Department of Dental Materials Science, Umeå University, and National Board of Health and Welfare, Stockholm, Sweden*).

**1766** Periapical Status and Endodontic Treatment in an Adult French Population. L. LUPI\*, M.F. BERTRAND, M. MULLER, and E. MEDIONI (*Laboratory of Dental Biomaterials and Experimental Odontology, University of Nice-Sophia Antipolis, France*).

**1767** Impact of Dental Treatment on the Prevalence of Dental Caries in Adults. H. VOLSCHEK\* and J.B. DU PLESSIS (*Medical University of Southern Africa, MEDUNSA, Pretoria, South Africa*).

**1768** UPR School of Dentistry's Adolescent and Adult Patient Population Profile. S. LEBRON\*, I. RIOS, J. VILLAMIL, H. TORMOS, M. MACHUCA, Y. MORALES, A. OTERO, J. MORALES, L. SANTOS, K. CRESPO, and L. RODRIGUEZ (*UPR School of Dentistry, San Juan, Puerto Rico*).

**1769** Acute Caries Management Using ART in a Rural Pediatric Population. E. KINSELL\*, N. EWOLDSSEN, W.S. CALLAHAN, J. MARTIN, E.T. RIPPERT, and H. DETHLEFS (*UNMC College of Dentistry, Lincoln, NE, USA; and CFCA Project, Nuevo Ocotopeque, Honduras*).

**1770** Drug Abuse and Oral Health in a Prison Population. E.M. BOYER\* and T. HILL (*College of Dentistry, University of Iowa; and Iowa Medical and Classification Center, Iowa City, USA*).

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**Seq#: 186**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Implantology - Implant Prosthodontic Issues and Systemic Responses**

**1771** Accuracy of a Ratchet Type Torque-limiting Device for Implants. J. STANDLEE, A.A. CAPUTO, and M.J. CHWU\* (*Restorative Dentistry and Biomaterials Science, UCLA School of Dentistry, Los Angeles, CA, USA*).

**1772** Accuracy of Handheld Torque Procedures Associated with Dental Implants. A. CONSTANTINO and A. ANDRADE\* (*Oral Implantology Center, School of Dentistry, University S. Francisco, Brazil*).

**1773** A Novel Optical Measuring Method for Implant-related Master Casts. K.-R. KWON\*, U.C. BELSER, and D.-G. CHOI (*University of Kyunghee, Seoul, Korea; and University of Geneva, Switzerland*).

**1774** A Comparison of the Dimensional Accuracy of Impression Techniques. F. WATANABE\*, Y. HATA, A. KIRSCH, and G. NEUENDORFF (*School of Dentistry at Niigata, The Nippon Dental University, Japan; and Stuttgart, Germany*).

**1775** Wear Characteristics of Grade I Titanium Opposed by Aluminum Oxide. D. ARMELLINI\*, W.C. WAGNER, M.E. RAZZOOG, and B.R. LANG (*University of Michigan, Ann Arbor, USA*).

**1776** Individual CAD/CAM-generated Abutments for Dental Implants. B.D. BREMER\*, H. SCHELLER, M. WICHMANN, and A. ROSSBACH (*Department of Prosthodontics, School of Dentistry, Medical University of Hannover, Germany*).

**1777** Dental Implants Restored with Superstructures of Various High Noble and Noble Alloys, Long-term Assessments. J. OLSON\*, M. MANZ, J. DOMINICI, and H.F. MORRIS (*University of Louisville, KY; VAMC, Ann Arbor, MI, USA*).

**1778** Dimensional Stability and Quality of Cast Dental Abutments after Casting and Lapping Procedures. A. ALLUHAIIDAN, P.R. LIU\*, and W. LACEFIELD (*University of Alabama at Birmingham School of Dentistry, USA*).

**1779** An Experimental Study on the Loosening of the Abutment Screw of Interchangeable Implant. H.-S. KWEON\*, C.-H. CHUNG, H.-J. OH, S.-J. KEE, and I.-C. PARK (*Department of Prosthodontics, College of Dentistry, Chosun University, South Korea*).

**1780** Use of Dental Cements to Seal the Implant/Abutment Interface Discrepancy. M. KHARCHAF\*, Y.H. ISMAIL, S. KUKUNAS, B. MONCLA, and J.J. MAO (*Department of Prosthodontics and Microbiology, School of Dental Medicine, University of Pittsburgh, PA, USA*).

**1781** Comparison of Marginal Fit between Cemented and Cast Implant Frameworks. L.Y. TAM\*, A.B. KAY, A.H. FENTON, and G. ZARB (*Department of Prosthodontics, University of Toronto, ON, Canada*).

**1782** Immediate Post-extraction Implants: An Histologic Analysis in Monkeys. A. SCARANO\*, M. SACCO, M. CORIGLIANO, M. PIATTELLI, and A. PIATTELLI (*Dental School, University of Chieti, Italy*).

**1783** Microscopy Analysis of the Immediate Implants Retrieved for Abutment Fracture. L. MALCHIODI\*, M. QUARANTA, G. POMPA, and A. SCARANO (*Dental School, "La Sapienza" of Rome, Chieti, Italy*).

**1784** Effects of Experimental Diabetes on the Healing Period Leading to Osseointegration. M.G. GUGLIELMOTTI, G. GIANNUNZIO, D. OLMEDO\*, and M.J. GIGLIO (*Departments of Pathology and Clinic I and Oral Pathology, School of Dentistry, University of Buenos Aires, Argentina*).

**1785** Osseointegration is Affected by Osteoporotic-like Conditions. M. BERGSTROM\*, J.C. KELLER, and K. KRIZAN (*Dows Institute for Dental Research, University of Iowa, Iowa City, USA*).

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**Seq#: 187**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Implantology - In vitro Studies on the Role of Surface Topography**

**1786** Effect of Cell Orientation on Osteogenesis on Micromachined Grooved Substrata. A. KHAKBAZNEJAD\*, B. CHEHROUDI, and D.M. BRUNETTE (*Department of Oral Biological and Medical Sciences, University of British Columbia, Vancouver, Canada*).

**1787** Computer-assisted 3-D Reconstruction of Fibroblasts and Osteoblasts Adjacent to Percutaneous Implants. T. KOJO\*, B. CHEHROUDI, and D.M. BRUNETTE (*Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).

**1788** Micromachined Surfaces on Percutaneous Implants Improve Survival Rate and Alter Tissue Organization in Comparison with Smooth Surfaces. B. CHEHROUDI\* and D.M. BRUNETTE (*Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).

**1789** Influence of Modified Surfaces of Dental Implants on Fibroblasts *in vitro*. B. GROESSNER-SCHREIBER\*, A. NEUBERT, I. HAUSTEIN, W.-D. MÜLLER, K.-P. LANGE, and M. GRIEPENTROG (*Christian-Albrechts-Universität zu Kiel; Humboldt-Universität zu Berlin (Charité); and BAM Federal Institute for Materials Research and Testing, Berlin, Germany*).

- 1790** The Effect of Poly-L-lactic Acid with Microgroove on Osteoblast-like Cells. K. MATSUZAKA\*, X.F. WALBOOMERS, J.E. DE RUIJTER, and J.A. JANSEN (*Department of Biomaterials, University of Nijmegen, The Netherlands; and Department of Pathology, Tokyo Dental College, Japan*).
- 1791** Attachment of Fibroblasts to Microgrooved Polystyrene. X.F. WALBOOMERS, A.S.G. CURTIS, and J.A. JANSEN\* (*Department of Biomaterials, University of Nijmegen, The Netherlands; and Centre for Cell Engineering, University of Glasgow, UK*).
- 1792** Effect of Ceramic Surface Roughness on the Attachment of HGF. K. MUSTAFA, A. ODÉN, A. WENNERBERG, J. WROBLEWSKI, K. HULTENBY, B. SILVA LOPEZ, and K. ARVIDSON\* (*Department of Basic Oral Sciences, Karolinska Institutet, Sweden*).
- 1793** *In vitro* Response of Human Epithelial Cells to Titanium. H. OGUCHI\*, Y. KARUBE, M. YAMAMOTO, K. MATSUMOTO, K. NAKAYAMA, and M. MORITO (*Department of Geriatric Dentistry, Tsurumi University; and Department of Oral and Maxillofacial Surgery, Toyama Medical Pharmaceutical University, Japan*).
- 1794** Growth of Periodontal Ligament Cells on Different Implant Materials. K.U. SCHENDEL\*, E.A. HOLTGRAVE, and C. GROSSE-SIESTRUP (*Department of Orthodontics, Free University; and Tierexp. Einr. Charité, Berlin, Germany*).
- 1795** Contact Angle Measurement of Dental Implant Biomaterials. T. MEKAYARAJANANONTH\* and S. WINKLER (*School of Dentistry, Temple University, Philadelphia, PA, USA*).
- 1796** The Comparison of Measuring Methods on the Effects of Various Treatments of the Implant Surface. S.J. HEO\*, K.N. KIM, J.W. CHOI, Y.H. KIM, C.P. CHUNG, and A. WENNERBERG (*Departments of Prosthetic Dentistry and Periodontology, Seoul National University, Korea; and Department of Biomaterials, Gothenburg University, Sweden*).
- 1797** Bone Response in Rabbit to Machined and SiO<sub>2</sub> Sandblasted Implants. L. IANNACCONE\*, A. SCARANO, E. DI IORIO, M. PIATTELLI, and A. PIATTELLI (*Dental School, University of Chieti, Italy*).
- 1798** Attachment of Human Osteoblast-like Cells on Different Titanium Surfaces. K. MUSTAFA\*, J. WROBLEWSKI, K. HULTENBY, B. SILVA LOPEZ, and K. ARVIDSON (*Department of Basic Oral Sciences, Karolinska Institutet, Sweden*).
- 1799** Surface Roughness on Alkaline Phosphatase Expression of Osteoblasts. K. HATANO\*, H. INOUE, T. KOJO, T. MATSUNAGA, T. TSUJISAWA, C. UCHIYAMA, and Y. UCHIDA (*Departments of 2nd Prosthetic Dentistry and Oral Bacteriology, Kyushu Dental College, Fukuoka, Japan*).
- 1800** Disaggregated Osteoclasts Increase in Resorption Activity in Response to Roughness. T. MATSUNAGA\*, H. INOUE, T. KOJO, K. HATANO, T. TSUJISAWA, C. UCHIYAMA, and Y. UCHIDA (*Departments of 2nd Prosthetic Dentistry and Oral Bacteriology, Kyushu Dental College, Fukuoka, Japan*).
- 1801** Glucosyltransferase Activity and Cariogenicity of Mutans Streptococci Isolated from Children. R.O. MATTOS-GRANER\*, W. KING, M.P.A. MAYER, and D.J. SMITH (*USP, SP, Brazil; and Forsyth Dental Center, Boston, MA, USA*).
- 1802** Influence of Surface and Antibody on Glucan Formation by Glucosyltransferase (G). L.K. KOPEC\*, A.M. VACCA SMITH, D.E. WUNDER, L. NG-EVANS, and W.H. BOWEN (*Center for Oral Biology, University of Rochester, NY, USA*).
- 1803** Domain Architecture and Structural Features of Glucosyltransferases. N. RAMASUBBU\* and K. SUNDAR (*Dental Research Center, University of Medicine and Dentistry, Newark, NJ, USA*).
- 1804** Comparative Acid Tolerances of *Streptococcus mutans* Isolates from Caries-susceptible and Caries-free Adults. T. OKADA\*, Y. TOMITA, T. WATANABE, T. TAKEUCHI, T. NEDA, K. FUKUSHIMA, and T. IKEMI (*School of Dentistry, Nihon University, Matsudo, Chiba, Japan*).
- 1805** Validation of 16S rRNA-based DNA Probes for Identification of Oral Streptococci from Root Surfaces. J. LOPMAN\*, M.F.J. MAIDEN, B.J. PASTER, and F.E. DEWHIRST (*Forsyth Dental Center, Boston, MA, USA*).
- 1806** Reliability of Reading on Salivary Dip-slide Tests for Mutans Streptococci. Y. FUJITA\*, N. MATSUSHIMA, M. IGAWA, K. ARAI, and H. ISHIKAWA (*Department of Orthodontics, Nippon Dental University, Tokyo, Japan*).
- 1807** Microbiologic Factors and Caries Risk. S.A. MUNDORFF-SHRESTHA\*, H.M. PROSKIN, R.J. BILLINGS, and G. CORNELL (*University of Rochester Eastman Department of Dentistry, NY, USA*).
- 1808** Ability to Predict Caries Based on Caries Experience and Salivary Mutans Streptococci in Preschool Children. Y. UCHIKAWA\*, Y. UMEZU, and K. OGIHARA (*Department of Pediatric Dentistry, Nippon Dental University, Tokyo, Japan*).
- 1809** Longitudinal Assessment of Predictive Values of Caries Activity Test in Schoolchildren. J. TSUBOUCHI\*, Y. NAKAMURA, S. YAMAMOTO, and T. SHIMONO (*Department of Pediatric Dentistry, Okayama University Dental School, Japan*).
- 1810** Rapid Caries Risk Assessment Using the LBT™ and MuSt™ Tests. L.G. SIMONSON\*, S.A. RALLS, B.L. MCSTAY, M.L. RUNNOE, and R.L. AHLF (*Naval Dental Research Institute, Great Lakes, IL, USA*).
- 1811** Factors Influencing the Presence of Mutans Streptococci in Very Young Children. N. TINANOFF\*, S. REISINE, J. DOUGLASS, and M. LITT (*School of Dental Medicine, University of Connecticut, Farmington, USA*).
- 1812** The Effect of Pregnancy on the Oral Microbial Flora. A.P. DASANAYAKE, Y. LI, H.W. WIENER\*, R. HARRISON, J.M. ROSEMAN, and P.W. CAUFIELD (*Specialized Caries Research Center, University of Alabama at Birmingham, USA*).
- 1813** Salivary Levels of Mutans Streptococci per Tooth and Decay in Elderly Individuals. N.S. GROSSMAN\*, L. DOMINGUEZ, T. SCHORK, and W.J. LOESCHE (*University of Michigan, Ann Arbor, USA*).

**Seq#: 188** **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Cariology Research - Microbial Virulence, Caries Risk**

**Seq#: 189** **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Cariology Research - Caries Prevention – Microbiological Studies**

**1814** Evaluation of a Microencapsulated Antimicrobial Peptide on *Streptococcus mutans* 25175. N.C. VOOK\*, S.P. CONCANNON, S. FOLK, N. JOHNSON, W.M. SHAFER, and J. POHL (United States Army Dental Research Detachment, Great Lakes, IL; and Department of Microbiology and Immunology and Winship Cancer Center, School of Medicine, Emory University, Atlanta, GA, USA).

**1815** Study on Anaerobic Culture Conditions to Evaluate Cariogenicity of Sugars. M. KISHI\*, F. AIZAWA, S. IMAI, T. NISIZAWA, and M. YONEMITSU (Department of Preventive Dentistry, Iwate Medical University, Morioka; and Department of Oral Science, National Institute of Infectious Diseases, Tokyo, Japan).

**1816** Inhibition of *A. viscosus* Adherence to Hydroxyapatite with Monoclonal Antibody. J.P. LIANG\* and Z. LIU (The Ninth People's Hospital, SSMU, Shanghai, China).

**1817** Inhibitory Effects of Phosphoryl Oligosaccharides against Fermentation in Oral Bacteria. S. IMAI\*, H. KAMASAKA, S. OKADA, and T. NISIZAWA (Department of Oral Science, National Institute of Infectious Diseases, Tokyo; and Biochemical Research Laboratory, Ezaki Glico Co., Ltd., Osaka, Japan).

**1818** Minimal Inhibitory Concentrations of Oral Rinses to Cariogenic Bacteria. P.D. SCHULLER\*, K. KOMIYAMA, L. GEE, T. TAERUM, and R. BASSO (University of Alberta, Edmonton; and University of Saskatchewan, Saskatoon, Canada).

**1819** Effects of Antibiotics on *Streptococcus mutans* in Cystic Fibrosis Patients. J. LEE\* and M. McCUNIFF (School of Dentistry, University of Missouri—Kansas City, USA).

**1820** Antimicrobial Activity of Propolis on Oral Microorganisms. P.L. ROSALEN\*, H. KOO, J.A. CURY, and Y.K. PARK (Faculty of Dentistry of Piracicaba, UNICAMP, São Paulo, Brazil).

**1821** *In vitro* Effects of Brazilian Propolis against Mutans Streptococci. H. KOO\*, J.A. CURY, P.L. ROSALEN, Y.K. PARK, and G.M.B. AMBROSANO (Faculty of Dentistry of Piracicaba, UNICAMP, São Paulo, Brazil).

**1822** Cariostatic Potential of Two Proteases Derived from Korean Soil Microbes. K.K. PARK\*, S.I. LEE, J.H. YU, and G.K. STOOKEY (School of Dentistry, Dankook University; and Yonsei University, Korea; and Indiana University, Indianapolis, USA).

**1823** Biochemical Composition and Cariogenicity of Dental Plaque Formed in the Presence of Sucrose or Glucose+Fructose. M.A.B. REBELO\*, A.A. DEL BEL CURY, M.T.C. DERBYSHIRE, and J.A. CURY (FOP—UNICAMP, Brazil).

**1824** Changes of Mutans Streptococci in Relation to Chlorhexidine Varnish and Diet. M. LU, A.P. DASANAYAKE, M. WARNER, Y. LI, and S. WHITE\* (Specialized Caries Research Center, University of Alabama at Birmingham; and Minor High School, Birmingham, AL, USA).

**1825** Effects of Two Different Chlorhexidine Varnishes on Plaque Indices and Lactobacilli Counts. R. TÛTÛNCÛ, A. TUNA\*, and M.J. NOACK (Department of Operative Dentistry and Periodontology, University of Cologne, Germany).

**1826** Effect of "Coalho" Cheese on Ca and P Concentrations in Dental Plaque. R.S.C.C. LUCAS\*, E.M. SILVA, and Z.L. SANTOS (UFRN-CMOS, Natal-RN, Brazil).

**1827** *In vitro* System for the Quantitation of Microbial Plaque Biofilms. M. THOMPSON\*, K. THORNE, C.D. WU, and R.J. MARTINEZ (Departments of Restorative Dentistry and Periodontics, University of Illinois at Chicago College of Dentistry, USA).

**1828** *In vitro* Microbial Caries Model: Role of Salivary Pellicle. M. FONTANA, R.L. GREGORY, A.J. DUNIPACE, M.E. WILSON\*, C. GONZÁLEZ-CABEZAS, and G.K. STOOKEY (School of Dentistry, Indiana University, Indianapolis, USA).

**Seq#: 190** **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Oral/Dental Hygiene - Fluoride and Various Dental Office Practices**

**1829** A Forty-month Clinical Study on the Anti-caries Efficacy of Two Amine-fluoride Toothpaste Formulations. P.A. LEOUS\* and L.I. LEOUS (WHO Collaborating Centre, ICOH-DTI, Minsk, Belarus).

**1830** Brazilian Dentists' Knowledge about Fluoride Varnish. R.B. SOUZA\*, M.B. PORTELA, A.C. ALVES, L. PRIMO, and P. WEINSTEIN (Pediatric Dentistry, Federal University of Rio de Janeiro, Brazil; and Dental Public Science, University of Washington, Seattle, USA).

**1831** Dental Hygienist/Patient Acceptability of Fluoride Varnishes. D.P. WARREN, H.A. HENSON\*, and J.T. CHAN (Dental Branch, UTHSC, Houston, TX, USA).

**1832** Effects of Shielding on Air-abrasion for Dental Hygiene Devices. B. KUNSELMAN\*, S.C. BAYNE, J.Y. THOMPSON, S.M. MAURIELLO, and D.E. RUDDELL (School of Dentistry, Applied Science, University of North Carolina, Chapel Hill, USA).

**1833** Effective and Safe Plaque Removal Method Using Crystalline Cellulose. S. HORIGUCHI\*, T. YAMADA, P.N.R. PEREIRA, T. NIKAIIDO, J. TAGAMI, N.C. TENG, and T. KURIYAGAWA (Toranomon Hospital, Tokyo Medical & Dental University, and Tohoku University, Sendai, Japan).

**1834** Operating Air Pressure of Disposable Angles. H.C. RICE\*, D.P. WARREN, D.K. McKITRICK, J.A. McWHERTER, and J.M. POWERS (Dental Branch, University of Texas Health Science Center, USA).

**1835** Bacterial Contamination of Sandblasting Handpieces. C. NUERNBERGER\*, J. BEUTH, J.M. SCHIERHOLZ, and W. NIEDERMEIER (School of Dental and Oral Medicine and Department of Microbiology and Hygiene, University at Cologne, Germany).

**1836** Scaling/Root Planing Effects on Periodontitis Using Transoral Local Anesthetic. D.A. PERRY, E.J. TAGGART\*, and S.A. GANSKY (University of California, San Francisco, USA).

**1837** VAS Pain Evaluation in Therapeutic Scaling Using Transoral Local Anesthetic. D.A. PERRY\*, E.J. TAGGART, and S.A. GANSKY (University of California, San Francisco, USA).

**1838** Permeability of Gloves by Dental Composites. B. RATH\*, M.A. BAUMANN, and J.H. FISCHER (Department of Operative Dentistry and Periodontology and Experimental Medicine, University of Cologne, Germany).

**Seq#: 191** **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Mineralized Tissue - Enamel & Dentin: Pathology**

**1839** Demineralization of Human Enamel and Dentin by Soft Drinks. T. STEET\*, S.G. CIANCIO, and P. BUSH (South Campus Instrument Center, SUNY at Buffalo, NY, USA).

**1840** The Influence of Lipids on the Erosive Demineralization of Enamel. E. HELLWIG\*, T. ATTIN, A.M. KIELBASSA, and W. BUCHALLA (*Department of Operative Dentistry and Periodontology, University Freiburg, Germany*).

**1841** Dental Erosion *in vitro* by Over-the-Counter Mouthrinses. J. HUGHES\*, N. WEST, and M. ADDY (*Department of Restorative Dentistry, Bristol Dental School, UK*).

**1842** Period of Remineralization Needed to Re-establish Abrasion Resistance of Erosions. T. ATTIN\*, W. BUCHALLA, M. GOLLNER, and E. HELLWIG (*Department of Operative Dentistry and Periodontology, University of Freiburg, Germany*).

**1843** Dental Erosion in Subjects with Gastroesophageal Reflux Disease (GERD). B.L. GREGORY-HEAD\*, D. CURTIS, and D.W. CHAMBERS (*School of Dentistry, University of the Pacific, and School of Dentistry, UCSF, San Francisco, CA, USA*).

**1844** Factors Modifying the Erosive Effects of Citric Acid on Enamel. L. SHAW\*, K.T. TUCKER, G. SMITH, and A.J. SMITH (*School of Dentistry, University of Birmingham, UK*).

**1845** Wear and Surface Roughness Assessment of Human Enamel Following Microabrasion. J. MONDELLI, R.F. MENDES, and A.D. SEGALA\* (*Bauru School of Dentistry, University of São Paulo, Brazil*).

**1846** Nano-indentation Study of Some Mechanical Properties of Partially Demineralized Enamel. S. ABDULGHANI, S. AL-AZZAWI, A.J. BUSHBY\*, and S.E.P. DOWKER (*Queen Mary and Westfield College, London, UK*).

**1847** Defluoridation Capacity of Bonechar Based on Batch Tests. P. LEUKITTISUP, K. SIVABORVORN, P. PHANTUMVANIT\*, K. TEANKAPRASITH, and C. PHORNPI MOLTHAPE (*Mahidol University and Thammasat University, Thailand*).

**1848** Comparison of Fluorosis Scoring Using the TF and DDE Indices. A.M. SABIEHA\* and W.P. ROCK (*School of Dentistry, University of Birmingham, UK*).

**1849** Electro-mechanical Properties of Tooth Structures and Caries at High Resolution. M. TABIB-AZAR, M. MOZAYENI-AZAR\*, S.-H. YOU, D.-P. SU, and L.J. KATZ (*Case Western Reserve University, Cleveland, OH, USA*).

**1850** Modification of the Attrition of a Buried Adult's Tooth. A. BERARD, M. MARQUET, and Ph. NDOBO-EPOY\* (*University Bordeaux 2, France*).

**1851** Compositional and Ultrastructural Features of Deciduous Enamel with Regional Odontodysplasia. R. ROHANIZADEH\*, J. POUËZAT, W. BOHNE, J.C. AJACQUES, and R.Z. LeGEROS (*New York University College of Dentistry, NY, USA; and Faculté de Chirurgie Dentaire, Nantes, France*).

**1852** Frequency of Enamel Defects on Teeth of Complete Cleft Lip and Palate Patients. N.R. SVIZERO\*, M.T.A.A. BASTOS, and M.C. VERONEZI (*Hospital of Rehabilitation of Craniofacial Anomalies, University of São Paulo, Bauru, Brazil*).

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**Seq#: 192**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Mineralized Tissue - Mineralization Processes**

**1853** The Effect of Solution Ions on the Texture of Apatite Crystals. E.D. EANES\* and A.W. HAILER (*Craniofacial and Skeletal Diseases Branch, National Institute of Dental and Craniofacial Research, Bethesda, MD, USA*).

**1854** Influence of Fullerene (C<sub>60</sub>) Derivatives on Hydroxyapatite Mineralization Kinetics. W. WU, W. GILLOGLY,

L. WILSON, and G.H. NANCOLLAS\* (*Department of Chemistry, SUNY, Buffalo, NY; and Rice University, Houston, TX, USA*).

**1855** Crystallographic Structure of Dental Enamel Apatite Using Rietveld Analysis. R.M. WILSON, J.C. ELLIOTT, and S.E.P. DOWKER\* (*Queen Mary and Westfield College, London, UK*).

**1856** MES of Carbonated Apatites in the Presence of Solution Strontium. D.D. HESLOP\*, A.A. BAIG, J.L. FOX, and W.I. HIGUCHI (*University of Utah, Salt Lake City, USA*).

**1857** Metastable Equilibrium Solubilities of NIST Calcium Hydroxyapatite (SRM 2910). S.J. COLBY\*, A.A. BAIG, J.L. FOX, and W.I. HIGUCHI (*Department of Pharmaceutics, University of Utah, Salt Lake City, USA*).

**1858** Infrared Imaging of Dental Tissues. E. PASCHALIS\*, N.P. CAMACHO, M. YAMAUCHI, and A.L. BOSKEY (*Hospital for Special Surgery, New York, NY; and University of North Carolina, Chapel Hill, USA*).

**1859** Precipitation, Characterization, and Conversion of Amorphous Calcium Phosphates at Acidic pH. M. TUNG\* and D. SKRTIC (*Paffenbarger Research Center, ADAHF, NIST, Gaithersburg, MD, USA*).

**1860** An Estimate of Potential Acid Loading during Mineralization of Rat Incisor Enamel. C.E. SMITH\* and H.C. MARGOLIS (*McGill University, Montreal, Quebec, Canada; and Forsyth Dental Center, Boston, MA, USA*).

**1861** Correlations between Heavy Metals in Primary Teeth from Norwegian Children. H.M. TVINNEREIM and R. EIDE\* (*Department of Anatomy and Cell Biology and Department of Odontology-Dental Biomaterials, University of Bergen, Norway*).

**1862** Effect of Liposomes on Mineralization in Rat Osteoblast Enriched Cultures. H.F. WU\*, J.-S. HUANG, C.C. TSAI, T.Y. SHIEH, and J.M. HONG (*Kaohsiung Medical College, Graduate Institute of Dental Sciences; and Kaohsiung Chang Gung Memorial Hospital, Taiwan, ROC*).

**1863** A Proposed Methodology for Bone Mineral Solubility Determination. A.M. BARRY\*, A.A. BAIG, H. ZHUANG, J.L. FOX, W.I. HIGUCHI, and M. OTSUKA (*Department of Pharmaceutics, University of Utah, Salt Lake City, USA*).

**1864** Diffusion within Demineralizing Hydroxyapatite Measured Using Multiple Energy X-ray Absorptiometry. N. KOZUL, G.R. DAVIS, P. ANDERSON, and J.C. ELLIOTT\* (*Queen Mary and Westfield College, London, UK*).

**1865** Threshold Concentration for Solution Fluoride Influencing Biomineral Solubility. H. ZHUANG\*, A.A. BAIG, A. CHHETTRY, A.M. BARRY, J.L. FOX, and W.I. HIGUCHI (*Department of Pharmaceutics, University of Utah, Salt Lake City, USA*).

**1866** Composition of the Surface Complex Governing Carbonated Apatite Dissolution. A. CHHETTRY\*, A.A. BAIG, J.L. FOX, and W.I. HIGUCHI (*University of Utah, Salt Lake City, USA*).

**1867** Surface Pools of Calcium Ions on Enamel and Synthetic Apatites. T. AOBA\*, K. SATO, T. SHIMAZU, H. YAGISHITA, and Y. TAYA (*Department of Pathology, Nippon Dental University, Tokyo, Japan*).

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**Seq#: 193**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Salivary Research - Signal Transduction**

- 1868** Cellular Localization of P2 Nucleotide Receptors in Developing Submandibular Glands. M. PARK\*, R.S. REDMAN, and J.T. TURNER (*University of Missouri, Columbia; and VA Medical Center, Washington, DC, USA*).
- 1869** Effects of Extracellular Nucleotides on Rat Submandibular Gland Function: Studies in Intact Perfused Glands. J.T. TURNER\*, J.M. CAMDEN, and G.A. WEISMAN (*University of Missouri, Columbia, USA*).
- 1870** Expression and Function of Rat Submandibular Gland P2Y<sub>2</sub> Receptors during Duct Ligation and Recovery. J.S. AHN\*, J.M. CAMDEN, and J.T. TURNER (*University of Missouri, Columbia, USA*).
- 1871** Parasympathetic Inhibitory Regulation via GABA Receptor in the Rat Submandibular Gland. N. TAKAI\*, K. UCHIHASHI, K. HIGUCHI, and Y. YOSHIDA (*Department of Physiology, Osaka Dental University, Japan*).
- 1872** Daily b-adrenergic Rhythms in Rat Submandibular Gland? M.A. LUCHELLI, J.C. ELVERDIN\*, A. CHIARENZA, and M.I. VACAS (*Facultad de Odontología, UBA, Buenos Aires, Argentina*).
- 1873** Comparison of Parotid and Submandibular Gland Function in Response to an Anticholinergic Drug. C.C. COTCA\*, E.M. GHEZZI, M.P. BEYRAMIAN, P.S. DIXIT, M.L. GOODSON, S.C.S. PAI, E.M. ROSIER, K. SHIMOYAMA, and J.A. SHIP (*University of Michigan, Ann Arbor, USA; University of Newcastle, UK; and Tokyo Medical and Dental University, Japan*).
- 1874** Expression of Ion Transport Proteins in the Rat Parotid C10 Cell Line. K. PARK, L.A. RICHARDSON\*, H.M. LANTZ, and J.E. MELVIN (*Center for Oral Biology, University of Rochester, NY, USA*).
- 1875** Expression of a Putative Bacterial Homologue of the Salivary Na<sup>+</sup>-K-2Cl<sup>-</sup> Cotransporter in Yeast. C.A. BERKMAN\* and R.J. TURNER (*Gene Therapy and Therapeutics Branch, NIDCR/NIH, Bethesda, MD, USA*).
- 1876** Expression of mC1CN3 in Mouse Parotid Acinar and Ductal Cells. K. PARK\*, L.A. RICHARDSON, H.M. LANTZ, and J.E. MELVIN (*Center for Oral Biology, University of Rochester, NY, USA*).
- 1877** Effects of T3 on Ca<sup>2+</sup> Mobilization in Two Salivary Cell Lines. M.W.J. DODDS\*, G.H. ZHANG, and J.R. MARTINEZ (*Departments of Community Dentistry and Pediatrics, University of Texas Health Science Center at San Antonio, USA*).
- 1878** Influence of Lead Exposure on Salivary Gland Function in Rats. G.E. WATSON\*, R.L. EVANS, J.E. MELVIN, S.K. PEARSON, and W.H. BOWEN (*Center for Oral Biology and Eastman Department of Dentistry, University of Rochester, NY, USA*).
- 1879** Characterization and Localization of Rab26 in the Rat Parotid Gland. S. YOSHIE\* and H. SHIMOMURA (*The Nippon Dental University, Niigata, Japan*).
- 1880** Receptor Tyrosine Kinase Activation Required for Salivary Gland Development. G.E. OXFORD\* and M.G. HUMPHREYS-BEHER (*Department of Oral Biology, University of Florida College of Dentistry, Gainesville, USA*).
- 1882** HIV-1 Inhibition by Human Parotid Basic Proline-rich Proteins. M.R. ROBINOVITCH\*, R. ASHLEY, and E. VIGOREN (*University of Washington, Seattle, USA*).
- 1883** Binding of Secretory Leukocyte Protease Inhibitor (SLPI) to Human Cells Does Not Correlate with Expression of Surface Proteins CD4, CD26, and CCR5. K. KONOPKA\*, N. DÜZGÜNES, and N.R. SHINE (*School of Dentistry, University of the Pacific, San Francisco, CA, USA*).
- 1884** Use of Saliva to Detect Recurrence of Disease in High-risk Breast Cancer Patients. A.P. ACHORD\*, L.G. BIGLER, S.A. BIGLER, M. KAELEBLING, and C.F. STRECKFUS (*University of Mississippi Medical Center, Jackson, USA*).
- 1885** Quantitative Measurement of Crystal Growth Inhibition by Human Parotid Saliva. N. TAMAKI\*, T. TADA, M. MORITA, and T. WATANABE (*Department of Preventive Dentistry, Okayama University Dental School, Japan*).
- 1886** Variability of Stimulated Parotid and Submandibular Flow Rates in Healthy Young and Older Adults. M.P. BEYRAMIAN\*, E.M. GHEZZI, C.C. COTCA, P.S. DIXIT, M.L. GOODSON, S.C.S. PAI, E.M. ROSIER, K. SHIMOYAMA, and J.A. SHIP (*University of Michigan, Ann Arbor, USA; University of Newcastle, UK; and Tokyo Medical and Dental University, Japan*).
- 1887** Epidemiologic Survey of Salivary Gland Dysfunctions in the State of Mexico. J.A. BANDERAS\*, J.L. CHAVEZ, S.L. ROBLES, B.E. VEGA, G. JIMENEZ, and M. GONZALEZ (*Dental Research Center, School of Dentistry, UAEM Toluca, Mexico; and IEDA, Mexico*).
- 1888** Xerostomic Measures of an Anticholinergic Drug in Healthy Young vs. Older Adults. P.S. DIXIT\*, E.M. GHEZZI, M.P. BEYRAMIAN, C.C. COTCA, M.L. GOODSON, S.C.S. PAI, E.M. ROSIER, K. SHIMOYAMA, and J.A. SHIP (*School of Dentistry, University of Michigan, Ann Arbor, USA; University of Newcastle, UK; and Tokyo Medical and Dental University, Japan*). (1998 AADR Student Fellowship Recipient)
- 1889** Salivary Changes after Surgical Periodontal Therapy. H. JENTSCH\* and R. GÖCKE (*Dental School, University Rostock, Germany*).
- 1890** Simultaneous Assay for Bacterial Aggregation, Adherence, and Killing by Saliva. R.K. STAIKOV\* and J.D. RUDNEY (*Department of Oral Science, School of Dentistry, University of Minnesota, Minneapolis, USA*).
- 1891** Co-relationship between *C. albicans* Adhesion and Salivary Glycoprotein in Stomatitis Patients. J.H. OH\*, J.Y. LEE, and B.B. CHOI (*Department of Prosthodontics and Department of Microbiology, School of Dentistry, Kyung Hee University, Seoul, Korea*).
- 1892** Loss of Salivary Anticandidal Activities in HIV-infected Patients. A.L. LIN, Q. SHI, D.A. JOHNSON, C.C. WANG\*, T.F. PATTERSON, and C.-K. YEH (*Departments of Dental Diagnostic Science, Community Dentistry and Medicine, University of Texas Health Science Center at San Antonio; and GRECC, Audie L. Murphy Veterans Administration Hospital, San Antonio, TX, USA*).
- 1893** Salivary Composition in HIV(+) Cohort Expressing Reduced Salivary Anticandidal Activities. A.L. LIN\*, D.A. JOHNSON, Y. WU, D.L. LU, and C.-K. YEH (*Departments of Dental Diagnostic Science and Community Dentistry, University of Texas Health Science Center at San Antonio; and GRECC, Audie L. Murphy Veterans Hospital, STVHCS, San Antonio, TX, USA*).

**Seq#: 194** Friday, March 12, 11:00 am - 12:15 pm  
Poster Session, Exhibit Hall B&C

**Salivary Research - Saliva/Disease**

**1881** Withdrawn

**1894** Candidacidal Activity of Salivary Histatins in Physiologic Inorganic Ion Buffers. R. PATEL\*, S. KOSHLUKOVA, T. LLOYD, M. ARAUJO, and M. EDGERTON (*Oral Biology and Restorative Dentistry, State University of New York, Buffalo, USA*).

**1895** Human b-defensin-1 (hBD-1), a Natural Antibiotic Peptide, is Expressed in Salivary Glands and Bound by Mucin. K. SAHASRABUDHE\*, J. KIMBALL, and B.A. DALE (*Department of Oral Biology, University of Washington, Seattle, USA*).

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**Seq#: 195**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Microbiology/Immunology - Anti-plaque and New Antimicrobial Agents**

**1896** Efficacy of Four Mouthrinses for Toothbrush Decontamination against Herpes Viruses. J. KETTERING\*, T. HANTZ, M. LIU, T. MEYER, and J. STEPHENS (*Loma Linda University School of Dentistry, CA, USA*).

**1897** An *in vitro* Assay for Antimicrobial Mouthrinses Using ATP Bioluminescence. M.D. HUNTLEY\*, M.B. FINNEGAN, A. PATEL, and C. CHERRIE (*Warner-Lambert Co., Morris Plains, NJ, USA*).

**1898** Effects of Toothpastes on Residual Microbial Contamination of Toothbrushes. M.C. GOLDSCHMIDT\*, M.B. THOMPSON, D.P. WARREN, and K. ADLER-STORTHZ (*Dental Branch, University of Texas at Houston Health Science Center, USA*).

**1899** Differential Killing of Oral Streptococcal Species by Listerine Antiseptic (LA). D. FURGANG\*, D.H. FINE, and M.L. BARNETT (*New Jersey Dental School, Newark; and Warner-Lambert Co., Morris Plains, NJ, USA*).

**1900** *In vitro* Fluoride Dose-response Study of Sterilized Enamel Specimens. M. TORO\*, L. LUKANTSOVA, M. WILLIAMSON, G. FISCHER, R. HINESLEY, and A.J. DUNIPACE (*School of Dentistry, Indiana University, Indianapolis, USA*).

**1901** Antibacterial Activity of Eight Commercially Available Fluoride Dentifrices and Topical Gels. J.F. MILLER\*, K.E. DIEFENDERFER, M.M. D'ALESSANDRO, and G.A. MILLER (*Naval Dental School, National Naval Dental Center; and Geo-Centers, Inc., Bethesda, MD, USA*).

**1902** Effects of Fluoride and Aluminum Ions on Cultured Osteoblast-like Cells. Y.R. BULSARA\*, P.V. HATTON, A.J. DEVLIN, and I.M. BROOK (*School of Clinical Dentistry, University of Sheffield, UK*).

**1903** Evaluation of Salivary Levels of Mutans Streptococci after Utilization of 0.05% Sodium Fluoride Solution. N.C.V. GONÇALVES\*, S.L. SALVADOR, A. VALSECKI, Jr., Z. ROTHSCHILD, and G.C. BERGAMO (*University of São Paulo—RP/UNESP, Brazil*).

**1904** Evaluation of Hop Extracts on the Inhibition of Oral Streptococci and *Fusobacterium nucleatum*. S.P. CONCANNON\* and M.J. LAUGHLIN (*United States Army Dental Research Detachment, Great Lakes, IL, USA*).

**1905** Isolation and Characterization of an Anti-bacterial Biflavonoid from an African Chewing Stick, *Garcinia kola*. S.F. LEE\*, H.X. XU, S. MUGHAL, O. TAIWO, W.-C. FOONG, and R.L. WHITE (*Dalhousie University, Halifax, Nova Scotia, Canada*).

**1906** Castor Oil: Antimicrobial Activity of Detergent Derived from Ricinoleic Acid. I.Y. ITO\*, I.C. FRÖNNER, H. MIAN, and G.O. CHERICE (*FCFRP, FORP and IQ São Carlos-USP, Brazil*).

**1907** Antimicrobial Activity Assessment of Irreversible Hydrocolloid, *in vitro*. L.A. CASEMIRO\*, F.C. PIMENTA, I.Y. ITO, and H. PANZERI (*F.O. and F.C.F. Ribeirão Preto, USP, Brazil*).

**1908** Antimicrobial Activity of *Melaleuca alternifolia* against Periodontitis Plaque Samples. J. HALES\*, T. BUTLER, and J. THOMAS (*West Virginia University, Morgantown, USA*).

**1909** Isolation and Identification of Oral Antibacterial Compounds from the Plant *Sarandra glabra*. L. CAI, C.S. RHIM\*, and C.D. WU (*Periodontics Department, College of Dentistry, University of Illinois at Chicago; and Tufts University School of Dental Medicine, Boston, MA, USA*).

**1910** Exposure of Porcine Buccal Mucosa to 0.12% Chlorhexidine Oral Rinse Reduces *Candida albicans* Colonization. A.L. CAIRO\* and R.W. ROWLAND (*University of Detroit Mercy, MI, USA*).

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**Seq#: 196**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Microbiology/Immunology - Actinomyces and Oral Streptococci**

**1911** Growth Characteristics and Identification of *Actinomyces* Species. N. SARKONEN\*, E. KÖNÖNEN, P. SUMMANEN, M. KÖNÖNEN, and H. JOUSIMIES-SOMER (*National Public Health Institute, Helsinki, Finland; University of Aarhus, Denmark; and VA Wadsworth Medical Center, Los Angeles, CA, USA*).

**1912** Genotyping the Oral *Actinomyces*. J.D. RUBY\*, Y. LI, and P.W. CAUFIELD (*Specialized Caries Research Center, University of Alabama at Birmingham, USA*).

**1913** Antigenic Differences among Ribotypes of *A. naeslundii* gsp.2 from a Patient. M.F. COLE\*, A. CHOLAKIS, and G.H. BOWDEN (*Georgetown University, Washington, DC, USA; and University of Manitoba, Winnipeg, Canada*).

**1914** Competition among *A. naeslundii* Gsp. 2 Ribotypes from a Single Individual. G.H. BOWDEN\*, N. NOLETTE, and K. EGGERTSON (*University of Manitoba, Winnipeg, Canada*).

**1915** Acquisition of *Actinomyces* in Infants. Y. LI\*, Z. LU, A.P. DASANAYAKE, W. LEE, and P.W. CAUFIELD (*Specialized Caries Research Center, University of Alabama at Birmingham, USA*).

**1916** Analysis of *Actinomyces naeslundii* T14V Genes that are Involved in DNA Recombination and Repair. P.A. RAGSDALE\* and M.K. YEUNG (*University of Texas Health Science Center at San Antonio, USA*).

**1917** A Molecular Biological Study of Streptococci in Recurrent Aphthous Stomatitis. D. WRAY\*, A. LENNON, and M.P. RIGGIO (*Glasgow Dental School, Scotland, UK*).

**1918** Prevalence and Diversity of Aciduric Non-MS Streptococci in Mother and Infant Pairs. W. LEE\*, Y. LI, Z. LU, and P.W. CAUFIELD (*Special Caries Research Center, University of Alabama at Birmingham, USA*).

**1919** Immunoglobulin A1 Protease Production by Salivary Streptococci during the First Year of Life. E. KÖNÖNEN\*, A. BRYK, H. JOUSIMIES-SOMER, and M. KILIAN (*University of Aarhus, Denmark; and National Public Health Institute, Helsinki, Finland*).



**1920** Mutans Streptococci and Yeast in Saliva of Members of Two Families. F.C. PIMENTA\*, M. UZEDA, and I.Y. ITO (*UFQ and FCFRP, University of São Paulo, Brazil*).

**1921** Isolation and Characterization of a Sialidase-negative Mutant of *Streptococcus oralis*. E.R. NALBANTOGLU\*, C.Y. LOO, N. GANESHKUMAR, and C.V. HUGHES (*Pediatric Dentistry, Boston University; and Forsyth Dental Center, Boston, MA, USA*).

**1922** Cloning of an Exonuclease III-homologue Gene Fragment from *Streptococcus mutans*. R.C. FAUSTOFERRI\* and R.G. QUIVEY, Jr. (*Center for Oral Biology, University of Rochester, NY, USA*).

**1923** Expression of the *gtfI* Gene from *S. sobrinus* in *S. anginosus*. N. SHINOZAKI\*, T. SHIROZA, M. HAYAKAWA, Y. ABIKO, and K. FUKUSHIMA (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**1924** DNA Probe Specific for *Streptococcus sobrinus*. H. IDA\*, T. IGARASHI, A. YAMAMOTO, R. SASA, and N. GOTO (*Showa University School of Dentistry, Tokyo, Japan*).

**1925** Glucan-binding Proteins of *Streptococcus sobrinus*. D.J. SMITH\*, W. KING, B.I. SHEN, C.D. WU, and M.A. TAUBMAN (*Forsyth Dental Center, Boston, MA; and University of Illinois at Chicago, USA*).

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**Seq#: 197**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Microbiology/Immunology - Oral Streptococci: Physiology and Environmental Regulation**

**1926** Inhibition of Sorbitol Metabolism by Air-exposure of *Streptococcus mutans* Cells. Y. IWAMI\*, S. TAKAHASHI-ABBE, N. TAKAHASHI, and T. YAMADA (*Department of Oral Biochemistry, Tohoku University School of Dentistry, Sendai, Japan*).

**1927** Characterization of a dTDP-Rhamnose Synthesis-deficient Mutant of *Streptococcus mutans*. K. TOMIHISA\*, Y. YAMASHITA, Y. TSUKIOKA, Y. NAKANO, and T. KOGA (*Department of Preventive Dentistry, Kyushu University Faculty of Dentistry, Fukuoka, Japan*).

**1928** Effects of Hydrogen Peroxide Concentration on Lactoperoxidase System Inhibition of Glucose Fermentation by *S. mutans* 10449. Y.-B. WANG\* and G.R. GERMAINE (*NDMC and TSGH, Taipei, ROC; and University of Minnesota, Minneapolis, USA*).

**1929** Influence of Environment on *spaP* Expression in Chemostat-grown *Streptococcus mutans*. P.J. CROWLEY\*, L.J. BRADY, and A.S. BLEIWEIS (*University of Florida, Gainesville, USA*).

**1930** Identification of Acid-inducible Genes of *Streptococcus mutans* Using Differential Display Polymerase Chain Reaction. D.G. CVITKOVITCH\*, R.J. FERGUSON, and A.S. BLEIWEIS (*Dental Research Institute, University of Toronto, ON, Canada; and Shands Cancer Center and Department of Oral Biology, University of Florida, Gainesville, USA*).

**1931** Mutation within the *dlt* Operon of *Streptococcus mutans* Results in Acid Sensitivity. I.R. HAMILTON\* and D.A. BOYD (*Oral Biology, University of Manitoba, Winnipeg, Canada*).

**1932** Stress Proteins Induced by *Streptococcus mutans* on Exposure to Biocides. G. SVENSÅTER\* and I.R. HAMILTON (*Oral Microbiology, University of Lund, Malmö, Sweden; and Oral Biology, University of Manitoba, Winnipeg, Canada*).

**1933** Isolation of the *Streptococcus mutans* b-glucosidase-specific PTS Operon. C.K. COTE\* and A.L. HONEYMAN (*Department of Medical Microbiology and Immunology, College of Medicine, University of South Florida, Tampa, USA*).

**1934** Paraben Inhibition of Arginolysis by Oral Streptococci. R.E. MARQUIS\*, Y. MA, J.S. REIDMILLER, G.C. RUTHERFORD, and T.M. CURRAN (*University of Rochester, NY, USA*).

**1935** Catabolite Repression of the Amylase-binding Protein Gene of *Streptococcus gordonii*. J.D. ROGERS\* and F.A. SCANNAPIECO (*Department of Oral Biology, State University of New York, Buffalo, USA*).

**1936** Fluoride Downregulates Glucan-binding Lectin in Streptococci. S. LUENGPAILIN\* and R.J. DOYLE (*Department of Microbiology and Immunology, Health Science Center, University of Louisville, KY, USA*).

**1937** Glycine Prevents the Phenotypic Expression of Streptococcal Glucan-binding Lectin. J. LUENGPAILIN\* and R.J. DOYLE (*Department of Microbiology and Immunology, Health Science Center, University of Louisville, KY, USA*).

**1938** Environmental Regulation of *S. gordonii sspB* Gene Expression. A. EL-SABAENY\*, D.R. DEMUTH, and R.J. LAMONT (*University of Washington, Seattle; University of Pennsylvania, Philadelphia, USA; and Alexandria University, Egypt*).

**1939** The Effect of Sucralose<sup>®</sup> on the Glucosyltransferase of *Streptococcus sanguis*. A.M. VACCA SMITH, L. NG-EVANS\*, and W.H. BOWEN (*Center for Oral Biology, University of Rochester, NY, USA*).

**1940** Regulation of the *lacA* and *lacR* Promoters of the Lactose PTS Operon. C.K. COTE and A.L. HONEYMAN\* (*Department of Medical Microbiology and Immunology, University of South Florida, Tampa, USA*).

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**Seq#: 198**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Oral & Maxillofacial Surgery - Wound Healing**

**1941** Cutaneous Rat Wounds Express *C49a*, a Novel Gene with Homology to the Human Melanoma Differentiation Associated with Gene, *Mda-7*. P.M. YEN\*, C. SOO, E. FREYMILLER, and K. TING (*Columbia University, New York; and University of California, USA*).

**1942** Gene Expression of BMP Type I Receptor in Osteoclasts during Healing of Extraction Sockets. F. KUWATA\*, M. SUNOUCHI, T. SASAKI, T. HORIBE, T. NAKATA, H. ICHIJO, S. OIDA, and T. INAGE (*Departments of Chemistry, Oral and Maxillofacial Surgery, and Anatomy, Nihon University School of Dentistry; and Departments of Biomaterials Science and Oral Biochemistry, Tokyo Medical and Dental University, Japan*).

**1943** Modulation of Gene Expression of Osteocalcin and MGP during Healing of Extraction Sockets. H. OHUCHI\*, T. SASAKI, T. HORIBE, H. ICHIJO, S. OIDA, M. TERAKADO, H. SATO, and T. INAGE (*Department of Oral and Maxillofacial Surgery and Department of Anatomy, Nihon University School of Dentistry; and Departments of Biomaterials Science and Oral Biochemistry, Tokyo Medical and Dental University, Japan*).

**1944** Lack of Influence of DBM's Embryonic Origin on Bone Formation. A. STAVROPOULOS\*, N. MARDAS, L. KOSTOPOULOS, and T. KARRING (*Department of*

*Periodontology, Royal Dental College, University of Aarhus, Denmark).*

**1945** Human Amniotic Membrane as a Biological Dressing on Donor Sites. B.P. ANTOLINI\*, D.N. MARTIN, F.V. PELUZZO, E. BAUMGARTNER, M.F. GOMES, and T.O. NOGUEIRA (*FOSJC-UNESP, São Paulo, Brazil*).

**1946** Bacterial Isolates from Bone Dust Produced during Dental Implant Surgery. P. YOUNG\*, M. KORACHI, D.B. DRUCKER, and H. CARTER (*Turner Dental School, Manchester University, UK*).

**1947** Hydroxyapatite Implants in Dental Sockets. Histopathologic Study in Rats. E.M. BOECK\*, R.J. BOECK NETO, T. OKAMOTO, E. MARCANTONIO, Jr., and C.A. PANSANI (*Araraquara Dental School—UNESP, Brazil*).

**1948** Interface between Calvaria and Bone Augmented by rhBMP-2 and Collagen. M. MURATA\*, K. OOMORI, H. TAIRA, T. SHIBATA, and M. ARISUE (*Health Sciences University of Hokkaido, Japan*).

**1949** Autogenous Dental Transplant—An *in vivo* Study. M.A. MASIOLI\*, A. ROLDI, and L.F. PAIXÃO (*Universidade Federal do Espirito Santo and Universidade Estadual do Rio de Janeiro, Brazil*).

**1950** Clinical and Histological Examination of Pedicled Buccal Fat Pad Graft for Oral Submucous Fibrosis. C.-K. CHAO\* and L.-C. CHANG (*Armed Forces Kaohsiung General Hospital and National Defense Medical Center, Taiwan*).

**1951** Feasibility of Alginate Membrane as Barrier Membrane for GTR Method. K. ISHIKAWA\*, Y. UEYAMA, T. MANO, T. KOYAMA, K. SUZUKI, and T. MATSUMURA (*Okayama University Dental School, Japan*).

**1952** Effects of the Permanent Tooth Germ on the Healing of Extraction Wounds. Y. YOSHIMURA\*, S. WATANABE, and T. TOKIOKA (*Meikai University, Saitama, Japan*).

**1953** Relation between Spinal Amino Acid Release and Pain-related Response in Hyperalgesia in Rat's Chin. M. YOSHINARI\*, Y. MATSUMOTO, T. ISHIKAWA, and O. NAKANISHI (*Kyushu Dental College and Yamaguchi University School of Medicine, Japan*).

**1954** Clonidine Increases the Threshold of Pain and Touch Sensation of 30% Nitrous Oxide in the Human Face. K. UMEDA\*, O. NAKANISHI, T. ISHIKAWA, and S. SIIBA (*Makiyama Central Hospital, Kyushu Dental College, Yamaguchi University, Kokurakita, Kitakyushu, Japan*).

**1955** Mandibular Third Molar Position in Bionator-treated vs. Control Patients. A.D. FUSCO\*, C. DOLCE, P.D. JOHNSON, T.T. WHEELER, J.D. RUSKIN, and M.L. OBERDORFER (*Department of Oral and Maxillofacial Surgery and Department of Orthodontics, University of Florida College of Dentistry, Gainesville, USA*).

**1956** Comparison of Retrograde Apicoectomy Cavities Prepared with Different Ultrasonic Systems. V. JOECKEL\*, M.A. BAUMANN, and S. KIM (*Dental Schools of Cologne, Germany, and Pennsylvania, Philadelphia, USA*).

**1957** Compressive and Cantilever Bending Fatigue of a Porous Tantalum Biomaterial. D.W. MITCHELL, J.A. BOGAN, D.E. PARSELL, R.A. POGGIE, and L.D. ZARDIACKAS\* (*University of Mississippi Medical Center, Jackson; and Implex Corp., Allendale, NJ, USA*).

## **Periodontal Research – Diagnosis/Epidemiology - Probing and Radiographic Assessment of Periodontal Disease**

**1958** CEJ Detection Using a Novel Modification of the Florida Probe. P.M. PRESHAW, L. KUPP\*, A.F. HEFTI, and A. MARIOTTI (*Department of Periodontology, Ohio State University, Columbus, USA*).

**1959** Comparison of Two Instructional Methods for Periodontal Examiners. P. LENTON\*, J. HODGES, B.S. SPARKS, and B. PIHLSTROM (*University of Minnesota Oral Health Clinical Research Center, Minneapolis, USA*).

**1960** *In vitro* Assessment of Pressure Measurements Using 3 Different Probes. K. PATEL\*, D.G. GILLAM, G.S. GRIFFITHS, and J.S. BULMAN (*Eastman Dental Institute and Hospital, University of London, UK*).

**1961** Validation of Periodontal Hand Probing Collaborated in Two Research Centers. C. GAO\*, A.G. SNIDER, H.M. PICKRUM, J.G. BORING, S. BROWN, S. GIVARUANGSAWAT, and J.D. AUVIL (*Mississippi State University; and Procter and Gamble Company, Cincinnati, OH, USA*).

**1962** Effect of Marginal Inflammation on Probing Depth Measurements. Conventional vs. Controlled-force Probes. R.C.M. TUEROS, R.A.C. MARCANTONIO\*, and E. MARCANTONIO, Jr. (*Araraquara Dental School—UNESP, Brazil*).

**1963** Development of an Integrated System for Clinical Detection, Diagnosis, and Treatment of Periodontal Diseases. F.M. HUNTER\*, K.A. HUNTER, N.D. MARTIN, and P.D. BARNARD (*Faculty of Dentistry, University of Sydney, NSW, Australia*).

**1964** Canine Gingivitis Assessment by Computer-aided Three-dimensional Coordinate Metrology. A. SNIDER\*, W. BUCHANAN, C.H. YEH, R. DONOVAN-BRAND, V. JONAOVSKI, L. ZOU, and E. LYNCH (*Procter & Gamble Co., Mason, OH, USA; and St. Bart's Royal London SMD, UK*).

**1965** Clinical and Metrology Assessment of Experimentally Induced Gingivitis. S. YEGANEH\*, E. LYNCH, B.H. SHEARER, M.R. HEATH, V. JOVANOVSKI, and L. ZOU (*Saint Bartholomew's and Royal London School of Medicine and Dentistry; and Unilever Research, UK*).

**1966** Ultrasonic Determination of Thickness of Masticatory Mucosa: A Methodological Study. N. SCHALLER\*, H.P. MÜLLER, and T. EGER (*Department of Operative Dentistry, University of Heidelberg; and German Armed Forces' Central Hospital, Koblenz, Germany*).

**1967** Reproducibility of Clinical Assessment of Keratinized Tissue Width. P. GUGLIELMONI\*, A. PROMSUDTHI, L. TROMBELLI, D.N. TATAKIS, and M. CRIGGER (*Loma Linda University, CA, USA; and University of Ferrara, Italy*).

**1968** A Study of Human Gingival Blood Flow Using Laser Doppler Flowmetry. K.Y. HAN\*, H.S. KIM, S.B. KIM, H.J. KIM, and B.O. KIM (*Department of Periodontology, School of Dentistry, Chosun University, Kwangju, Korea*).

**1969** Effect of Measurement Error on Clinical Study Design: A Meta-analysis. R.L. JEFFCOAT\* and M.K. JEFFCOAT (*University of Alabama School of Dentistry, Birmingham, USA*).

**1970** Bone Height Measurements Using Computer Digitization of Panoramic Radiographs. M. KRETCHMER\*, S.G. GROSSI, E. HAUSMANN, R. DUNFORD, M. SHLOSSMAN, E.E. MACHTEI, and R.J. GENCO (*Periodontal Research Center, Oral Biology, State University of New York, Buffalo, USA*).

**Seq#: 199** **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**1971** First Results of the Depiction of Periodontal Structures with Magnetic Resonance. M.A. BAUMANN\*, P. THEISSEN, J. FANGHÄNEL, and Th. KOCHER (*Dental School, Nuclear Medicine of Cologne; and Dental School of Greifswald, Germany*).

**1972** The Diagnosis of "Perio-endo" Lesions—A Preliminary Retrospective Study. U.R. DARBAR\*, S. VAUGHAN, and K. GULABIVALA (*Eastman Dental Hospital & Institute, London, UK*).

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**Seq#: 200**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Periodontal Research – Pathogenesis - Epithelial Cells;  
Neutrophils**

**1973** Antigen Detection in Cultured Human Gingival Keratinocytes after Different Fixatives. A. GASPARONI\*, L. FONZI, K. JENSEN, C. ORGAN, and G.K. JOHNSON (*University di Siena, Italy, and Dows Institute for Dental Research, University of Iowa, Iowa City, USA*).

**1974** Variation in Glycosaminoglycan Production by Gingival Epithelial Cells. T. JACKSON, P. FAMOLARE, T. DeGARCIA, O. CARRO, and C. LEONE\* (*Department of Periodontology, Tufts University, Boston, MA, USA*).

**1975** Adhesion of *Fusobacterium nucleatum* to Human Epithelial Cells and Erythrocytes. E. GAETTI-JARDIM, Jr.\* and M.J. AVILA-CAMPOS (*University of São Paulo, Brazil*).

**1976** Role of Hag B in the Binding of *Porphyromonas gingivalis* to Epithelial Cells. J. KATZ\* and S.M. MICHALEK (*Departments of Oral Biology and Microbiology, School of Dentistry, University of Alabama at Birmingham, USA*).

**1977** Developing Mechanism of Malassez' Epithelial Rest. M. SUZUKI\*, T. INOUE, M. SHIMONO, and S. YAMADA (*Department of Periodontology and Pathology, Tokyo Dental College, Chiba, Japan*).

**1978** Survival Factors of Epithelial Rests of Malassez *in vitro*. M. NISHIMURA\*, Y. ABIKO, J. MITAMURA, and T. KAKU (*Oral Pathology, Health Sciences University of Hokkaido, Japan*).

**1979** Role of the Amino-terminal Region of *Porphyromonas gingivalis* Fimbriae in Adherence to Epithelial Cells. H.T. SOJAR\*, Y.-P. HAN, N. HAMADA, A. SHARMA, and R.J. GENCO (*Oral Biology Department, State University of New York at Buffalo, USA; and Department of Microbiology, Kanagawa Dental College, Yokosuka, Japan*).

**1980** Apoptotic Cell Death of KB Cells after *Actinobacillus actinomycetemcomitans* Infection. S. KATO\*, K. NAKASHIMA, M. INOUE, J. TOMIOKA, K. NONAKA, M. MURO, T. NISHIHARA, and Y. KOWASHI (*Health Sciences University of Hokkaido and National Institute of Infectious Diseases, Japan*).

**1981** Fas Ligand Expression by Gingival Crevice Neutrophils. J.M. CRAWFORD\* and B. MOORE (*Department of Periodontics, College of Dentistry, University of Illinois at Chicago, USA*).

**1982** Characterization of Diacylglycerol Kinase Gene in Neutrophils. H. NASSAR\*, H. MAEDA, C. CHAMPAGNE, S. TAKASHIBA, B. GORDON, M. WARBINGTON, and T.E. VAN DYKE (*Boston University Goldman School of Dental Medicine, MA, USA; Okayama University Dental School, Japan; and Al-Azhar University, Egypt*).

**1983** Sequence Analysis of the Human Neutrophil Lipoxin A<sub>4</sub> Receptor (LXA<sub>4</sub>R) from Periodontal Patients: Impact of a

Lipoxin Analog on Superoxide Anion Generation. N. CHIANG, B.D. LEVY, Z. TOHME\*, T.E. VAN DYKE, and C.N. SERHAN (*CET and RI, Brigham & Women's Hospital/Harvard Medical School; and Boston University School of Dental Medicine, MA, USA*).

**1984** Abnormal Neutrophil Transendothelial Migration in LJP: Differential Responses to Leukotriene B<sub>4</sub> and Chemotactic Peptides. S.P. COLGAN, T.E. VAN DYKE, G.L. STAHL, M. WARBINGTON\*, and C.N. SERHAN (*CET and RI, Brigham & Women's Hospital/Harvard Medical School; and Boston University School of Dental Medicine, MA, USA*).

**1985** Nitric-oxide-mediated Apoptosis in *A. actinomycetemcomitans*-infected Macrophages. K. NAKASHIMA\*, J. TOMIOKA, S. KATO, M. MURO, M. INOUE, K. NONAKA, T. NISHIHARA, and Y. KOWASHI (*Health Sciences University of Hokkaido and National Institute of Infectious Diseases, Japan*).

**1986** Large-scale Induction of Apoptosis among T Lymphocytes Stimulated *in vitro* with *A. actinomycetemcomitans*. A. NALBANT\* and H.H. ZADEH (*Dental School, University of Southern California, Los Angeles, USA*).

**1987** Localized Juvenile Periodontitis Neutrophils Exhibit Aberrant Responses to LTB<sub>4</sub> and TNF $\alpha$ . B.D. LEVY, K. GRONERT, B. GORDON\*, T.E. VAN DYKE, and C.N. SERHAN (*CET and RI, Brigham & Women's Hospital/Harvard Medical School; and Department of Periodontology and Oral Biology, Boston University School of Dental Medicine, MA, USA*).

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**Seq#: 201**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Periodontal Research – Therapy - GTR, GBR:      Human  
Studies**

**1988** Guided Bone Regeneration for Alveolar Ridge Defects Using Either Demineralized Freeze-dried Bone Allograft (DFDBA) or Autogenous Bone DFDBA Composite Grafts. T. NEILS\*, H. TOWLE, D. ASSAD, B. PAUL, and B. NICOLL (*Naval Dental School, Bethesda, MD, USA*).

**1989** Ridge Preservation Using fd-PTFE Membranes and/or Resorbable Hydroxylapatite. A. TREVIÑO\*, M. DE LA ROSA, and F. RIVERA-HIDALGO (*U.A.N.L., Monterrey, Nuevo León, Mexico; and Baylor College of Dentistry, TAMUS, Dallas, TX, USA*).

**1990** Healing in Intrabony Defects Using Two Bioresorbable GTR Membranes: 12-month Results. M. CHRISTGAU, N. BADER\*, A. WENZEL, and G. SCHMALZ (*Dental School, University of Regensburg, Germany; Department of Stomatology/Periodontics, University of Texas at Houston, USA; and Royal Dental College, University of Aarhus, Denmark*).

**1991** Effects of Bioactive Glass Implantation in Intrabony Periodontal Defects. J.S. PARK\*, S.H. CHOI, K.-S. CHO, C.-K. KIM, and J.K. CHAI (*Department of Periodontology, College of Dentistry, Yonsei University, Korea*).

**1992** Regenerative Periodontal Surgery in Intrabony Defects with Biodegradable Barriers. P. EICKHOLZ\*, C.E. DÖRFER, T.-S. KIM, H. STEINBRENNER, and R. HOLLE (*Department of Operative Dentistry & Periodontology, University of Heidelberg; and GSF-National Research Center for Environment and Health, Institute of Medical Informatics & Health Sciences Research, Oberschleissheim, Germany*).

**1993** Bone Fill in Human Intrabony Defects. A.F.M. LIMA\* and E. HEBLING (*Dental School of Piracicaba, University of Campinas, Brazil*).

**1994** Clinical Evaluation of a Collagen Membrane in Guided Tissue Regeneration. J.A. CIRELLI\*, E. MARCANTONIO, Jr., R.A.C. MARCANTONIO, P.I. COSTA, and C. ROSSA, Jr. (*Araraquara Dental School, São Paulo, Brazil*).

**1995** Treatment of Human Gingival Recessions. Comparative Study. E.P. ROSETTI\*, R.A.C. MARCANTONIO, E. MARCANTONIO, Jr., and L.M. SAMPAIO (*Dental School of Araraquara—UNESP, Brazil*).

**1996** Adverse Reaction to Absorbable GTR Device. L. TROMBELLI\* and D.N. TATAKIS (*University of Ferrara, Italy; and Loma Linda University, CA, USA*).

**1997** Root Coverage of Shallow Gingival Recessions with a Bioresorbable Membrane. M. STAHL, H.P. MÜLLER\*, and T. EGER (*Department of Operative Dentistry, University of Heidelberg; and German Armed Forces' Central Hospital, Koblenz, Germany*).

**1998** Laboratory Methodology for Managing Large Research Populations in Dentistry. F.W. SMITH\*, M.G. WORLEY, S. LIEFF, K. MOSS, J.D. BECK, and S. OFFENBACHER (*University of North Carolina Center for Oral and Systemic Diseases, Chapel Hill, USA*).

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**Seq#: 202**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Pharmacology, Therapeutics, & Toxicology - Dentifrices, Mouthrinses, and Whitening Agents**

**1999** The Sustained Anti-calculus Effects of Triclosan/Copolymer/NaF (TCN) in Dentifrice. R. RICHTER, T. XU\*, J. BRAHMS, and A. GAFFAR (*Colgate-Palmolive Company Technology Center, Piscataway, NJ, USA*).

**2000** Bacterial Desorption from Pellicle Conditioning Films—Effect of Dentifrice Supernates. H.J. BUSSCHER, H.C. van der MEI\*, H.C. GEERTSEMA-DORNBUSCH, D.J. WHITE, and E.R. COX (*University of Groningen, The Netherlands; and Procter & Gamble, Mason, OH, USA*).

**2001** Effect of Zinc Citrate-Triclosan Dentifrices on Plaque Growth. J.E. CREETH\*, A.M. LLOYD, F. SCHÄFER, and B.H. SHEARER (*Unilever Dental Research, Bexington, UK*).

**2002** Effects of Tartar Control Dentifrices on Surface Roughness of Dentin. M. PRENCIPE\*, Z. FU, and A. ZACCAGNINO (*Colgate-Palmolive Company, Piscataway, NJ, USA*).

**2003** Clinical Evaluation of the Desensitizing of Toothpaste with a High Content of Fluoride in Patients with Dentin Hypersensitivity. P.A. LEOUS, N. RUDENKOVA, and D. BOURGEOIS\* (*Minsk Medical Institute, Republic of Belarus; and Laboratory EA, University Lyon I, France*).

**2004** Efficacy of a Chlorine-dioxide-containing Mouthrinse in Oral Malodor. J. FRASCELLA\*, R. GILBERT, P. FERNANDEZ, and J. HENDLER (*TKL Research, Inc., Paramus, NJ, USA*).

**2005** Plaque Removal of Mouthwashes and Flossing Following Toothbrushing. S.G. CIANCIO, R.B. TRUELOVE, C.L. GARVIN, and D.R. WILLIAMS\* (*State University of New York at Buffalo; and Unilever Home and Personal Care USA, Trumbull, CT, USA*).

**2006** Comparative Plaque Removal of Mouthwashes Following Toothbrushing and Flossing. R.B. TRUELOVE\*, S.G. CIANCIO,

D.R. WILLIAMS, M.A. MATHER, and C.L. GARVIN (*Unilever Home and Personal Care USA, Trumbull, CT; and State University of New York at Buffalo, USA*).

**2007** The Effects of Mouthrinses on Dentinal Permeability. S.D. TURNER\*, W. SHEN, L.E. WYBORNY, and J.T. CHAN (*Basic Sciences, University of Texas Dental Branch; and VA Medical Center, Houston, TX, USA*).

**2008** Substantivity of Oral Rinses on Buccal Epithelial Cells: An *in vitro* Evaluation Method. J. GRINSPAN\*, S. NARES, and A.M. IACOPINO (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**2009** Effect of a Microemulsion Formulation of Cyclosporine (Neoral) Mouthwash in the Treatment of Recalcitrant Oral Lichen Planus. A.M. MANGANONI\*, A. MAJORANA, F. FACCHETTI, and A. SCALA (*Department of Dermatology, School of Dentistry, and Department of Pathology, University of Brescia, Italy*).

**2010** Clinical Evaluation of the Whitening Effects of Three Mouthrinses. S. ANDREANA, S.G. CIANCIO, M.L. MATHER, and M. BESSINGER\* (*Center for Dental Studies, State University of New York at Buffalo, USA*).

**2011** *In vivo* and *in vitro* Studies Demonstrating the Ability of a BS&P Whitening Toothpaste to Whiten Teeth. C.L. GARVIN\*, C. RYLES, R.B. TRUELOVE, D.R. WILLIAMS, and A. ZIEMKIEWICZ (*Unilever Home and Personal Care USA, Trumbull, CT, USA*).

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**Seq#: 203**      **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Neuroscience/TMJ - General (Including Sensory Testing, CNS Anatomy, and Peripheral)**

**2012** Short-term and Long-term Reliability of Pressure Algometry in the Masticatory Muscles. R. CIMINO\*, M. FARELLA, A. MICHELOTTI, and R. MARTINA (*Department of Orthodontics, University of Naples "Federico II", Italy*).

**2013** Factors Affecting Vibration Detection on Facial Skin. A. JAMES\*, G.K. ESSICK, F.P. McGLONE, and D.G. KELLY (*School of Dentistry and Department of Statistics, University of North Carolina at Chapel Hill, USA; and Unilever Research, Port Sunlight, UK*).

**2014** Does Stimulus Hole Depth Influence Oral Size Illusion Magnitude? R. BITTERN and R. ORCHARDSON\* (*Institute of Biomedical & Life Sciences and Dental School, University of Glasgow, Scotland, UK*).

**2015** Absolute and Relative Pressure Pain Thresholds in the Orofacial Region. L. FREDRIKSSON\*, P. ALSTERGREN, and S. KOPP (*Department of Clinical Oral Physiology, Karolinska Institutet, Huddinge, Sweden*).

**2016** Burning Mouth Sensations in Patients with Temporomandibular Disorders. C. HIRSCH\*, M. JOHN, A. ZWIJNENBURG, and T. REIBER (*University of Halle and University of Leipzig, Germany*).

**2017** Post-exercise Pain in the Masticatory Muscles after Prolonged Chewing. A. MICHELOTTI\*, M. FARELLA, R. CIMINO, R. MARTINA, and M. BAKKE (*Department of Orthodontics, University of Naples "Federico II", Italy; and Department of Oral Physiology, University of Copenhagen, Denmark*).

**2018** Effects of Cold Pressor on Masseter Muscle Oxygen Saturation Levels. K. MAEKAWA\*, T. KUBOKI, A. YAMASHITA, and G.T. CLARK (*Okayama University Dental*

School, Japan; and UCLA School of Dentistry, Los Angeles, CA, USA).

**2019** Hormonal Effects on Sex Differences in Rats' Brief Access Licking. D.A. KELLER\*, M.D. BROTH, and I.L. BERNSTEIN (University of Washington, Seattle, USA).

**2020** Jaw-opening-related Cortical Readiness Potentials on TMJ Clicking Disorders. N. NARITA\*, Y. NAKABAYASHI, M. OKUBO, and T. MATSUMOTO (Nihon University School of Dentistry at Matsudo, Chiba, Japan).

**2021** Activities of Basal Ganglia Neurons during Mastication in Awake Rabbits. Y. MASUDA\*, T. KATO, A. KOMURO, O. HIDAKA, and T. MORIMOTO (Department of Oral Physiology, Osaka University Faculty of Dentistry, Suita, Japan).

**2022** Densitometry Analysis of Rat Brainstem Neurons Labeled with WGA-TRITC. A. SAWCZUK\* and D. COVELL (Departments of OPBDS and Orthodontics, UMDNJ, Newark, NJ, USA).

**2023** Acidic Glycosphingolipids (B-series Gangliosides) Promote Axotomized Hypoglossal Nerve Regeneration. M. ITOH\*, N. BABA, R.H. CHO, Y. KUGA, A. MIZUNO, S. FUKUMOTO, A. ROKUTANDA, H. OISHI, and K. FURUKAWA (Nagasaki University School of Dentistry and Nagoya University School of Medicine, Japan).

**2024** Sympathetic Sprouting Does Not Occur in the Trigeminal Ganglion Following Nerve Injury. U. BONGENHIELM\*, F.M. BOISSONADE, P.P. ROBINSON, and K. FRIED (Karolinska Institutet, Stockholm, Sweden; and Department of Oral and Maxillofacial Surgery, University of Sheffield, England, UK).

**2025** TrkA-immunoreactivity and Plasticity of Periodontal Ligament Epithelia Suggest New Functions. D.A. WOODNUTT\* and M.R. BYERS (Dental School and Department of Anesthesiology, University of Washington, Seattle, USA).

**2026** Neuroendocrine Cells in Malassez Epithelium of the Cat. O. TADOKORO\*, V. VANDEVSKA-RADUNOVIC, T. MAEDA, Y. KOZAWA, and I. HALS KVINNSLAND (Nihon University, Chiba, Tokyo, and Niigata University, Japan; and University of Bergen, Norway).

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**Seq#: 204** **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Experimental Pathology - Oral Cancer / Genetic Changes**

**2027** Allelic Loss at 14q is an Early Event in Oral Carcinogenesis. M.P. ROSIN, X. CHEN\*, Z.-C. NA, and L. ZHANG (School of Kinesiology, Simon Fraser University; and OMBS, Dentistry, University of British Columbia, Canada).

**2028** Differential Diagnosis of Verrucous Hyperplasia with Assistance of Microsatellite Analysis. C.F. POH\*, M.P. ROSIN, X. CHENG, and L. ZHANG (Dentistry, University of British Columbia; and School of Kinesiology, Simon Fraser University, Canada).

**2029** Identification of Metabolic Polymorphisms Using Archival Specimens of Oral Lesions. M. MORRIS\*, X. CHENG, F.-Y. POH, L. ZHANG, and M.P. ROSIN (School of Kinesiology, Simon Fraser University; Cancer Control Research Unit, British Columbia Cancer Agency; and Dentistry, University of British Columbia, Canada).

**2030** Optimized Method for Identifying Genomic Alterations in Oral Cancer Progression. A. ISHKANIAN\*, C. MALLOFF, M.P. ROSIN, L. ZHANG, and W.L. LAM (BC Cancer Agency; University of BC; and Simon Fraser University, BC, Canada).

**2031** Loss of Heterozygosity of p53 Gene of Oral Cancer Using Exfoliative Cytology. M.F. HUANG\*, Y.C. CHANG, P.S. LIAO, C.H. TSAY, and M.Y. CHOU (School of Dentistry, Chung Shan Medical and Dental College, Taichung, Taiwan, ROC).

**2032** Induction of Senescence in Oral Cancer Cells by a Demethylating Agent. M.K. KANG, J. LIM\*, R. KIM, P. LIU, and N.-H. PARK (UCLA Dental Research Institute, Los Angeles, CA, USA).

**2033** Identification of Genes that Correlate with the HPV-induced Oral Cancers. X. LIU\*, J. NISHITANI, J. McQUIRTER, and N.-H. PARK (Charles R. Drew University of Medicine & Science, and UCLA Dental Research Institute and School of Dentistry, Los Angeles, CA, USA).

**2034** Stepwise Loss of Loci on 3p during Oral Carcinogenesis. M.P. ROSIN, Z.-C. NA\*, X. CHEN, and L. ZHANG (School of Kinesiology, Simon Fraser University; and OMBS, Dentistry, University of British Columbia, Canada).

**2035** Decreased Cyclin E Expression in Oral Cancer after Transfer of the Wild-type p53 Gene. Q. CHEN\* and L.P. SAMARANAYAKE (Oral Bioscience Laboratory, Faculty of Dentistry, University of Hong Kong; and West China University of Medical Sciences, Chengdu, China).

**2036** p53, p21, Rb, MDM2 Proteins in Tongue Carcinoma from Patients < 35 Years. J.A. REGEZI\*, N.P. DEKKER, A.S. McMILLAN, V.R. AMADOR, A.M. GARCIA, L.M.R.G. RIVERA, E. CHRYSOMALI, and I.O.L. NG (University of California at San Francisco, USA; UAMX, Mexico City, Mexico; University of Athens, Greece; and University of Hong Kong, China).

**2037** c-Myc Oncoprotein Overexpression and DHFR Gene Amplification in Ameloblastoma. C. BIREK\*, E. HENSON, and S. MAI (Institute of Cell Biology and Faculty of Dentistry, University of Manitoba, Winnipeg, Canada).

**2038** Cyclin D1 Expression is Correlated with Poor Prognosis in Patients with Areca Quid Chewing-related Oral Squamous Cell Carcinomas in Taiwan. M.Y.P. KUO\* (School of Dentistry, National Taiwan University, Taipei, ROC).

**2039** Activity of Human Papillomavirus Type 16 P97 Promoter in Immortal and Tumorigenic Human Oral Keratinocytes. B.-M. MIN\*, J.-K. KOOK, and J.H. KIM (College of Dentistry, Seoul National University, Korea).

**2040** Study of p53 Gene Mutation in Oral Leukoplakia. A. FUKATSU\*, T. YOSHIDA, T. KUROKI, and S. OTAKE (Nihon University School of Dentistry at Matsudo, Chiba, Japan).

**2041** Effect of N-Glycosylation on the Expression of G1 Regulators in Oral Cancer. S. CAWLEY\*, F. ERKAN, and M.A. KUKURUZINSKA (Department of Molecular and Cell Biology, School of Dental Medicine, Boston University, MA, USA).

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**Seq#: 205** **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Craniofacial Biology - Congenital Syndromes: Clinical Studies**

**2042** Dental Development, Skeletal Maturity, and Height Growth in Amelogenesis Imperfecta. P. SCHEUTZEL\* (Center for Dentistry, University of Münster, Germany).

**2043** Pierre Robin Sequence Associated with Ring Chromosome 22 Abnormalities. B.T. DENNIS\* and C.F. SALINAS (Medical University of South Carolina, Charleston, USA).

- 2044** Craniofacial Analysis of Implant-treated and Non-treated Ectodermal Dysplasia Children. E.L. JOHNSON\*, L.J. BAILEY, A.D. GUCKES, C.L. PHILLIPS, J.T. WRIGHT, and M.W. ROBERTS (*Department of Pediatric Dentistry, University of North Carolina, Chapel Hill, USA*).
- 2045** Effect of Methotrexate on the TMJ and Facial Morphology in Juvenile Rheumatoid Arthritis Patients. D.O. INCE, F.J. SOBKOWSKI, D.J. FERGUSON, and S.J. PAZIOS\* (*Center for Advancement of Dental Education, St. Louis University, MO, USA*).
- 2046** Sagittal Growth of the Cranial Base in Normal and Cleft Fetuses. T.F. SHERWOOD\*, M.P. MOONEY, T.D. SMITH, J.J. SCIOTE, G.M. COOPER, and M.I. SIEGEL (*Departments of Orthodontics and Anthropology, University of Pittsburgh, PA; and School of Physical Therapy, Slippery Rock University, PA, USA*).
- 2047** Variable Expressivity with Apparent Reduced/Non-penetrance in Crouzon Syndrome. A.D. BRITTO\*, E.T. EVERETT, R. WARD, and J.K. HARTSFIELD, Jr. (*Virginia Commonwealth University, Richmond; and Indiana University, Indianapolis, USA*).
- 2048** Evidence for Two Distinct Gingival Fibromatosis Loci on Chromosome 2p. D. PALLOS\*, V. SASHI, J. CORTELLI, J.P. FRYNS, S.S. MANN, M.J. PETTENATI, and T.C. HART (*University of Taubate, São Paulo, Brazil; School of Medicine, Wake Forest University, Winston-Salem, NC, USA; and Center for Human Genetics, University Hospital, Leuven, Belgium*).
- 2049** Langer Giedion Syndrome with Bilateral Agenesis of the Tibia. E.L. MULLINS\* and C.F. SALINAS (*Medical University of South Carolina, Charleston, USA*).
- 2050** Molecular Basis of Osteogenesis Imperfecta Type I. E.A. VALIENTE\* and P.H. BYERS (*University of Washington, Seattle, USA*).
- 2051** Cellular Morphology of Cherubism. S. NIAZI\*, N. FUKAI, V. TIZIANI, and B. OLSEN (*Harvard Medical School and Department of Oral Biology, Harvard School of Dental Medicine, Boston, MA, USA*).
- 2052** Sublocalization of the Papillon-Lefèvre Syndrome Locus on Chromosome 11q. T.C. HART\*, S. WALKER, D. BOWDEN, D. WYNN, K.A. GHAFAR, I. CEBECI, A. EFEGLU, and E. FIRATLI (*Wake Forest University School of Medicine, Winston-Salem, NC, USA; Ein-Shams University, Cairo, Egypt; and University of Istanbul School of Dentistry, Turkey*).
- 2053** Collagen XII in Normal and Unclassified Ehlers-Danlos Syndrome Skin Fibroblasts. O.M. SANCHEZ\* and R.W. TAYLOR (*School of Dentistry, University of Alabama, Birmingham, USA*).
- 2054** Conservation of Molecular Signals Affecting Brain and Facial Morphogenesis. M.A. FEINBERG\*, D. HU, and J.A. HELMS (*University of California at San Francisco, USA*).
- 2057** Early Organogenesis and Cell Contacts in the Murine Proliferating Hypophysis. Y. IWAI-LIAO\*, S. KUMABE, and Y. HIGASHI (*Oral Anatomy, Osaka Dental University, Japan*).
- 2058** Retinoic Acid Shifts Gene Expression and Migration Pathways of Neural Crest Cells. J.M. RICHMAN\*, M.E. MacDONALD, and M.R. SAURETTE (*Department of Oral Health Sciences, Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).
- 2059** Biomechanical Properties of the Growing Baboon Mandible. T. HUYNH\* and P.C. DECHOW (*Baylor College of Dentistry, Dallas, TX, USA*). (1998 AADR Student Fellowship Recipient)
- 2060** Implantation of Dentin Matrix in Skull Defects Using Amniotic Membrane. M.F. GOMES\*, M.J.S. SILVA, T.O. NOGUEIRA, O. TAVANO, and S.A. CATANZARO GUIMARÃES (*FOSJC—UNESP; and FOB—Universit e of S o Paulo, Brazil*).
- 2061** Rat Strain Variation of Craniofacial Morphologic Traits. A.T. MOULLAS\*, M. HANS, A.J. THOMAS, and K. STROHL (*Departments of Orthodontics and Medicine, Case Western Reserve University, Cleveland, OH, USA*).
- 2062** Masseter Muscle Adaptation to Bite Raising and Training in Young Rat. A. BRESIN\*, U. BAGGE, and S. KILIARIDIS (*Department of Orthodontics and Institute of Anatomy and Cell Biology, G teborg University, Sweden*).
- 2063** Craniofacial Morphology of Perinatal Rabbits with Premature Interfrontal Suture Synostosis. M.P. MOONEY\*, G.M. COOPER, A. BURROWS, W. WIGGINTON, T.D. SMITH, J. DECHANT, H.W. LOSKEN, and M.I. SIEGEL (*Departments of Anatomy & Histology and Anthropology, University of Pittsburgh; and School of Physical Therapy, Slippery Rock University, PA, USA*).
- 2064** TGF- $\beta$  Isoform Expression in the Perisutural Tissues of Craniosynostotic Rabbits. E. POISSON\*, M.P. MOONEY, R.R. KOEPEL, G.M. COOPER, L.A. OPPERMAN, and J.J. SCIOTE (*Departments of Orthodontics, Anatomy & Histology, and Microbiology & Biochemistry, University of Pittsburgh, PA; and Department of Biomedical Sciences, Baylor College of Dentistry, Dallas, TX, USA*).
- 2065** Structural Response of Rat Craniofacial Bone to Thyroidectomy. P.C. DECHOW\* and T. BERNARD (*Baylor College of Dentistry, Dallas, TX, USA*).
- 2066** Locally Released RA Causes Facial Defects in a Position-specific Manner. M.R. SAURETTE\* and J.M. RICHMAN (*Department of Oral Health Sciences, Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).
- 2067** Facial Development and Type III Collagen RNA Expression in Osteopetrosis. S.C. MARKS, Jr.\*, C. LUNDMARK, T. WURTZ, P. ODGREN, C.A. MacKAY, A. MASON-SAVAS, and S. POPOFF (*University of Massachusetts Medical School, Worcester, MA; Center for Oral Biology, Karolinska Institutet, Huddinge, Sweden; and School of Medicine, Temple University, Philadelphia, PA, USA*).

**Seq#: 206** **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Craniofacial Biology - Craniofacial Morphology: Animal Model Studies**

- 2054** Craniofacial Structures Develop from Ventral Neural Tube Cells. G.S. SOHAL\*, M.M. ALI, and A.A. ALI (*Medical College of Georgia, Augusta, USA*).
- 2055** Bone Morphogenetic Proteins in Chick Craniofacial Development. A. ASHIQUE\* and J.M. RICHMAN (*Department of Oral Health Sciences, Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).

**Seq#: 207** **Friday, March 12, 11:00 am - 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Craniofacial Biology - Congenital Syndromes: Experimental Studies**

**2068** Linkage Analysis of Gutter-shaped Root (GSR) on Mouse Chromosome 17. K. MATSUNE\*, T. SHIMIZU, Y. ASADA, and T. MAEDA (*Department of Pediatric Dentistry, Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**2069** Twirler: A Mouse Model to Study Clefts of the Lip and Palate. S.-G. GONG\*, A. SAKASEGAWA, N. WHITE, and S. RYNKIEWICZ (*School of Dentistry, University of Michigan, Ann Arbor, USA*).

**2070** Effects of the Cleft Primary Palate Mutation on Chick Craniofacial Development. M.E. MacDONALD\* and J.M. RICHMAN (*Department of Oral Health Sciences, Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).

**2071** CNBP-deficient Mice Exhibit Craniofacial and Skeletal Abnormalities. Y.-P. LI\*, E. LI, and W. CHEN (*Forsyth Dental Center, Boston; and Cardiovascular Research Center, Massachusetts General Hospital, Charlestown, USA*).

**2072** Cranial Asymmetry: The Effects of Plagiocephaly on Skeletal Structure. K.K. PATTERSON\* and R. SPEARS (*Louisiana State University School of Dentistry, New Orleans; and Baylor College of Dentistry—Texas A&M University System, Dallas, USA*).

## FRIDAY (Afternoon)

**Seq#: 208** **Friday, 1:45 pm – 3:45 pm**  
**Symposium, Ballroom A**

### Microbiology/Immunology and Experimental Pathology Groups - *Candida* and Candidiasis [Supported by Unilever Dental Research]

**Chairpersons: S.P. Sweet and S.J. Challacombe**

- 2073** 1:45 Opening Comments.  
1:50 Virulence Determinants of *C. albicans*. S.P. SWEET (*Guy's Hospital, London, UK*).  
2:15 Antifungal Drug Resistance. T.C. WHITE (*Seattle Biomedical Research Institute, WA, USA*).  
2:40 Non-specific Immunity to Candidiasis. F.G. OPPENHEIM (*Boston University, MA, USA*).  
3:05 *C. albicans* Antibodies and Vaccine Development. J.E. CUTLER (*Montana State University, Bozeman, USA*).  
3:30 Discussion.

**Seq#: 209** **Friday, 1:45 pm – 3:45 pm**  
**Symposium, Room 3**

### Behavioral Sciences/Health Services Research and Geriatric Oral Research Groups - *How to Conduct Evidence-based Dentistry: The International Cochrane Collaboration*

**Chairpersons: C. Hayes and C. Tulloch**

- 2074** 1:45 Opening Comments.  
1:50 The Cochrane Collaboration. ????? (*UK Cochrane Centre, Oxford, UK*).  
2:15 The Cochrane Oral Health Group. B. SHAW (*University Dental Hospital of Manchester, UK*).  
2:40 Completing a Systematic Review. H. WORTHINGTON (*University Dental Hospital of Manchester, UK*).

3:05 Current Issues and Applications of Meta Analysis in Dental Research. J. CORNELL (*VA Cochrane Center, San Antonio, TX, USA*).

3:30 Discussion.

**Seq#: 210** **Friday, 1:45 pm – 3:45 pm**  
**Symposium, Ballroom B**

### Experimental Pathology, Pulp Biology, and Periodontal Research Groups - *Cytokine Biology and Oral Diseases* [Sponsored by the American Association of Oral Biologists and the Japanese Association of Oral Biologists]

**Chairpersons: D. Graves and O. Alvares**

- 2075** 1:45 Opening Comments.  
1:50 Overview of Cytokine Biology. P. POLVERINI (*University of Michigan, Ann Arbor, USA*).  
2:00 Cytokines and Inflammation. S. MURAKAMI (*Osaka University, Japan*).  
2:20 Cytokines and Oral Tumors. M. LINGEN (*Oak Park, IL, USA*).  
2:40 Cytokines and Periodontal and Periapical Inflammation. D. GRAVES (*Boston University, MA, USA*).  
3:00 Cytokines and Wound Healing. H. ICHIO (*Tokyo Medical and Dental University, Japan*).  
3:20 Cytokine Inhibitors as Therapeutic Agents. A. TROUTT (*Immunex Corporation, Seattle, WA, USA*).  
3:40 Discussion.

**Seq#: 211** **Friday, March 12, 1:45 pm - 3:45 pm**  
**Poster Discussion Session, Room 13**

### Behavioral Sciences & Health Services Research - *NHANES III: Epidemiological Methods*

**Chairpersons: H. Gift and R. Selwitz**

- 1:45 Poster Viewing Time  
**2076** 2:15 Comparison between NHANES I and NHANES III-comparable NHANES I Tooth and Surface Data. A. THEARMONTREE\* and S.A. EKLUND (*School of Public Health, University of Michigan, USA*).  
**2077** 2:23 Black/White Disparities in the Oral Health Status of American Adults. M.R. ADESANYA\* and T.F. DRURY (*National Institute of Dental and Craniofacial Research, Bethesda, MD, USA*).  
**2078** 2:31 Black/White Disparities in Dental Sealant Use: United States, 1988-1994. R.H. SELWITZ\* and T.F. DRURY (*National Institute of Dental and Craniofacial Research, Bethesda, MD, USA*).  
**2079** 2:39 Mexican-American/White Non-Hispanic Disparities in Adult Oral Health. I. GARCIA\* and T.F. DRURY (*National Institute of Dental and Craniofacial Research, Bethesda, MD, USA*).  
**2080** 2:47 Going Beyond Poor/Non-poor Comparisons in Studying Oral Health Inequalities. T.F. DRURY and J.G. CORRIGAN\* (*National Institute of Dental and Craniofacial Research, National Institutes of Health, Bethesda, MD, USA*).  
**2081** 2:55 Socio-economic Disparities in Adult Oral Health in the United States. T.F. DRURY\*, I. GARCIA, and M.R. ADESANYA (*National Institute of Dental and Craniofacial Research, National Institutes of Health, Bethesda, MD, USA*).

**2082** 3:03 Disparities in Untreated Coronal Decay among Children and Adolescents. L.M. KASTE\* and T.F. DRURY (*Medical University of South Carolina, Charleston; and National Institute of Dental and Craniofacial Research, Bethesda, MD, USA*).

**2083** 3:11 Dental Caries in the Primary Dentition in the United States at National and State Levels. E. BELTRÁN\* and S. LOCKWOOD (*Centers for Disease Control and Prevention, Chamblee, GA, USA*).

3:18 Poster Discussion Time

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**Seq#: 212 Friday, March 12, 1:45 pm - 3:45 pm**  
**Oral Session, Room 18**

### **Cariology Research - Fluorides, Prevention**

**Chairpersons: K. Stephen and A. Spencer**

**2084** 1:45 Exposure to Water Fluoridation and Caries Increment. J. ARMFIELD, A.J. SPENCER\*, G.D. SLADE, and M.J. DAVIES (*University of Adelaide, South Australia; and University of North Carolina, Chapel Hill, USA*).

**2085** 2:00 Fluoridated-milk Scheme for Dental Caries Prevention in Bulgaria—10 Years' Experience. N. ATANASSOV\*, M. VRABTCHEVA, M. TODORVA, and N. MARKOVA (*Faculty of Stomatology, Medical Academy, Sofia, Bulgaria*).

**2086** 2:15 Results of a Three-year Implementation of Milk Fluoridation in the Russian Federation. E. KOUZMINA\*, A. KOLESNIK, T. SMIRNOVA, and V. ZIMINA (*Moscow Medical Stomatological Institute; and Central Institute of Dental Research, Moscow, Russia*).

**2087** 2:30 Investigating the Efficacy of Fluoride Supplements on Tristan da Cunha. C.A.P. SOUTHWICK\* and P.A. MOSSEY (*University of Dundee Dental Hospital and School, Scotland, UK*).

**2088** 2:45 A Blind Natural Fluoridation Caries and Fluorosis Study in Scotland. K. STEPHEN\*, L. MACPHERSON, R. STUART, W. GILMOUR, and M. MERRETT (*Glasgow University; Moray Health Services Trust; and Grampian Health Board, UK*).

**2089** 3:00 Contribution of Diet and Fluoridated Dentifrice to the Risk of Dental Fluorosis. S.M. PAIVA\* and J.A. CURY (*FO-UFMG/FO-USP/FOP-UNICAMP, Brazil*).

**2090** 3:15 Fluoride Concentration in Middle Eastern Foods. F.V. ZOHOURI and A. RUGG-GUNN\* (*Department of Child Dental Health, Newcastle University Dental School, UK*).

**2091** 3:30 Effectiveness of Different Dental Health Education Messages on Nursing Bottle Caries. M. KOWASH, M.E.J. CURZON\*, A. PINFIELD, and J. SMITH (*Department of Paediatric Dentistry, Leeds Dental Institute, University of Leeds, UK*).

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**Seq#: 213 Friday, March 12, 1:45 pm - 3:45 pm**  
**Oral Session, Room 15**

### **Craniofacial Biology - Sleep Apnea/Snoring (themed: clinical research)**

**Chairpersons: A. Lowe and S. Nelson**

**2092** 1:45 Respiratory Effects of Postural Change of Severe Sleep Apnea Subjects. M.M. ZAVARELLA\*, S. SHANKER, C.P.

POLLAK, F.M. BECK, and P.S. VIG (*Ohio State University College of Dentistry, Columbus, USA*).

**2093** 2:00 Cephalometric Indicators for the Oral Appliance Favorites. E.-K. PAE\*, K. FERGUSON, and K. HEIGHWAY (*Department of Orthodontics, University of Connecticut Health Center, Farmington, USA; and Faculty of Medicine and Dentistry, University of Western Ontario, London, Canada*).

**2094** 2:15 3D Cephalometric Analysis of Patients with Sleep Apnea. Y.H. CHA\*, M. HANS, D. DEAN, K. SUBRAMANYAN, and S. NELSON (*Craniofacial Research Group, Case Western Reserve University, Cleveland, OH, USA*).

**2095** 2:30 Effects of a Mandibular Repositioner on Obstructive Sleep Apnea. Y. LIU\*, A. LOWE, X. ZENG, and M. FU (*School of Stomatology, Beijing Medical University, China; Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).

**2096** 2:45 Titratable Oral Appliance Effects on Airway Size and Sleep Apnea. A. LOWE\*, T. SJÖHOLM, J. FLEETHAM, F. RYAN, Y. LUI, and Y.C. PARK (*Faculties of Dentistry and Medicine, University of British Columbia, Vancouver, BC, Canada*).

**2097** 3:00 Longitudinal Change in H-MP Distance among Snoring and Non-snoring Adults. Y.-Y. LAI\*, S. NELSON, and M. HANS (*Craniofacial Research Group, Case Western Reserve University, Cleveland, OH, USA*).

**2098** 3:15 Cephalometric Assessment of Snoring and Non-snoring Children. R.W. KULNIS, S. NELSON\*, M. HANS, and K. STROHL (*Craniofacial Research Group, Case Western Reserve University, Cleveland, OH, USA*).

3:30 Discussion

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**Seq#: 214 Friday, March 12, 1:45 pm - 3:45 pm**  
**Oral Session, Room A-5**

### **Dental Materials - Clinical Trials - Glass Ionomers, Dentin Adhesives**

**Chairpersons: M. Tyas and M. Edelberg**

**2099** 1:45 Clinical Performance of Soft-start Polymerized Class V Compomer Restorations. K. EL MAHDY\*, C. BENZ, A. MEHL, and R. HICKEL (*Department of Restorative Dentistry and Periodontology, University of Munich, Germany*).

**2100** 2:00 Atraumatic Restorative Treatment—Three Years' Clinical Evaluation. M.H. EDELBERG\* and M.L. BASSO (*Dental Materials and Pedodontics Departments, School of Dentistry, Salvador/Argentine Dental Association University, Buenos Aires, Argentina*).

**2101** 2:15 Eighteen-month Evaluation of ART Fillings Placed in Chinese Preschool Children. E.C.M. LO\* and C.J. HOLMGREN (*Faculty of Dentistry, University of Hong Kong*).

**2102** 2:30 Clinical Evaluation of a Glass-ionomer-based Dentin Adhesive—2-year Results. M.F. BURROW\* and M.J. TYAS (*School of Dental Science, University of Melbourne, Australia*).

**2103** 2:45 Clinical Evaluation of a New Adhesive System: Six-month Results. M.C. PETERS\*, J.B. DENNISON, M.E. McLEAN, K.W. STOFFERS, and J.C. HAMILTON (*Department of Cariology, Restorative Science and Endocrinology, School of Dentistry, University of Michigan, Ann Arbor, USA*).

**2104** 3:00 Successful Pulpal Capping with a Dentinal Adhesive. R. BORETTI\*, F. LUTZ, and I. KREJCI (*Department*



of Preventive Dentistry, Periodontology and Cariology, University of Zürich, Switzerland).

**2105** 3:15 A Clinical Evaluation of the Effects of a Ferric Oxalate Desensitizing Agent on Sensitive Dentin. W. BAKER\*, R.D. DAVIS, and B.W. RICHARDSON (*Keesler Air Force Base, Biloxi, MS, USA*).

**2106** 3:30 Clinical Evaluation of EBS Dentin Bonding Agent. M.J. TYAS\* and M.F. BURROW (*University of Melbourne, Australia*).

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**Seq#: 215** **Friday, March 12, 1:45 pm - 3:45 pm**  
**Oral Session, Room A-3**

**Dental Materials - Composite Bond Strength: Substrate Effects**

**Chairpersons: B. Brown and R. Haak**

**2107** 1:45 Dentin Bond Strength and Tubular Angulation. K.B. BROWN\*, Y. SHIMADA, and G.E. SCHUMACHER (*School of Dentistry, West Virginia University, Morgantown; and NIST, PRC/ADAHF, Gaithersburg, MD, USA*).

**2108** 2:00 Regional Differences in Micro-tensile Bond Strength of New Dental Adhesives. S. INOUE\*, H. SANO, Y. YOSHIDA, and B. VAN MEERBEEK (*Hokkaido University and Hiroshima University, Japan; and Catholic University of Leuven, Belgium*).

**2109** 2:15 Effect of Dentinal Tubule Orientation on Microtensile Bond Strength. S.J. BURDS\*, M.A. VARGAS, and S.R. ARMSTRONG (*University of Iowa, Iowa City, USA*).

**2110** 2:30 The Effect of Dentin Location and Tubule Orientation on Bond Strengths. S. PHRUKKANON\*, M.F. BURROW, and M.J. TYAS (*School of Dental Science, University of Melbourne, Australia; and Faculty of Dentistry, Srinakharinwirot University, Bangkok, Thailand*).

**2111** 2:45 Influence of Chemomechanical Caries Removal on Dentin Bonding. R. HAAK\*, U.B. FRITZ, F.-J. FABER, and M.J. NOACK (*Dental School, University of Cologne, Germany*).

**2112** 3:00 Analysis of Blood-contaminated Dentin Surface and the Influence of Blood Contamination on Adhesive Restorations. M. SHIRAIISHI\*, K. YOSHIKAWA, M. INOUE, K. NARIKAWA, and M. INOUE (*Department of Operative Dentistry, Osaka Dental University, Japan*).

**2113** 3:15 *In situ* Study on Bond Strengths of Composite Resin on Duraphat -treated Enamel. A.M. KIELBASSA\*, K.-Th. WRBAS, S. GURKMANN, and E. HELLWIG (*Department of Operative Dentistry and Periodontology, Albert-Ludwigs-University of Freiburg, Germany*).

**2114** 3:30 Tensile Bond Strength of Orthodontic Brackets in Different Methods of Fluoride Application. H.B. KIM, S.H. KOH, L.E. WYBORN\*, and J.T. CHAN (*Dental Branch, University of Texas Houston Health Science Center; and V.A. Medical Center, Houston, USA*).

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**Seq#: 216** **Friday, March 12, 1:45 pm - 3:45 pm**  
**Oral Session, Room A-2**

**Dental Materials - Composite Polymerization Shrinkage and Stresses**

**Chairpersons: P. Fan and D. Watts**

**2115** 1:45 Light Intensity and Depth of Cure According to ISO Tests. P.L. FAN\*, R.M. SCHUMACHER, K. AZZOLIN, and

R. GEARY (*ADAHF Research Institute; ASDA, Chicago; and Southern Illinois University, Alton, USA*).

**2116** 2:00 The Effect of Total Energy Input on the Strength of a Restorative Composite. I. CHOI\*, W.G. DE RIJK, and B.I. SUH (*Bisco Inc., Schaumburg, IL, USA*).

**2117** 2:15 The Effect of Total Energy Input on Physical Properties of Restorative Composites. B.I. SUH\*, W.G. DE RIJK, J. KANCA, and I. CHOI (*Bisco Inc., Schaumburg, IL; and Middlebury, CT, USA*).

**2118** 2:30 Polymerization Shrinkage of Condensable Composite Resins. T.C. AW\* and J.I. NICHOLLS (*University of Washington, Seattle, USA*).

**2119** 2:45 Polymerization Shrinkage-stress Kinetics in Luting and Restorative Resin Composites. D.C. WATTS\*, A. AL HINDI, and A.J. CASH (*University of Manchester Dental School, UK*).

**2120** 3:00 Polymerization Contraction Stress of Composites Containing Multi-functional Monomer. J.R. CONDON\* and J.L. FERRACANE (*Oregon Health Sciences University, Portland, USA*).

**2121** 3:15 Effect of Adhesive Layer Thickness on Polymerization Stress of Composite. K.K. CHOI\*, J.R. CONDON, and J.L. FERRACANE (*Kyung-Hee University, Seoul, Korea; and Oregon Health Sciences University, Portland, USA*).

**2122** 3:30 Reduction of Shrinkage Stress by Two-Step Curing. L. FENG\* and B.I. SUH (*Bisco, Inc., Schaumburg, IL, USA*).

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**Seq#: 217** **Friday, March 12, 1:45 pm - 3:45 pm**  
**Oral Session, Room A-4**

**Dental Materials - Experimental Composite Polymer Systems**

**Chairpersons: A. Rizkalla and C. Chappelow**

**2123** 1:45 Modulus of Elasticity and Fracture Toughness of Polymer Systems. A.S. RIZKALLA\*, D.W. JONES, K.W.M. DAVY, and M. BRADEN (*Dalhousie University, Halifax, NS, Canada; and St. Barts. and Royal London School of Medicine and Dentistry, London, UK*).

**2124** 2:00 Functionalization of Acid-containing Polymers with Oxazolines for Visible-light-curable (VLC) Dental Materials. B.M. CULBERTSON and S. SCHRICKER\* (*College of Dentistry, Ohio State University, Columbus, USA*).

**2125** 2:15 Photoinitiated Cationic Polymerization of Vinyl-ether-based Dental Adhesives. M.D. POWER\*, C.C. CHAPPELOW, C.S. PINZINO, J.D. OXMAN, J.A. MORRILL, and J.D. EICK (*Midwest Research Institute, Kansas City, MO; University of Missouri—Kansas City; and 3M Company, St. Paul, MN, USA*).

**2126** 2:30 Determination of Polymerization and Darkcure in Epoxy/Polyols by FTIR. G.M. KAUFMAN\*, J.D. EICK, and C.C. CHAPPELOW (*University of Missouri, Kansas City; and Midwest Research Institute, Kansas City, MO, USA*).

**2127** 2:45 Photopolymerizable Expanding Matrix Resin Systems for Low-stress Composites. C.C. CHAPPELOW\*, C.S. PINZINO, J.D. OXMAN, S.S. CHEN, and J.D. EICK (*Midwest Research Institute, Kansas City, MO; University of Missouri, Kansas City; and 3M Company, St. Paul, MN, USA*).

**2128** 3:00 Investigation of Alternatives to Urethane Dimethacrylate in Dental Resins. C.A. KHATRI\* and J.W. STANSBURY (*Dental and Medical Materials Group, National Institute of Standards and Technology, Gaithersburg, MD*).

**2129** 3:15 Cationic Visible-light-cured Adhesive Formulations with Enhanced Reactivity. R.P. CHAPPELL\*, C.S. PINZINO, C.C. CHAPPELOW, J.D. OXMAN, M.D. POWER, and J.D. EICK (*University of Missouri, Kansas City; Midwest Research Institute, Kansas City, MO; and 3M Company, St. Paul, MN, USA*).

**2130** 3:30 Synergistic Photosensitization of Phenylpropanedione with Camphorquinone. Y.J. PARK\*, K.H. CHAE, and H.R. RAWLS (*University of Texas Health Science Center, San Antonio, USA; and Chonnam National University, Republic of Korea*).

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**Seq#: 218** **Friday, March 12, 1:45 pm - 3:45 pm**  
**Poster Discussion Session, Room 14**

### Dental Materials - Ti Alloy & Miscellaneous

**Chairpersons: J. Lewis and T. Svec**

1:45 Poster Viewing Time

**2131** 2:15 *In vivo* Margin Quality of Titanium Inlays and Onlays. B. WOLF\*, M. WALTER, K. BOENING, and A. SCHMIDT (*Department of Prosthetic Dentistry, University of Technology, Dresden, Germany*).

**2132** 2:23 Thermal Sensitivity in Titanium Restorations. A. SCHMIDT\*, B. WOLF, K. BOENING, and M. WALTER (*Department of Prosthetic Dentistry, University of Technology, Dresden, Germany*).

**2133** 2:31 Experimental Impression Tray Fabricated with NiTi Shape Memory Alloy Plate. S. HIRANO\*, M. OZAWA, I. IKEJIMA, M. KOMORIYAMA, A. KOHNO, T. HIRASAWA, and H. IWAI (*Tsurumi University and Furukawa Electric Co., Japan*).

**2134** 2:39 Effects of Simulated Clinical Conditions on Nickel-Titanium Rotary Files. T.A. SVEC\* and J.M. POWERS (*Houston Biomaterials Research Center, University of Texas, Houston Dental Branch, USA*).

**2135** 2:47 Bisphenol A and Tamoxifen-induced Cytotoxicity: Competition for Estrogen Receptors. J.B. LEWIS\*, C.A. LAPP, T.E. SCHAFER, and G.S. SCHUSTER (*Medical College of Georgia, Augusta, USA*).

**2136** 2:55 The Use of 5-BrdU Immunocytochemistry on Dental Alloy Cytotoxicity Evaluation. M. CADENARO\*, R. DI LENARDA, V. GRILL, and M.A. SANDRUCCI (*Institute of Odontology and Stomatology and Department of Human Morphology, University of Trieste, Italy*).

3:03 Poster Discussion Time

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**Seq#: 219** **Friday, March 12, 1:45 pm - 3:45 pm**  
**Oral Session, Room 9**

### Diagnostic Systems - Caries/Endodontics

**Chairpersons: E. Verdonshot and B. Briseno**

**2137** 1:45 Can Occlusal Caries Diagnosis Be Aided by Dye Application? A.C. PEREIRA, E.H. VERDONSHOT\*, and M.C.D.N.J.M. HUYSMANS (*University of Campinas, Piracicaba, São Paulo, Brazil; and University of Nijmegen and University of Groningen, The Netherlands*).

**2138** 2:00 Caries Detection Comparing Two- and Three-dimensional Imaging Modalities. M. ABREU, Jr.\*, D.A. TYNDALL, E. PLATIN, J.B. LUDLOW, and C.L. PHILLIPS (*Federal University of Santa Catarina, Florianopolis, Brazil; and University of North Carolina, Chapel Hill, USA*).

**2139** 2:15 The Effects of Repeated Examinations and Lesion Size on Diagnostic Accuracy. T. HEAVEN\*, A. FIRESTONE, and R. WEEMS (*School of Dentistry, University of Alabama, Birmingham, USA; and School of Dentistry, University of Bern, Switzerland*).

**2140** 2:30 Assessment of Enamel Caries *in vivo* Using Digital Subtraction Radiography. D.J. CAPLAN\*, O. CHAI-UDOM, J.B. LUDLOW, D.A. TYNDALL, C.W. TRIOL, and A.E. WINSTON (*University of North Carolina, Chapel Hill; and Enamelon, Inc., Cranbury, NJ, USA*).

**2141** 2:45 An *in vivo* Evaluation of Third Generation Apex Locators. N.J. McDONALD\*, R. PILEGGI, G.N. GLICKMAN, and C. VARELLA (*Department of Endodontics, University of Maryland, Baltimore; and University of Texas, Houston, USA*).

**2142** 3:00 An *in vitro* Investigation Method to Determine the Accuracy of Electronic Apex Locators. B. BRISEÑO MARROQUIN\*, A. PISTORIUS, H. HARNISCH, and B. WILLERSHAUSEN (*Department of Operative Dentistry, Mainz, Germany*).

**2143** 3:15 3-D Analysis of Root Canal Geometry Using High-resolution Computed Tomography. O. PETERS\*, A. LAIB, P. RÜEGSEGGER, and F. BARBAKOW (*Department of Conservative Dentistry and Institute for Biomedical Engineering, Zürich University; and ETH, Zürich, Switzerland*).

3:30 Discussion

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**Seq#: 220** **Friday, March 12, 1:45 pm - 3:45 pm**  
**Oral Session, Room 2**

### Education Research - Undergraduate Issues

**Chairpersons: I. Stangel and S. Morganstein**

**2144** 1:45 From School to University—An Analysis of an Admissions System. G. HOAD-REDDICK\*, T.V. MACFARLANE, and V. GIBSON (*Turner Dental School, University of Manchester, UK*).

**2145** 2:00 The Use as Predictors of Correlations between Student/Patient Interactions and Examination Grades. S.I. MORGANSTEIN\*, C.E. MARSHALL, and S.E.P. DOWKER (*Comprehensive Dental Care, Saint Bartholomew's and Royal London School of Medicine and Dentistry, UK*).

**2146** 2:15 Faculty Agreement on Performance of Dental Student Graduates. P.J. LEGGOTT\*, J. STEINER, J. BAKER, and P.B. ROBERTSON (*University of Washington, Seattle, USA*).

**2147** 2:30 Teachers Evaluate a Program to Improve Caries Diagnosis from Radiographs. P.A. MILEMAN\*, G.C.H. SANDERINK, and W.B. van den HOUT (*Oral Radiology, ACTA, Amsterdam; and Medical Decision Making, LUMC, Leiden, The Netherlands*).

**2148** 2:45 Factors Involved in Accepted Candidates' Decisions to Attend Dental School. W.J. O'BRIEN\*, B.T. TRECEK, and K.M. COPPS (*Marquette University School of Dentistry, Milwaukee, WI, USA*).

**2149** 3:00 Application of Behavioral Sciences Teaching by UK Dental Undergraduates. C.M. PINE\* and P.M. MCGOLDRICK (*Section of Dental Public Health and Health Psychology, Dundee Dental Hospital and School, University of Dundee, Scotland, UK*).

**2150** 3:15 Knowledge Acquisition in Problem-based and Lecture/Tutorial-based Preclinical Courses. D.B. FERGUSON\* (*Biological Sciences, University of Manchester, UK*).

**2151** 3:30 Receiver Operating Characteristic (ROC) Analysis in Psychomotor Assessment. B.D. MONTEITH\*, E.E.J.

KIRK, G.R. LEWIS, and D.G. PURTON (*Department of Oral Rehabilitation, School of Dentistry, University of Otago, Dunedin, NZ*).

**Seq#: 221** **Friday, March 12, 1:45 pm - 3:45 pm**  
**Poster Discussion Session, Room 12**

### **Implantology - Radiographic Assessment of Dental Implants**

**Chairpersons: L. Lang and J. Jones**

1:45 Poster Viewing Time

**2152** 2:15 Accuracy and Reliability of Measurement Tools in the SIM/Plant™ System. Y. HAGIWARA\*, M. KOIZUMI, K. HONDA, and T. IGARASHI (*Nihon University School of Dentistry, Tokyo, Japan*).

**2153** 2:23 CT Data-based Construction of a Surgical Template for Dental Implant Surgery. T. KAUS\*, J. BAUER, M. SCHAICH, T. GRUNERT, C.D. CLAUSSEN, and H. WEBER (*Departments of Prosthodontics and Radiology, University of Tübingen, Germany*).

**2154** 2:31 A Comparison of Diagnostic Accuracy in 3DCT and Panoramic Radiography. K. HOSHI\*, H. KATAUMI, N. MANAKA, H. OGIUCHI, H. ABE, S. SHIMIZU, J. KAGAWA, F. SAKAI, T. OHASI, and T. OKAWA (*Tokyo Women's Medical University, Japan*).

**2155** 2:39 Standardized Tomographic Evaluation of Bone Changes around One-stage Surgically Placed TioBlasted Implants for Overdentures. L.A. LANG\*, D.A. FELTON, L.F. COOPER, M.S. SCURRIA, A.D. GUCKES, and J.D. MORIARTY (*School of Dentistry, University of North Carolina, USA*).

**2156** 2:47 Radiographic Crestal Bone Changes Adjacent to Two Implant Types after Loading. R. HARRIS\*, J. DOMINICI, J. DRUMMOND, P. SAMMON, and K. OKAZAKI (*University of Kentucky Colleges of Dentistry, Medicine, and Engineering; and Department of Veterans Affairs Medical Center, Lexington, KY, USA*).

**2157** 2:55 Crestal Bone Height Changes around Implants as a Function of Restorations. K.D. STEEL\*, W. GARDNER, T.B. BOZEMAN, R. LOUGHLIN, M. MILLER, and J.D. JONES (*University of Texas Health Science Center at San Antonio, USA*).

**2158** 3:03 A Comparison of Peri-implant Bone Height by Length and Position. J.D. JONES\*, W. GARDNER, T.B. BOZEMAN, R. LOUGHLIN, M. MILLER, and K.D. STEEL (*University of Texas Health Science Center at San Antonio, USA*).

3:11 Poster Discussion Time

**Seq#: 222** **Friday, March 12, 1:45 pm - 3:45 pm**  
**Oral Session, Room A-1**

### **Microbiology/Immunology - Phagocytosis/ Immunity/ Complement Activation**

**Chairperson: R. Boackle**

**2159** Evaluation of Resistance and Distribution Following Chemically Modified Tetracycline Administration. R.J. ORINGER, B. LIU, D. TANPATTANA, J. YOUNG\*, B. LEI, R. SINGH, and T.F. McNAMARA (*SUNY at Stony Brook, NY, USA*). **Presentation for J. Young moved to a poster presentation on Friday at 3:45 pm. Poster will be located after P#2676.**

**2160** 1:45 Effects of Antibiotics on CF-PMN Phagocytosis of *P. gingivalis* and *A. actinomycetemcomitans*. W. PFISTER\*, S.

EICK, D. FIEDLER, K. KIENEL, and E. STRAUBE (*Department of Microbiology and Department of Periodontology, University of Jena, Germany*).

**2161** 2:00 Maternal Transfer of Antigen-specific IgG Antibodies through Lactation. H.-O. ITO\*, M. HIRATA, and M. INOUE (*Department of Preventive Dentistry, Kagoshima University Dental School; and Department of Biochemistry, Kyushu University Faculty of Dentistry, Japan*).

**2162** 2:15 Optimal Induction of Reovirus-specific Mucosal Immunity by Combined Upper/Lower Respiratory Tract Inoculation. R.J. VOELKERT\*, S. CROWE, A.H. THOMPSON, L. LONDON, and S.D. LONDON (*Medical University of South Carolina, Charleston, USA*).

**2163** 2:30 The Complement Activating Properties of the Insoluble Ingredients of Dentifrices. M.M. MILLS\*, J. VESELY, and R.J. BOACKLE (*Division of Oral Biology, Medical University of South Carolina, Charleston, USA*).

**2164** 2:45 IgA1, CRP, and the Classic Complement Pathway. R.J. BOACKLE\*, J. VESELY, A. AGRAWAL, G.B. WIGGINS, K. CHINTALACHARUVU, and S.L. MORRISON (*Oral Biology, Medical University of South Carolina, Charleston; and Microbiology and Molecular Genetics, UCLA, Los Angeles, USA*).

**2165** 3:00 HIV-related Oral Lesions: Prevalence, CD4+ Cell Count, and Viral Load. V. MARGIOTTA, G. CAMPISI\*, and L. DI ALBERTI (*School of Dentistry, University of Palermo; and School of Dentistry, University of Chieti, Italy*).

**2166** 3:15 Orofacial Granulomatosis with Unusual Pseudolymphomatous Changes: A Case Report. F. FACCHETTI\*, A. MAJORANA, L. IMBERTI, A.M. MANGANONI, and A. SCALA (*Department of Pathology, School of Dentistry, Department of Biotechnology, and Department of Dermatology, University of Brescia, Italy*).

3:30 Discussion

**Seq#: 223** **Friday, March 12, 1:45 pm - 3:45 pm**  
**Oral Session, Ballroom C**

### **Mineralized Tissue - Bone: Matrix & Mineral**

**Chairpersons: A. Boskey and A. Nanci**

**2167** 1:45 Stimulation of Rat Osteopontin by 1,25(OH)<sub>2</sub>D<sub>3</sub> Involves Multiple Transcription Factors. A.L. RIDALL\*, C. BÈGUE-KIRN, E.L. CADENA, and W.T. BUTLER (*Dental Branch, University of Texas Health Science Center at Houston, USA*).

**2168** 2:00 Homotypic Protein Interactions after Covalent Immobilization of Osteopontin. J.M. LABROSSE\*, H.L. GOLDSMITH, F.A. McINTOSH, S. ASHKAR, and M.D. McKEE (*Université de Montréal; Montreal General Hospital; McGill University, Montreal, QC, Canada; and The Children's Hospital and Harvard University, Boston, MA, USA*).

**2169** 2:15 Mineral Changes in Bone of Osteopontin Knockout Mice. A.L. BOSKEY\*, L. LIAW, and M.D. McKEE (*Hospital for Special Surgery, New York, NY; Maine Medical Center Research Institute, South Portland, ME, USA; and McGill University, Montreal, QC, Canada*).

**2170** 2:30 Adsorption of Circulating Bone Matrix Proteins on Hydroxyapatite Particles in the Human. C. MANGANO, A. PIATTELLI, R. MARTINETTI, and A. NANCI\* (*University "G. D'Annunzio", Chieti, and Fin-Ceramica Faenza s.r.l., Italy; and Université de Montréal, QC, Canada*).

**2171** 2:45 Comparison of Bone and Dentin Material in the *oim/oim* Mouse. N.P. CAMACHO\*, A. BAECHTOLD, J.T. WRIGHT, and A.L. BOSKEY (*Hospital for Special Surgery, New York, NY; and University of North Carolina, Chapel Hill, USA*).

**2172** 3:00 Osteoblast Architecture and Type I Collagen Expression. P. THUNYAKITPISAL\*, M. ALVAREZ, and J.P. BIDWELL (*School of Dentistry, Indiana University, Indianapolis, USA*).

**2173** 3:15 Nucleation of Hydroxyapatite by Full-length Recombinant Bone Sialoprotein. K.J. WARNER\*, D.M. CURRIE, K.R. RATTRAY, T.M. UNDERHILL, G.K. HUNTER, and H.A. GOLDBERG (*School of Dentistry and Department of Biochemistry, University of Western Ontario, London, Canada*).

**2174** 3:30 Matrix-mediated Mineralization of Bone. M.S. POITRAS\*, H.A. GOLDBERG, M.D. GRYNPAS, and G.K. HUNTER (*School of Dentistry, University of Western Ontario, London; and Mount Sinai Hospital, Toronto, ON, Canada*).

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**Seq#: 224** **Friday, March 12, 1:45 pm - 3:45 pm**  
**Oral Session, Room 17**

**Neuroscience/TMJ - Sensory and Motor Functions: Human Studies**

**Chairpersons: K. Hiimae and D. van Steenberghe**

**2175** 1:45 Perception through Oral Osseointegrated Implants Demonstrated by Somatosensory Evoked Potentials. K. VAN LOVEN, R. JACOBS, and D. VAN STEENBERGHE\* (*Laboratory of Oral Physiology, Department of Periodontology, Catholic University of Leuven, Belgium*).

**2176** 2:00 Perceptual and Physiologic Effects of Histamine Challenge on Nasal Breathing. A. LANE, D.W. WARREN\*, and A.F. DRAKE (*Craniofacial Center, University of North Carolina, Chapel Hill, USA*).

**2177** 2:15 Corticomotor Map of the Human Masseter: Effect of Motor Task. A.S. McMILLAN\* and C. WATSON (*University of Hong Kong; and University of Newcastle upon Tyne, UK*).

**2178** 2:30 Talking and Eating: How the Hyoid Complex Accommodates Both Activities. K.M. HIIEMAE\*, J.B. PALMER, S.W. MEDICIS, B.S. JACKSON, and J. HEGENER (*Institute for Sensory Research, Syracuse University, NY; and Physical Medicine and Rehabilitation, Johns Hopkins University, Baltimore, MD, USA*).

**2179** 2:45 How Mastication Affects Respiration. T. ARVAS\*, K.M. HIIEMAE, J.B. PALMER, and L. MIOCHE (*Syracuse University, NY; Johns Hopkins University, Baltimore, MD; and INRA, Clermont-Ferrand, France*).

**2180** 3:00 The Functional Geometry of the Linkage between Mandible and Hyoid in Man. S.W. MEDICIS\*, J.B. PALMER, and K.M. HIIEMAE (*Bioengineering and Neuroscience, Syracuse University, NY; and Physical Medicine and Rehabilitation, Johns Hopkins University, Baltimore, MD, USA*).

**2181** 3:15 The Effect of Jaw Biomechanics and Muscle Volume on Biting Performance. Y.Y. SHIAU\*, C.C. PENG, and C.W. HSU (*School of Dentistry, National Taiwan University, Taipei, ROC*).

3:30 Discussion

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**Seq#: 225** **Friday, March 12, 1:45 pm - 3:45 pm**  
**Oral Session, Room 7**

**Oral & Maxillofacial Surgery - Oral-Facial Injury - Behavioral Aspects**

**Chairpersons: J. Shepherd and R. Leathers**

**2182** 1:45 Psychological Sequelae of Maxillofacial Trauma. J.P. SHEPHERD\*, J.I. BISSON, and M. DHUTIA (*Departments of Oral and Maxillofacial Surgery and Psychological Medicine, UWCM, Cardiff, UK*).

**2183** 2:00 Randomized Trial of an Alcohol Intervention to Prevent Injury. A. SMITH\*, J.P. SHEPHERD, and R. HODGSON (*Departments of Oral Surgery & Applied Public Health Medicine, UWCM, Cardiff, UK*).

**2184** 2:15 Effect of Closed-circuit Television on Urban Violence. V. SIVARAJASINGAM\* and J.P. SHEPHERD (*Department of Oral Surgery, Medicine and Pathology, UWCM, Cardiff, UK*).

**2185** 2:30 Risk Factors for Recurrent Injury among Orofacial Injury Patients. K.A. ELLIOTT BROWN, V. SHETTY, T. BELIN, R. LEATHERS\*, and K. ATCHISON (*Neuropsychiatric Institute, School of Dentistry, UCLA; and Charles Drew University, Los Angeles, CA, USA*).

**2186** 2:45 Social Support, Compliance, and Recovery among Orofacial Injury Victims. K.A. ELLIOTT BROWN\*, V. SHETTY, T. BELIN, E. BLACK, and K. ATCHISON (*Neuropsychiatric Institute, School of Dentistry, UCLA; and King/Drew Medical Center, Los Angeles, CA, USA*).

**2187** 3:00 Mental Health Needs of Inner-city, Orofacial Injury Patients. J.R. ASARNOW\*, S.M. GLYNN, R. ASARNOW, V. SHETTY, R. LEATHERS, T. BELIN, and P. JUAREZ (*Neuropsychiatric Institute, School of Dentistry, UCLA; and Charles Drew University, Los Angeles, CA, USA*).

**2188** 3:15 Orofacial Injury and Development of Acute PTSD. S.M. GLYNN, J.R. ASARNOW, R. ASARNOW, V. SHETTY, E. BLACK\*, and D. FORNEY (*Neuropsychiatric Institute, School of Dentistry, UCLA; and Charles Drew University, Los Angeles, CA, USA*).

**2189** 3:30 Substance Abuse and Compliance in Patients with Mandible Fractures. V.J. PERCIACCANTE\*, T.B. DODSON, E.J. MILLER, and R.C. MANUS (*Division of Oral and Maxillofacial Surgery, Emory University School of Medicine, Atlanta, GA, USA*).

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**Seq#: 226** **Friday, March 12, 1:45 pm - 3:45 pm**  
**Oral Session, Room 11**

**Periodontal Research - Pathogenesis - Systemic Diseases; Smoking**

**Chairpersons: S. Offenbacher and M. Ryan**

**2190** 1:45 Periodontal Status of Cardiovascular Disease Subjects. S. OFFENBACHER\*, J.D. BECK, J.R. ELTER, J.H. SOUTHERLAND, and C.M.E. CHAMPAGNE (*University of North Carolina Center for Oral and Systemic Diseases, Chapel Hill, USA*).

**2191** 2:00 Elevated Human Fetal IgM Suggests *in utero* Exposure to Periodontal Pathogens. S. OFFENBACHER, P.N. MADIANOS\*, M. SUTTLE, J.D. BECK, S. WELLS, S. LIEFF, H.L. JARED, A.P. MURTHA, K.A. BOGGESS, E.G. LIVINGSTON, and W.N.P. HERBERT (*Center for Oral and Systemic Diseases, University of North Carolina, Chapel Hill; and Duke University, Durham, NC, USA*).

**2192** 2:15 Acute-phase Inflammatory Response to Oral and Systemic Conditions. G.D. SLADE, J.S. PANKOW\*, S. OFFENBACHER, J.D. BECK, and G. HEISS (*University of North Carolina, Chapel Hill, USA*).

**2193** 2:30 Host Response in Diabetes-associated Periodontitis: Effects of a Tetracycline Analogue. M.E. RYAN\*, N.S. RAMAMURTHY, A. AMIN, D. HUSUH, T. SORSA, and L.M. GOLUB (*State University of New York, Stony Brook; New York University, USA; and University of Helsinki, Finland*).

**2194** 2:45 Tetracycline Fibers and Nifedipine-induced Gingival Overgrowth. D. SAKELLARI\*, E. ARISTODIMOU, I. VOUIROS, T. HATZIPANTELIS, and A. KONSTANTINIDIS (*Department of Periodontology, University of Thessaloniki, Greece*).

**2195** 3:00 Periodontal Disease Progression in Patients with Cleft Lip, Alveolus, and Palate without Supportive Periodontal Therapy. G.E. SALVI\*, U. BRAEGGER, T. VON WYTTENBACH, E. SCHUERCH, Jr., and N.P. LANG (*University of Berne, Switzerland*).

**2196** 3:15 Influence of Smoking on Inflammatory Signs and Neutrophil Vitality in Periodontitis Sites. T.F. WALSH\*, M. DELL'ATTI, and G. NICOLETTI (*University of Sheffield, UK; and Universities of Bari and Napoli, Italy*).

**2197** 3:30 Nerve Block Inhibits the Acute Gingival Vascular Effect of Snuff. A. MAVROPOULOS\*, H. AARS, and P. BRODIN (*Departments of Periodontology and Oral Biology, University of Oslo, Norway*).

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**Seq#: 227** **Friday, March 12, 1:45 pm - 3:45 pm**  
**Oral Session, Room 1**

**Periodontal Research – Pathogenesis - Cytokines; Adhesion Molecules**

**Chairpersons: D. Kinane and R. Niederman**

**2198** 1:45 IL-10 Regulates the Cytokine Response of Oral Epithelial Cells to *P. gingivalis*. D.F. LAPPIN and D.F. KINANE\* (*University of Glasgow, UK*).

**2199** 2:00 Suppression of IL-10 Release from Human PDL Cells by IL-1b. J. DESCHNER\*, B. ARNOLD, A. KAGE, B. ZIMMERMANN, V. KANITZ, and J.-P. BERNIMOULIN (*Department of Periodontology and Institute of Chemistry and Biochemistry, Charité, Humboldt University, Berlin; and Institute of Anatomy and Institute of Clinical Pharmacology and Toxicology, Free University, Berlin, Germany*).

**2200** 2:15 Regulation of ICAM-1 Expression in Interleukin-1b -stimulated Fibroblasts by Prostaglandins. K. NOGUCHI\*, K. IWASAKI, and I. ISHIKAWA (*Department of Periodontology, Tokyo Medical and Dental University, Japan*).

**2201** 2:30 Interleukin-1b Regulation of ICAM-1 on Human Osteoblasts. J.P. LESTER, S.H. STEIN\*, P.A. WARREN, and J.M. MAILHOT (*Department of Periodontology, College of Dentistry, University of Tennessee, Memphis, USA*).

**2202** 2:45 Effects of Interleukin-4 on Proteoglycan Accumulations in Human Gingival Fibroblasts. M. HASHIMOTO-UOSHIMA\*, K. NOGUCHI, A. MURATA, M. SUZUKI, M. YANAGISHITA, and I. ISHIKAWA (*Tokyo Medical and Dental University, Japan*).

**2203** 3:00 Naturally Occurring Progressive Alveolar Bone Loss in P/E-selectin-deficient Mice. R. NIEDERMAN\*, T. WESTERNOFF, C. LEE, N. KAWASHIMA, M. ULLAM, M. FERES, S.S. SOCRANSKY, D. WAGNER, R.O. HYNES, and P.

STASHENKO (*Forsyth Dental Center, Harvard School of Dental Medicine, Harvard Medical School; and Massachusetts Institute of Technology, Boston and Cambridge, USA*).

**2204** 3:15 Regulation of Gingival Lysyl Oxidase, Collagen, and CTGF by TGF-b *in vitro*, and Detection *in vivo*. M.I. UZEL\*, H.-H. HONG, C. DUAN, M.C. SHEFF, and P.C. TRACKMAN (*Division of Oral Biology, Boston University Goldman School of Dental Medicine, MA, USA*).

**2205** 3:30 IL-1 Genotypes in European Caucasians with Generalized Early Onset Periodontitis. P.J. HODGE\*, M.P. RIGGIO, and D.F. KINANE (*Dental School, University of Glasgow, UK*).

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**Seq#: 228** **Friday, March 12, 1:45 pm - 3:45 pm**  
**Oral Session, Room 8**

**Periodontal Research – Therapy - GTR in Intrabony and Furcation Defects**

**Chairperson: R. Yukna**

**2206** 1:45 Clinical Evaluation of Combined Regenerative Techniques in Human Furcation Defects. R.B. SANTANA\*, H. GUSMAN, and T.E. VAN DYKE (*Department of Periodontology and Oral Biology, School of Dental Medicine, Boston University, MA, USA*).

**2207** 2:00 PerioGlas™ Compared with GoreTex™ Barrier in Human Mandibular Grade II Furcations. R.A. YUKNA, M.E. AICHELMANN-REIDY, G.H. EVANS\*, and E.T. MAYER (*Louisiana State University School of Dentistry, New Orleans, USA*).

**2208** 2:15 Radiographic Defect Angle Influences the Outcomes of GTR Therapy in Intrabony Defects. P. CORTELLINI\* and M.S. TONETTI (*School of Dental Medicine, University of Bern, Switzerland*).

**2209** 2:30 Intrabony Defect Treatment with Guided Tissue Regeneration Using Different Membranes. M.D. ZYBUTZ, L. LAURELL, D.A. RAPOPORT\*, and G.R. PERSSON (*University of Washington, Seattle, USA*).

**2210** 2:45 Clinical Evaluation of Bioabsorbable Barriers with and without Decalcified Freeze-dried Bone. P.M. TREJO\*, R. WELTMAN, and R.G. CAFFESSE (*Department of Stomatology, Division of Periodontics, University of Texas at Houston Health Science Center, USA*).

**2211** 3:00 Effect of Guided Tissue Regeneration in Intrabony Periodontal Pockets with Autogenous Bone Graft and a Bioabsorbable Barrier Membrane. P. NYGAARD-ØSTBY\*, V. BAKKE, O. NESDAL, H.K. NILSSEN, and T.J. SIGURDSSON (*Private Practice, Oslo, Norway; and Loma Linda University, CA, USA*).

**2212** 3:15 Decalcified and Non-decalcified Freeze-dried Bone Allografts in Rhesus Monkeys. R.A. YUKNA\* (*Louisiana State University School of Dentistry, New Orleans, USA*).

**2213** 3:30 Effects of Occlusal Loading during BMP-2-stimulated Periodontal Regeneration *in vivo*. G.N. KING\* and F.J. HUGHES (*Department of Periodontology, St. Bartholomew's; and the Royal London School of Medicine and Dentistry, University of London, UK*).

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**Seq#: 229** **Friday, March 12, 1:45 pm - 3:45 pm**  
**Poster Discussion Session, Room 10**

**Prosthodontics - Color Research/Fiber-reinforced Composites**

**Chairpersons: W. Yow and W. O'Brien**

- 1:45 Poster Viewing Time
- 2214** 2:15 Coverage Error of a New Three-dimensional Shade Guide. K.M. BOENKE\* and W.J. O'BRIEN (*University of Michigan School of Dentistry, Ann Arbor, USA*).
- 2215** 2:23 Photocolorimetry Using the Spectral Color Transformation Method. W.J. O'BRIEN\*, C.L. GROH, and E. TASHKANDI (*School of Dentistry, University of Michigan, Ann Arbor, USA*).
- 2216** 2:31 Photocolorimetry: A Method for Matching the Color of Teeth. C.L. GROH\*, W.J. O'BRIEN, and H.P. O'KRAY (*School of Dentistry, University of Michigan, Ann Arbor, USA*).
- 2217** 2:39 Color Stability of Three Restorative Materials. A.N. GRIEGO\*, P. YAMAN, M.E. RAZZOOG, and J.B. DENNISON (*University of Michigan, Ann Arbor, USA*).
- 2218** 2:47 Clinical Evaluation of Fiber-reinforced Fixed Partial Dentures: Preliminary Data. M.A. FREILICH\*, J.P. DUNCAN, J.C. MEIERS, and A.J. GOLDBERG (*School of Dental Medicine, University of Connecticut Health Center, Farmington, USA*).
- 2219** 2:55 Marginal Adaptation of Adhesive Abutment Inlays Anchoring Four-unit Bridges. T.N. GÖHRING\*, I. KREJCI, and F. LUTZ (*Division of Cariology, Center for Dental and Oral Medicine, University of Zürich, Switzerland*).
- 2220** 3:03 Effect of Fiber Reinforcement on the Strength of Fixed Partial Dentures. C.A. MUNOZ, J. TORRES, J.R. DUNN, W. YOW\*, A. KOBASHIGAWA, and E.R. SHELLARD (*Loma Linda University, CA; Veterans Administration Hospital, Loma Linda, CA; and Kerr Corporation, Orange, CA, USA*).
- 2221** 3:11 Design Factors in Fiber-reinforced Composite Fixed Partial Dentures. S.R. DYER\* and J.A. SORENSEN (*Fixed Prosthodontics Department, School of Dentistry, Oregon Health Sciences University, Portland, USA*).
- 3:19 Poster Discussion Time

**Seq#: 230** **Friday, March 12, 1:45 pm - 3:45 pm**  
**Oral Session, Room 16**

**Salivary Research - Signal Transduction****Chairpersons: D. Culp and C.-K. Yeh**

- 2222** 1:45 Regulation of Phospholipase D Activity by Aluminumfluoride in Submandibular Gland Cells. L. LI\* and N. FLEMING (*Department of Oral Biology, University of Manitoba, Winnipeg, Canada*).
- 2223** 2:00 Protein Tyrosine Phosphorylation and PLD Activation in Submandibular Acini. N. FLEMING\* and L. MELLOW (*Department of Oral Biology, University of Manitoba, Winnipeg, Canada*).
- 2224** 2:15 Role of Calcium in Muscarinic-activated Exocrine Secretion by Mucous Salivary Acini. Z. ZHANG and D.J. CULP\* (*Center for Oral Biology, University of Rochester, NY, USA*).
- 2225** 2:30 Mechanisms Involved in Nitric Oxide Modulation of Capacitative  $Ca^{2+}$  Entry. E. WATSON\*, K. JACOBSON, J. SINGH, and S. OTT (*University of Washington, Seattle, USA*).
- 2226** 2:45 Extracellular Matrix/Growth Factor Synergy Promotes HSG Cell Acinar Differentiation. M.P. HOFFMAN\*, D.W. JUNG, and H.K. KLEINMAN (*CDBRB, NIDCR/NIH, Bethesda, MD, USA*).

- 2227** 3:00 Examination of Serotonin Receptor Subtypes Expressed in the Rat Submandibular Gland. D.M. BOURDON\*, J.M. CAMDEN, and J.T. TURNER (*University of Missouri, Columbia, USA*).
- 2228** 3:15 Epidermal Growth Factor Modulates b-Adrenergic Receptor Signaling in a Salivary Cell Line (HSY). C.-K. YEH\*, T.K. HYMER, B.-X. ZHANG, M.D. LIFSCHITZ, and M.S. KATZ (*GRECC and Research Service, Audie L. Murphy Veterans Administration Hospital, San Antonio, TX; and Departments of Dental Diagnostic Science and Medicine, University of Texas Health Science Center at San Antonio, USA*).
- 3:30 Discussion

**Seq#: 231** **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Pulp Biology - Surgical RCT, Pulp Restorative, Lasers, Apex Locators, Microbiology**

- 2229** Root Deformation during Root-end Preparation. C.P. LIN\*, H.G. CHOU, R.S. CHEN, W.H. LAN, and C.C. HSIEH (*School of Dentistry, College of Medicine, National Taiwan University, ROC*).
- 2230** Comparison of Time Required for Sonic vs. Ultrasonic Retro-cavity Preparation. J.M. COIL\*, V.S. ROSANG, E.J. WONG, N.D. RUSE, and L.M. RUCKER (*Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).
- 2231** Comparison of Micro-crack Generation during Sonic and Ultrasonic Retro-cavity Preparation. V.S. ROSANG\*, E.J. WONG, L.M. RUCKER, N.D. RUSE, and J.M. COIL (*Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).
- 2232** Cell Death Patterns in Periapical Granulomas and Cysts. C. UNGUREANU\*, A.C. JOHANNESSEN, G. ØIJORDSBAKKEN, and N. SKAUG (*School of Dentistry and Centre for International Health, University of Bergen, Norway*).
- 2233** Mononuclear Inflammatory Cells in Human Periodontal-Endodontic Lesions. J.M. DiFLORIO\*, A.W. HOLLIS, S. ANDREANA, M.E. NEIDERS, R.E. HALL, and R.E. COHEN (*Departments of Periodontology and Oral Surgery, State University of New York at Buffalo, USA*).
- 2234** Cytotoxicity of One-bottle Adhesive Systems. An *in vitro* Study. C.A.S. COSTA\*, M.A. VAERTEN, and C.T. HANKS (*School of Dentistry, University of Michigan, USA; and UNESP-Araraquara School of Dentistry, Brazil*).
- 2235** Pulp Response of KB-1300 Amalgam Alloy Bonding System in Class V Cavities. A.A. HAFEZ, B. TARIM\*, and C.F. COX (*Departments of Restorative and Biomaterials, University of Alabama at Birmingham School of Dentistry, USA; and Istanbul University, Turkey*).
- 2236** Effect of Hemin Depletion on the Protein Profiles and Virulence of *Porphyromonas endodontalis*. R.B. GONÇALVES\*, R.M.C.P. DOMINGUES, and M. UZEDA (*FOP—UNICAMP and IM/UFRJ, Brazil*).
- 2237** Clinical and Radiographic Evaluation of Pulpotomies Performed with Intrapulpal Injection of Anesthetic Solution. L.S. TEIXEIRA, F.F. DEMARCO\*, M.C. COPPOLA, and M.L.M. BONOW (*Federal University of Pelotas, School of Dentistry, Brazil*).
- 2238** Effect of Microleakage of Resin Composite Restorations on Pulp Tissue. Y. SASAFUCHI\*, M. OTSUKI, S. INOKOSHI, and J. TAGAMI (*Department of Operative Dentistry, Tokyo Medical and Dental University, Japan*).

**2239** Alkaline Properties and Antimicrobial Effect of Ca(OH)<sub>2</sub>-containing Guttapercha Points and Ca(OH)<sub>2</sub>. A.K. LUEDERS\*, V.K.E. WERNER, and W.H.-M. RAAB (Department of Operative Dentistry, Heinrich-Heine-University Duesseldorf, Germany).

**2240** Microbial Effects of Er-YAG Laser Irradiation on Infected Root Canals. B. STEPHAN\*, H. WELLINGS, and W.H.-M. RAAB (Department of Operative Dentistry, Heinrich-Heine-University Duesseldorf, Germany).

**2241** Histopathological Changes of the Apices by Nd:YAG Laser Irradiation. M. NAKAMURA\*, K. ENATSU, N. HASEGAWA, T. NOMURA, T. ARAI, and J. NAKAMURA (Department of Periodontics and Endodontics, and Department of Oral Pathology, Tsurumi University, Yokohama, Japan).

**2242** CO<sub>2</sub> Laser and Formocresol Pulpotomy Effects on Human Primary Pulp. R.D. ELLIOTT\*, E.J. BURKES, C.L. PHILLIPS, and M.W. ROBERTS (University of North Carolina, Chapel Hill, USA).

**2243** *In vivo* Evaluation of the Accuracy of Five Apex Locators. B.P. AUSTIN\*, W.A. MALIK, and H.D. WALIA (Marquette University, Milwaukee, WI; and University of Florida, Gainesville, USA).

**2244** Human Pulp Responses to Cavity Preparation with a Laser-powered Hydrokinetic System. W. CARPENTER, R. EVERSOLE\*, and J. HADLEY (University of the Pacific, San Francisco, CA, USA).

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**Seq#: 232**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Pulp Biology - Endodontics, Instrumentation, Irrigants, Medicaments, Obturation**

**2245** A New Model to Assess Root Canal Instrumentation. C.R. BARTHEL\*, S. GRUBER, and J.-F. ROULET (Department of Operative and Preventive Dentistry and Endodontics, Charité, Humboldt University, Berlin, Germany).

**2246** Comparison of Step-back and Crown-down Technique with a Mechanical Ni-Ti Prototype. S. RUETTERMANN\*, H. WELLINGS, and W.H.-M. RAAB (Department of Operative Dentistry, Heinrich-Heine-University Duesseldorf, Germany).

**2247** A Comparison of Lateral Condensation to NIT Obturation Technology. P. DENNY\*, A.A. HAFEZ, J.C. MILLS, and C.F. COX (Departments of Endodontics, Biomaterials, and Restorative, University of Alabama at Birmingham Dental School, USA).

**2248** *In vitro* Evaluation of NIT Cleaning and Obturation Technology in Non-human Primates. A.A. HAFEZ, J.C. MILLS, J. KAMBURIS\*, and C.F. COX (Departments of Endodontics, Biomaterials, and Restorative, University of Alabama at Birmingham Dental School, USA).

**2249** Acid Etching vs. Chelation of Intraradicular Dentinal Smear Layer. R.M. YOUNG\*, K. SECKLER, and S.W. WHITSON (Southern Illinois University School of Dental Medicine, Alton, USA).

**2250** EDTA Capacity of Smear Layer Removal Using Different Application Forms. L. SASSONE\*, H. UTRINI, R. FIDEL, and S. FIDEL (Universidade do Estado do Rio de Janeiro, Brazil).

**2251** A Qualitative Study of Filled Root Canals Using Vacuum Obturation. J.C. MILLS\*, A.A. HAFEZ, P. DENNY, and C.F. COX (Departments of Endodontics, Biomaterials, and

Restorative, University of Alabama at Birmingham School of Dentistry, USA).

**2252** Enhancement of Apical Delta Debridement by Ultrasonic Activation of Irrigant. H.D. WALIA\*, N. GILL, and B.P. AUSTIN (University of Florida, Gainesville; and Marquette University, Milwaukee, WI, USA).

**2253** *In vitro* Disinfection of Human Dentinal Tubules. R.A. BUCK\*, P.D. ELEAZER, and R.H. STAAT (University of Louisville, KY, USA).

**2254** Use of the Ca(OH)<sub>2</sub> in the Treatment of Chronic Periapical Lesions. I.C.B. MORATO\* (Department of Biochemistry and Immunology, Institute of Biological Sciences of UFMG, Belo Horizonte, MG, Brazil).

**2255** Irritating Potential of Some Drugs Used as Root Canal Irrigants. S.M.G. SOUSA\*, E.M. TAGA, and C.M. BRAMANTE (Bauru Dental School, University of São Paulo, Brazil).

**2256** Setting Times for Endodontic Sealers under Clinical Usage Conditions. N. ALLAN\*, M. SCHAFFER, G. ROUND, and R. WALTON (College of Dentistry, University of Iowa, Iowa City, USA).

**2257** Apical Sealability of GI Sealer with Two Obturation Techniques. S. TIMPAWAT\* and N. VONGSAVAN (Department of Operative Dentistry and Physiology and Biochemistry, Faculty of Dentistry, Mahidol University, Bangkok, Thailand).

**2258** Endodontic Plugger Temperature Rise when Activated by Two Heat Sources. P.J. LUMLEY\* and E. HARRINGTON (School of Dentistry, University of Birmingham, UK).

**2259** SEM Evaluation of Retreatment Techniques with and without Solvent Use. G. ALVARES\*, S. FIDEL, and R. FIDEL (Universidade do Estado do Rio de Janeiro, Brazil).

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**Seq#: 233**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Microleakage/Endodontic Posts/Amalgam Bonding**

**2260** Effects of Lateral Forces on Microleakage in Cervical Resin Restorations. T.J. FRUITS, C.L. VanBRUNT\*, S.S. KHAJOTIA, and M.G. DUNCANSON, Jr. (University of Oklahoma College of Dentistry, Oklahoma City, USA).

**2261** Microleakage in Amalgam Restorations Using Three Dentin Adhesives. E. OSORIO, M. TOLEDANO, R. OSORIO, F. FORNIELES\*, and F. GARCÍA-GODOY (University of Granada, Spain; and UTHSC San Antonio, TX, USA).

**2262** Microleakage of Composite Resin Restorations. R.M. GAGLIARDI\*, L.M. DE PAULA, and R.P. AVELAR (University of Brasília, Brazil).

**2263** The Effects of Composite Resin, Adhesive System, and Low-viscosity Liner on Microleakage. C. FRANCCI, J. PERDIGÃO, P.E.C. CARDOSO\*, J.B.C. MEIRA, and M.F. NUNES (University of São Paulo, Brazil; and University of North Carolina, Chapel Hill, USA).

**2264** Microleakage of Class V Composite Restorations Using Five Simplified Adhesives. P.E.C. CARDOSO, E. PLACIDO\*, C. FRANCCI, and J. PERDIGÃO (University of São Paulo, Brazil; and University of North Carolina, Chapel Hill, USA).

**2265** Thermostressed Microleakage of Hybridized Class II Esthetic Dental Restorations. S. MOLDOVAN\*, P. MONAGHAN, and R. SEGHI (College of Dentistry, Ohio State University, Columbus, USA).

- 2266** Should Flowable Composites Be Used as Liners for Class II Restorations? R.R. RUSSELL\* and R.B. MAZER (*School of Dentistry, University of Alabama, Birmingham, USA*).
- 2267** An *in vitro* Evaluation of Microleakage and Polymerization Degree of Composite Resins. P.E.C. CARDOSO and J.B.C. MEIRA\* (*FOUSP, São Paulo, Brazil*).
- 2268** The Performance of an Adhesively Luted Carbon Post after Thermocycling. F. MACCARONI\*, M. ANDREASI BASSI, G. GORACCI, P. UBERTI, and R. BEDINI (*Department of Operative Dentistry, University of Rome "La Sapienza"; and Biomedical Engineering Laboratory, Superior Health Institute of Rome, Italy*).
- 2269** Initial Failure of Post/Core Systems under Compressive-shear Loads. E.J. WONG\*, N.D. RUSE, R.S. GREENFELD, and J.M. COIL (*University of British Columbia, Vancouver, Canada*).
- 2270** Carbon and Silicon Fiber Posts: Core Retention and SEM Evaluation. L. BOSCHIAN\*, A. FELLONI, and M. GAGLIANI (*Department of Restorative Dentistry, First Science Biomed., University of Milan, Italy*).
- 2271** Effect of Eugenol-containing Endodontic Sealer on Retention of Posts. E.M.A. RUSSO\*, E. RUSSO, R.C.R. CARVALHO, M.G. SANTOS, and S.R.M. BRAGA (*School of Dentistry, University of São Paulo, Brazil*).
- 2272** Bonding of a Gallium Alloy to Human Enamel. J. CLAIRE and P.T. WILLIAMS\* (*University of Manitoba, Winnipeg, Canada*).
- 2273** Effect of Bonded Amalgam Restoration on the Fracture Resistance of Human Premolars. C.N. PEGORARO\* and J. MONDELLI (*Department of Operative Dentistry, Bauru Dental School, University of São Paulo, Brazil*).
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- Seq#: 234** **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**
- Dental Materials - Clinical Trials**
- 2274** Comparison of Failures of Adhesive Fixed Partial Dentures in *in vivo* and *in vitro* Studies. U. HINDELANG\*, M. BEHR, M. ROSENTRITT, R. LANG, and G. HANDEL (*University of Regensburg, Germany*).
- 2275** Clinical Performance of Bonded Amalgam Restorations at Forty-two Months. W.W. JOHNSON\*, W.D. BROWNING, and P.N. GREGORY (*Mankato State University, MN; Medical College of Georgia, Augusta; and University of Tennessee, Memphis, USA*).
- 2276** Clinical Effectiveness of Bonded Amalgam Restorations for Cracked Tooth Syndrome. R. ZAJÍA\*, P. YAMAN, J.B. DENNISON, W.C. WAGNER, and G.W. TAYLOR (*School of Dentistry, University of Michigan, Ann Arbor, USA*).
- 2277** Evaluation of Four Adhesive Protocols for Orthodontic Bonding. A.J. TRINGAS\*, W.G. DE RIJK, E.A. BEGOLE, J. WANG, and C.A. EVANS (*College of Dentistry, University of Illinois at Chicago, USA*).
- 2278** *In vivo* Bonding of Homograft Tooth Fragments. A. DELLA BONA\* and N. BOSCATO (*Dental Biomaterials, University of Florida, Gainesville, USA; and Dental Research Group, University of Passo Fundo, RS, Brazil*).
- 2279** 3-year Clinical Evaluation of Acetone-based VLC Dentin Bonding System. J.R. STURDEVANT\*, S.C. BAYNE, H.O. HEYMANN, A.D. WILDER, Jr., and T.M. ROBERSON (*School of Dentistry, University of North Carolina, Chapel Hill, USA*).
- 2280** Retention of Dual-cure Sealant with Bonding Primer. J.M. SOH\*, I.C. PUNWANI, R.J. DOOLEY, and C.Y. HA (*Department of Pediatric Dentistry, University of Illinois at Chicago, USA*).
- 2281** Sealant Retention Rates: One Year Following Placement by Dental Students. M.C. BEATTIE\* and M.J. KANELLIS (*University of Iowa, Iowa City, USA*).
- 2282** Evaluation of High Viscous GIC Restorations in Classes I and II Cavities after 6 Months—A Clinical Study. K. SALZMANN\*, A. MEHL, and R. HICKEL (*Department of Operative Dentistry, Ludwig-Maximilians-University of Munich, Germany*).
- 2283** Clinical Performance of Two Compomer Materials—Six Months' Follow-up. E. KONTOU\*, R. FRANKENBERGER, S. KLINGE, and N. KRÄMER (*Policlinic of Operative Dentistry and Periodontology, University of Erlangen, Germany*).
- 2284** Model Analysis of Viscous Glass-ionomer Cement in Classes I and II Cavities. K. KUNSTMANN\*, S. KLINGE, R. FRANKENBERGER, and N. KRÄMER (*Policlinic of Operative Dentistry and Periodontology, University of Erlangen, Germany*).
- 2285** Clinical Behavior of Viscous Glass-ionomer Cement in Classes I and II Cavities. S. KLINGE\*, K. KUNSTMANN, R. FRANKENBERGER, and N. KRÄMER (*Policlinic of Operative Dentistry and Periodontology, University of Erlangen, Germany*).
- 2286** Marginal Adaptation of Class II Compomer Restorations *in vivo*. S. KERSTEN\*, M.J. BESEK, and F. LUTZ (*Preventive Dental Medicine, Periodontology and Cariology, Zürich University, Switzerland*).
- 2287** Clinical Investigations of the Hytac Aplitip Compomer in Class III Cavities. J.W.V. van DIJKEN and R. RICHTER\* (*Institute of Oral Biology, Dental School Umeå, Sweden; and ESPE, Seefeld, Germany*).
- 2288** One-year Evaluation of F2000 Restorations Placed in General Dental Practice. R.J. CRISP\* and F.J.T. BURKE (*University of Glasgow Dental School, Scotland, UK*).
- 2289** ART for Use in Restorations in Primary Dentition in China: Evaluation after One Year. D. HU\*, X. LI, G. TONG, H. WAN, and X. FAN (*College of Stomatology, WCUMS, Chengdu, China*).
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- Seq#: 235** **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**
- Dental Materials - Composite Bond Strength: Hybrid Layer, Laser Treatment, Miscellaneous**
- 2290** Bond Strengths of Acetone-based One-bottle Adhesives. K. PFLUG\*, G. GOMES, J. PERDIGÃO, and E.J. SWIFT, Jr. (*Dentsply DeTrey, Konstanz, Germany; Private Practice, Lisbon, Portugal; and University of North Carolina, Chapel Hill, USA*).
- 2291** Adhesive Characteristics of a New Bonding System, "KBN". K. NAKATSUKA\* and K. ARIKAWA (*Kuraray Company, Ltd., Kurashiki, Okayama, Japan*).
- 2292** Bond Strength of One-component Adhesives for Compomers and Composites. W. WEINMANN\*, R. MAY, and J.M. POWERS (*Houston Biomaterials Research Center, TX, USA; and ESPE Dental AG, Seefeld, Germany*).
- 2293** Laboratory Evaluation of the KBN Adhesive System. M.A. LATTA, R.M. PITRUZZELLO, M.N. KELSEY\*, and W.W. BARKMEIER (*Creighton University School of Dentistry, Omaha, NE, USA*).



**2294** The Effects of Conditioner, Adhesive, and Restorative Material on Shear Bond Strengths. B.T. ROSA\*, J. PERDIGÃO, and M.F. NUNES (*Department of Operative Dentistry, University of North Carolina at Chapel Hill, USA*).

**2295** Ultrastructural Study of Rabbit Pulp Tissue with STHL *in vivo*. T. INOUE\*, Y. MOROHOSHI, S. MIYAKOSHI, and M. SHIMONO (*Department of Pathology, Tokyo Dental College, Chiba, Japan*).

**2296** FE-SEM Observation of the Resin-Dentin Interface Using Different Dentinal Substrates. G. MORI\*, M. BAZZUCCHI, and G. GORACCI (*Department of Operative Dentistry, University of Rome "La Sapienza", Italy*).

**2297** Shear Bond Strengths and SEM Studies of Last Generation Dentin Bonding Agents. M.C. CHAIN\*, S. AUST, and R. HELENO (*Federal University of Santa Catarina, Brazil, CNPq/CAPEs*).

**2298** SEM Observation and Tensile Bond Strength of Resin Adhesives to Dentin Irradiated by Er:YAG Laser. M. TAKAMIZU\*, K. ISHIMARU, N. MATSUZAWA, and A. KOHNO (*Tsurumi University, School of Dental Medicine, Yokohama, Japan*).

**2299** Effects of Er:YAG Laser on Enamel and Dentin Microleakage. R.J. BLANKENAU, K.D. MOSES\*, M.L. CHERUBINI, and M.A. LATTA (*Creighton University School of Dentistry, Omaha, NE, USA*).

**2300** Shear Bond Strength of Composite Resin to Enamel Conditioned by Er:YAG Laser. L.A. DOMINGUES\*, M.C. VERONEZI, C.N. PEGORARO, D.B. LEGRAMANDI, C.E. FRANCISCHONE, and A.C.B. RAMOS (*University of Sagrado Coração, Bauru, Brazil*).

**Seq#: 236** **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

### **Dental Materials - Composite Properties – Environmental Effects**

**2301** Microhardness of Flowable Resin Composite Materials. A.G. JONES\*, A.M. DIAZ-ARNOLD, and M.R. BOUSCHLICHER (*University of Iowa, Iowa City, USA*).

**2302** Fatigue of a Composite—Influence of Curing and Storage Time. W. KRELL\*, A. GRAF, and A. PETSCHL (*Polyclinic for Operative Dentistry, University of Erlangen-Nuremberg, Germany*).

**2303** Secondary Curing of Composite Resins: Comparison of Laser Treatment with Other Methods. J.S. COVINGTON, M.A. WOODS\*, and H.D. HOBBS (*Memphis Center for the Health Sciences, University of Tennessee, USA*).

**2304** Direct Tensile Strength of Visible-light-cured Restorative Materials Containing Fluoride. M. HOTTA\*, S. KAWANO, and I. SEKINE (*School of Dentistry, Asahi University, Gifu, Japan*).

**2305** Flexural Strength of Fiber-reinforced Bars after Different Types of Loading. M. BEHR\*, M. ROSENTRITT, R. LANG, and G. HANDEL (*University of Regensburg, Germany*).

**2306** Modulus of Elasticity Evaluation of Selected Restorative Materials. R. OSORIO, M. TOLEDANO, M. BARRANQUERO\*, J.I. ROSALES, F. DE LA TORRE, and F. GARCÍA-GODOY (*University of Granada and University of País Vasco, Spain; and UTHSC San Antonio, TX, USA*).

**2307** Hardness Evaluation of Selected Restorative Materials. M. TOLEDANO, R. OSORIO, J. GOIRIENA\*, F. TORRE, J.I. ROSALES, and F. GARCÍA-GODOY (*University of Granada*

*and University of País Vasco, Spain; and UTHSC San Antonio, TX, USA*).

**2308** Strength Loss Associated with Hydrolytic Degradation of Commercial Composite Resins. N.K. SARKAR, G. IAZZETTI, R. MOISEYEVA\*, and S.L. CHEUK (*LSU School of Dentistry, New Orleans, LA, USA*).

**2309** Thermal Effect on Flexural Strength of Laboratory-processed Composite Resin. F. KAWANO\*, T. OHGURI, and T. ICHIKAWA (*School of Dentistry, Tokushima University, Japan*).

**2310** Superficial Hardness of Polyglass (Art Glass) Using Acid Solutions. R. ESTREMADOYRO\*, M.A. SARAIVA, and J.M. POWERS (*Universidad Peruana Cayetano Heredia, Lima—Perú; and Houston Biomaterials Research Center, TX, USA*).

**2311** Effect of Storage on Indentation Creep of Compomer. T. MAEDA\*, T. EGURO, K. TAKAHASHI, and H. TANAKA (*Department of Operative Dentistry and Preventive Dentistry, Nippon Dental University, Tokyo, Japan*).

**2312** Effect of Storage Media on Surface Microhardness of Three Compomers. W. GEURTSSEN\*, J. MUNACK, G. LEYHAUSEN, and F. GARCÍA-GODOY (*Medical University Hannover, Germany; and University of Texas at San Antonio, USA*).

**2313** Influence of Temperature on the Self-curing Behavior of Luting Composites. R. HECHT\* and K.-P. STEFAN (*ESPE Dental AG, Seefeld, Germany*).

**2314** Effects of Mouthrinses on the Hardness of Esthetic Restorative Materials. K.B. FRAZIER\*, J.C. WATAHA, and P.E. LOCKWOOD (*Medical College of Georgia, Augusta, USA*).

**Seq#: 237** **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

### **Dental Materials - Dental Composites – Curing Effects**

**2315** Comparison of Curing Efficiency: Disposable Curing Tips vs. Standard Tips. K.N. VO\*, R.D. DAVIS, and P. OSBORNE (*Keesler Medical Center, Keesler AFB, MS, USA*).

**2316** Effects of Laser and Plasma Arc Curing Lights on Resin Brittleness. T.M. PALMER\*, B.J. PLOEGER, K.C. NELSON, J.B. ERICKSON, and R.P. CHRISTENSEN (*Clinical Research Associates, Provo, UT, USA*).

**2317** Temperature Rise as a Function of Curing Light Type, Curing Mode, Tooth Thickness, and Composite Type. V.A. MARKER\* and R.T. FIELDS (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**2318** The Efficiency of Different Light Sources for Composite Curing. A. MENIGA\*, A. KNEZEVIC, Z. TARLE, J. SUTALO, and G. PICHLER (*School of Dental Medicine and Institute of Physics, University of Zagreb, Croatia*).

**2319** Polymerization Kinetics of Composites Cured by Low-intensity Blue Superbright LED's. Z. TARLE\*, A. KNEZEVIC, A. MENIGA, J. SUTALO, and G. PICHLER (*School of Dental Medicine and Institute of Physics, University of Zagreb, Croatia*).

**2320** The Effect on Microstrain in a Composite of Time Interval in a Two-step Curing Procedure. Y. WANG\* and B.I. SUH (*Bisco Inc., Schaumburg, IL, USA*).

**2321** Composite Depth of Cure Using 3 Curing Modes, Standard, Medium, and Exponential. J.R. DUNN\*, C.A. MUNOZ, J. SY-MUNOZ, and N. JESSOP (*Loma Linda University, CA, USA*).

**2322** Effect of Ramped/Stepped Light Intensity on Polymerization Shrinkage Forces. M.R. BOUSCHLICHER\*, D.B.

BOYER, and F.A. RUEGGEBERG (*University of Iowa College of Dentistry, Iowa City; and Medical College of Georgia, Augusta, USA*).

**2323** Effects of Various Curing Systems on Composite Resin Shrinkage. M. HADECHNY\*, J.B. DENNISON, P. YAMAN, J.C. HAMILTON, and R.J. FEIGAL (*School of Dentistry, University of Michigan, Ann Arbor, USA*).

**2324** The Influence of the Quality of Light-curing Units on Composite Resin Staining. M.C. VERONEZI\*, L.A. DOMINGUES, M. ALEM, and L.F.M. MAZIERO (*Dentistry Department, University of the Sacred Heart of Bauru, Brazil*).

**2325** Real-time Conversion and Cure Rate of a Stepped Curing Source. F.A. RUEGGEBERG\*, W.F. CAUGHMAN, and D.C.N. CHAN (*Department of Oral Rehabilitation, MCG School of Dentistry, Augusta, GA, USA*).

**2326** Light Intensity, Exposure Time, and Shade Effects on Composite Hardness. S.K. PEREIRA\*, C.L.A. PORTO, and A.L. RODRIGUES, Jr. (*School of Dentistry, University of Araraquara, São Paulo, Brazil*).

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**Seq#: 238**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Dental Materials - Orthodontics & Endodontics**

**2327** Bonding Orthodontic Brackets to Porcelain with a Resin-reinforced Glass Ionomer. I. KOJIMA\*, A. KOMORI, and H. ISHIKAWA (*Department of Orthodontics, Nippon Dental University, Tokyo, Japan*).

**2328** *In vitro* Assessment of Second-order Clearances between Stainless Steel Archwire-Bracket Couples. J.J. CHUN\* and R.P. KUSY (*Dental Research Center and Orthodontics Department, University of North Carolina, Chapel Hill, USA*).

**2329** The Nickel Ion Released from the Recycled Metal Bracket. C.T. KAO\*, K.R. LEE, and T.H. HUANG (*Dental Department, Chung Shan Medical and Dental College, Taichung, Taiwan, ROC*).

**2330** Corrosion Behavior of Ti<sub>2</sub>N-coated and Uncoated Titanium Materials in Three Different Electrolytes. Y. OSHIDA\*, M. OLSEN, F. FARZIN-NIA, and R. SACHDEVA (*Dental Materials and Orthodontics, Indiana University School of Dentistry, Indianapolis; Materials Research and Development, ORMCO, Glendora, CA; and Orthodontics, Baylor College of Dentistry, Plano, TX, USA*).

**2331** Corrosion Behavior and Surface Structure of Orthodontic Ni-Ti Alloy Wires. M. IJIMA\*, K. ENDO, H. OHNO, and I. MIZOGUCHI (*Departments of Orthodontics and Dental Materials Science, Health Sciences University of Hokkaido, Japan*).

**2332** *In vitro* Corrosion of Welded SS and bTi Orthodontic Wires. M.C. PACHECO\*, C.N. ELIAS, and O. CHEVITARESE (*Federal University of Espirito Santo, Brazil*).

**2333** Torsional and Stiffness Properties of Nickel-Titanium, Variable Taper, U-files. G. PONGIONE\*, G. GAMBARINI, and R. GEROSA (*Dental Schools, Universities of Rome and Verona, Italy*).

**2334** Modifications in the Quantec System: Effects on Root Canal Configuration. M.F. BERTRAND\*, X. COLLET, C. AUGROS, and E. MEDIONI (*Laboratory of Dental Biomaterials and Experimental Odontology, University of Nice-Sophia Antipolis, France*).

**2335** Cleaning and Shaping of the Root Canal after Treatment with Swiss vs. US ProFile .04. U.A. BAUMANN-GIEDZIELLA\*, M.A. BAUMANN, M. ROGGENDORF, and W.H.-M. RAAB (*Dental Schools, University of Düsseldorf and Köln, Germany*).

**2336** Torsional Performance of Nickel-Titanium Rotary Endodontic Instruments with Applied Bending Deflection. N. LUEBKE, L. LAUSTEN\*, and W.A. BRANTLEY (*West Allis, WI; Marquette University, Milwaukee, WI; and Ohio State University, Columbus, USA*).

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**Seq#: 239**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Dental Materials - Properties of Composites & Compomers**

**2337** *In vitro* Pulp Chamber Temperature Changes during Composite Resin Polymerization. M. HANNIG\* and B. BOTT (*Clinic of Operative Dentistry, University of Kiel, Germany*).

**2338** Pulp Chamber Temperature Rise Produced by Various Light-curing Units during Composite Placement. M.A. PEREIRA, R.M. ARAUJO\*, and M.A.M. ARAUJO (*School of Dentistry of Sao José dos Campos—UNESP, SP, Brazil*).

**2339** Reduction of Polymerization Forces with Soft-start Polymerization—A Photo-elastic Investigation. N. BRAND\*, C.-P. ERNST, and B. WILLERSHAUSEN (*Department of Restorative Dentistry, Johannes Gutenberg University, Mainz, Germany*).

**2340** Hydroxyapatite as a Filler for Dental Resins. C. SANTOS EXPOSITO\* and K.W.M. DAVY (*Department of Biomaterials in Relation to Dentistry, St. Bartholomew's and Royal London School of Medicine and Dentistry, University of London, UK*).

**2341** Flexure Properties of Fiber-reinforced Composites Using Restrained Ends. K.A. HASER\*, C.J. BURSTONE, M.A. FREILICH, and A.J. GOLDBERG (*Center for Biomaterials, Department of Prosthetics, and Department of Orthopedics, University of Connecticut Health Center, Farmington, USA*).

**2342** Standardized Conditions for Hardness-Elastic Modulus Conversions. Y.-S. CHENG\* and W.H. DOUGLAS (*Minnesota Dental Research Center for Biomaterials and Biomechanics, University of Minnesota, Minneapolis, USA*).

**2343** Fracture Toughness of a Microfil, a Hybrid, and a "Compomer" Using the NTP Test. D. MINATO\*, N.D. RUSE, and D. FEDUIK (*Biomaterials/OBMS/Dentistry, University of British Columbia, Vancouver, Canada*).

**2344** Fatigue Crack Propagation Using the NTP Test—A Pilot Study. N.D. RUSE\* (*Biomaterials/OBMS/Dentistry, University of British Columbia, Vancouver, Canada*).

**2345** Fracture Toughness of a New "Compomer" Using the NTP Test. D. FEDUIK\* and N.D. RUSE (*Biomaterials/OBMS/Dentistry, University of British Columbia, Vancouver, Canada*).

**2346** A Comparative Analysis of Two Composite Resins Employed in Prosthetic Dentistry. A. ESPOSITO\*, M. ANDREASI BASSI, C. CITO, and G. GORACCI (*Department of Operative Dentistry, University of Rome "La Sapienza", Italy*).

**2347** Relationship between Marginal Chipping and Transverse Strengths of Composite Resins. R.T. CARTER\*, P.C. MOON, and R.F. BARNES (*Virginia Commonwealth University, Richmond, USA*).

**2348** Quantitative Margin Analysis of Restorations Using Light Microscopy. K. RUMI\*, M. PELKA, and A. PETSCHT (*Policlinic of Operative Dentistry, University of Erlangen-Nuremberg, Germany*).

**2349** Cusp Deformation by Shrinkage of Condensable Composites. E. ROOKLIDGE\*, D.B. BOYER, and M.R. BOUSCHLICHER (*College of Dentistry, University of Iowa, Iowa City, USA*).

**2350** Effect of Sterilization Cycles on Light Transmission of Light Curing Tips. J.R. DUNN, C.A. MUNOZ, K. LUONG, S. PAK, and G.M. VALENCIA\* (*Loma Linda University, CA, USA*).

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**Seq#: 240**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Properties of Impression Materials, Gypsum, Surface Measurements**

**2351** Effect of Disinfection Time on the Dimensional Stability of Alginate. P.J. LEE\*, D.F. MURCHISON, and C.M. MINKE (*Wilford Hall Medical Center, Lackland AFB, Texas, USA*).

**2352** Factors Influencing the Wettability of Vinyl Polysiloxane Impression Materials. R.S. KESS, E.C. COMBE\*, and B.S. SPARKS (*Minnesota Dental Research Center for Biomaterials and Biomechanics; and Oral Health Clinical Research Center, University of Minnesota Dental School, Minneapolis, USA*).

**2353** Effects of Retraction Cord Medicaments on Polyvinylsiloxane Impression Material. A. O'MAHONY, P. SPENCER, K. WILLIAMS, G. MARKWAY\*, and J. CORCORAN (*University of Missouri—Kansas City School of Dentistry, USA*).

**2354** Direct Influence of Disinfectants on Gypsum. K.-T. HA THI\*, U. SONDERMANN, B. WÖSTMANN, and P. FERGER (*Department of Prosthetic Dentistry, Justus-Liebig-University of Giessen, Germany*).

**2355** Improving Scratch Resistance of Resin-reinforced Die Stone. B.R. COLEMAN\*, B. KNOPF, and L. GETTLEMAN (*School of Dentistry, University of Louisville; and Whip Mix Corporation, KY, USA*).

**2356** Chemical Analysis of a New Kind of Megafiller: Preliminary Results. M. ANDREASI BASSI\*, A. ESPOSITO, C. CITO, and G. GORACCI (*Department of Operative Dentistry, University of Rome "La Sapienza", Italy*).

**2357** Micro-probe Analysis of Three Commercially Available Glass-ionomer Cements. C. CITO\*, M. ANDREASI BASSI, F. MACCARONI, and G. GORACCI (*Department of Operative Dentistry, University of Rome "La Sapienza", Italy*).

**2358** Variation of CAD/CAM Restoration Fit Due to Camera Angulation. B.C. ANDERSON\*, H.M. LIVINGSTON, T.G. GEE, and D.E. PARSELL (*School of Dentistry, University of Mississippi Medical Center, Jackson, USA*).

**2359** The Optimum Measurement Angle for Direction-dependent Surface Roughness. Y. FUKASE\*, I. AKIYAMA, Y. SATOH, H. UEHARA, K. OHKI, H. SATO, and M. NISHIYAMA (*School of Dentistry, Nihon University, Japan*).

**2360** Dimensional Analysis for Examination of Dental Restoration Surfaces. E. ACCARISI, G. ALBERGO, F. SAMPALMIERI, and S. ANDREANA\* (*Department of Dental Materials, University of Ancona, Italy; and Department of Periodontology, State University of New York at Buffalo, USA*).

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**Seq#: 241**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Diagnostic Systems - Computers/TMJ/Endodontics**

**2361** Critical Comparison of Computer Programs Utilized in Mass Disaster Identification. D.A. ALLEN\*, T.S. WOLFE, D.R. SENN, and M.E. ALDER (*Dental School, University of Texas Health Science Center at San Antonio, USA*).

**2362** Performance of Computer Speech Recognition for Clinical Data Recording. L.C. RAMP\*, N.C. GEURS, M.H. RAMP, and R.L. JEFFCOAT (*University of Alabama School of Dentistry, Birmingham, USA*).

**2363** Location of Root Canals in Molars by Tuned-aperture Computed Tomography. R. NANCE\*, D.A. TYNDALL, and M. TROPE (*University of North Carolina, Chapel Hill, USA*).

**2364** Clinical Comparison of Endodontic File Length Determination by Various Methods. S.L. EIKENBERG and S.L. SIDOFF\* (*US Army Dental Research Detachment and Naval Dental Research Institute, Great Lakes, IL, USA*).

**2365** Correlation between Bone Metabolic Marker and Bone Scintigraphy in TMD. M. TOYAMA\*, M. TSUCHIMOCCHI, K. TAKAHASHI, and A. SATO (*Department of Oral and Maxillofacial Radiology, Department of Oral and Maxillofacial Surgery, Nippon Dental University School of Dentistry at Niigata, Japan*).

**2366** Mastication Patterns of Patients with and without TMJ Meniscal Displacements. J. RADKE\*, B. RADKE, R. GARCIA, Jr., and R. KETCHAM (*BioResearch Associates, Inc., Milwaukee, WI, USA*).

**2367** MR Imaging of the TMJ by Means of a FFE Scanning Technique. Y.-J. CHEN\*, L.M. GALLO, and S. PALLA (*Maxillofacial Surgery, Center for Dental and Oral Medicine, University of Zürich, Switzerland*).

**2368** Correlation of MRI, CT, and Histologic Sections in a Study of Human Temporomandibular Joints. J. GRAMSCH\*, A. HUGGER, and J.K. MAI (*Heinrich-Heine-University Duesseldorf, Germany*).

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**Seq#: 242**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Behavioral Sciences & Health Services Research - Pregnancy and ECC**

**2369** Odontologic Attention for Pregnant Subjects. L.O. CORSETTI\*, M.C. FIGUEIREDO, C.A.V. DUTRA, and M.S. SAMPAIO (*School of Dentistry, Federal University of Rio Grande do Sul, Brazil*).

**2370** Knowledge and Habits Assessment Relating to Oral Health in Pregnant Women of Municipal Health Centers of Araraquara, SP, Brazil. I.M.G. BRANDÃO\*, A. VALSECKI, Jr., and A.M. ELIAS (*School of Dentistry, UNESP, Araraquara, SP, Brazil*).

**2371** Oral Health Improvement in a Group of Brazilian Pregnant Women. R.L. ZANATA, A.R. GODOY\*, M.F.L. NAVARRO, and J.R.P. LAURIS (*Bauru Dental School, São Paulo, Brazil*).

**2372** How Pregnant Women are Prepared to Maintain the Oral Health of Their Babies. M.E.P.R. COSTA\*, F.T.S.C. FERREIRA, S.C. CHARLIER, and R.B.C. VIANNA (*Pediatric Dentistry—FOUFRJ, Rio de Janeiro, Brazil*).

**2373** Changing Mother's Behavior: An Experience of a Dental Service. A.B.A. MORAES\*, R.F. POSSOBON, and C.E. ORTIZ (*Cepae/Faculdade de Odontologia de Piracicaba/UNICAMP, Piracicaba, Brazil*).

**2374** Pediatricians' Knowledge about Their Patients' Dental Caries. A.L. PALMINI\*, M.C. FIGUEIREDO, R.M.A. RODRIGUES, and J.B. SPERB (*School of Dentistry, Federal University of Rio Grande do Sul, Brazil*).

**2375** Breast-feeding Habits in Children Ages 0 to 48 Months. F.T.S.C. FERREIRA\*, M.E.P.R. COSTA, S.C. CHARLIER, and R.B.C. VIANNA (*Pediatric Dentistry—FOUFRJ, Rio de Janeiro, Brazil*).

**2376** Nighttime Bottle Use and Its Correlates among Young Children Enrolled in WIC. S. REISINE\*, N. TINANOFF, J. DOUGLASS, and M. LITT (*School of Dental Medicine, University of Connecticut, Farmington, USA*).

**2377** Oral Health Behaviors of Young Children in Different Socio-economic Areas. A.J. ECKERSLEY and F.A. BLINKHORN\* (*Salford Community Health Care NHS Trust, UK*).

**2378** Timing of Permanent Tooth Emergence in a Brazilian Preschool Children Population Sample. N.E. TOMITA\*, L. KAMIYAMA, J.A.de S. FREITAS, E.S. LOPES, and L.J. FRANCO (*School of Dentistry of Bauru, University of São Paulo; Hospital of Rehabilitation of Bauru, University of São Paulo; and Paulista School of Medicine-UNIFESP, São Paulo, Brazil*).

**2379** Seven-year Follow-up of an Educative and Preventive and Restorative Dental Program of the Baby Clinic at Federal University of Rio Grande do Sul, Brazil. M.C. FIGUEIREDO\*, D.B. ROSITO, J.A. MICHEL, and S. SCHERER (*Baby Clinic, School of Dentistry, Federal University of Rio Grande do Sul, Porto Alegre, Brazil*).

**2380** Relation between Suckling and Harmful Oral Habits in Brazilian Children. L.P. BITTENCOURT\*, A. MODESTO, J.G. JOHSEN, C. GORBERG, E.S. BASTOS, and R. GLEISER (*School of Dentistry, Federal University of Rio de Janeiro, Brazil*).

**2381** Factors Associated with Early Childhood Caries (ECC) in Infants. F.J. RAMOS-GOMEZ\*, J.A. WEINTRAUB, S.A. GANSKY, C.I. HOOVER, and J.D.B. FEATHERSTONE (*University of California, San Francisco, USA*).

**2382** Risk Factors of Early Childhood Caries of Maryland Preschool Children. J.T. RULE, S.E. MILLER, J.J. GUNSOLLEY, J.D. RUBIN, R.G. ABRAMS, M.P. GILNER, K. BANKS, and M.-R. WATSON\* (*University of Maryland, Baltimore; Howard University, Washington, DC; and Virginia Commonwealth University, Richmond, USA*).

**2383** Assessing Readiness to Prevent Early Childhood Caries. P. WEINSTEIN\* and C.A. RIEDY (*Department of Dental Public Health Science, University of Washington, Seattle, USA*).

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**Seq#: 243**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Behavioral Sciences & Health Services Research - School-based Studies**

**2384** Oral Health Knowledge and DMFS in 12-year-olds. K. CRESPO\*, A. ELIAS, C. TORO, J. GIUSTI, C. GONZALEZ, and R. RIVERA (*UPR, School of Dentistry, San Juan, Puerto Rico*).

**2385** A Report of a Dental Health Education Program Using a Randomized Clinical Trial Design. A.S. BLINKHORN\* (*University of Manchester, UK*).

**2386** Predicting the Risk of Dental Caries at the School Level. T.L. HUGHES\*, M.J. PIOTROWSKI, R.S. KING, and R.G.

ROZIER (*University of North Carolina, Chapel Hill; and NCDHHS, Raleigh, NC, USA*).

**2387** School-based Dental Program: Treatment Needs and Costs. B. SHRESTHA\*, C. LINSLEY, T. O'HARE, J. MARIANETTE, and T. SHARPE (*Eastman Dental Center, University of Rochester; and St. John Fisher College, Rochester, NY, USA*).

**2388** Validity of School Screenings for Estimating Dental Caries Prevalence. S. ARYANPOUR\*, M. TAVARES, J. LEFEVRE, J. SONCINI, and S. COHEN (*Harvard School of Dental Medicine and Forsyth Dental Center, Boston, MA, USA*).

**2389** Oral Screenings vs. DMFS Examinations in Amish Schoolchildren. M.E. MALLATT\*, B.J. SANDERS, J.L. MULHERIN, C.O. HAZELRIGG, J.M. OLDHAM, and G.E. MARKS (*Indiana State Department of Health; and School of Dentistry, Indiana University, Indianapolis, USA*).

**2390** Assessment of a School-based Dental Screening Project. S.G. REED\*, S.H. HOLLEY, and G.A. FLEMING (*Medical University of South Carolina, Charleston, USA*).

**2391** Value of Dental Services Provided to Western Kentucky Elementary Schoolchildren. J.C. CECIL\*, M.R. MULLINS, J.I. STIGERS, L.N. LAWLESS, and A.L. KAPLAN (*University of Kentucky College of Dentistry, Lexington, USA*).

**2392** Untreated Dental Caries among Underserved Children in Rural Kentucky. M.R. MULLINS\*, J.C. CECIL, J.I. STIGERS, L.N. LAWLESS, L. BROWN, and A.L. KAPLAN (*University of Kentucky College of Dentistry, Lexington, USA*).

**2393** A Study on a School-based Oral Health Program in Korea. S.C. SHIN\* and E.W. CHO (*Department of Preventive Dentistry, School of Dentistry, Dankook University, Korea*).

**2394** SES: A Determinant of Caries Prevalence and Severity in Indian Children. A.K. MASCARENHAS\* (*Ohio State University, Columbus, USA*).

**2395** Dental Caries Identified by Fiber Optic Transillumination (FOTI) among Quebec Schoolchildren. J.-M. BRODEUR, A.I. ISMAIL, A. LAVALLIÈRE, C. BEDOS\*, M. BENIGERI, and M. OLIVIER (*GRIS, University of Montréal, Canada; University of Michigan, Ann Arbor, USA; and Public Health Departments of Estrie and Montréal-centre, Canada*).

**2396** Illumination by Three Portable Lights Compared with Dental Operatory Lighting. J.M. KOUNTZ, M.L. KENT\*, and P.B. LOCKHART (*Carolinas Medical Center, Charlotte, NC, USA*).

**2397** Taste Preference for Sweetness in Schoolchildren in Bauru—Brazil: Influence on Dental Caries. N.E. TOMITA, P. NADANOVSKY, A. GAVAZZONI, C.I.T.S. PAULA, J.R. PEREIRA\*, H.M. HONÓRIO, M. SPERANDIO, P.R. BALEIRINE E SILVA, S.P. MACIEL, and J.R.P. LAURIS (*School of Dentistry of Bauru, University of São Paulo; and Institute of Social Medicine—UERJ, São Paulo, Brazil*).

**2398** Taste Preference for Sweetness and Socio-economic Status in Schoolchildren in Bauru—Brazil. N.E. TOMITA, A. GAVAZZONI, C.I.T.S. PAULA, J.R. PEREIRA, H.M. HONÓRIO\*, M. SPERANDIO, P.R. BALEIRINE E SILVA, S.P. MACIEL, and J.R.P. LAURIS (*School of Dentistry of Bauru, University of São Paulo, Brazil*).

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**Seq#: 244**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Behavioral Sciences & Health Services Research - HIV**

**2399** Utilization of Dental Resources by Veterans Affairs HIV/AIDS Patients. R. MORHART\*, R.O. MORGAN, and G.M. DICKINSON (*Veterans Administration MC, Miami, FL, USA*).

**2400** Facilitators and Barriers to Treatment among HIV+ and HIV- Children. H.L. BRODER\*, S. RUSSELL, and P. CATAPANO (*UMDNJ, Newark, NJ; and Bellevue/New York University, USA*).

**2401** Prevalence and Perception of Two Oral Symptoms in a National Sample of Medical HIV Patients. M. MARCUS\*, J. FREED, I. COULTER, C. DER-MARTIROSIAN, W. CUNNINGHAM, R. ANDERSEN, D. SCHNEIDER, I. GARCIA, W. MAAS, M. SHAPIRO, and S. BOZZETTEE (*HCSUS Consortium RAND/UCLA, USA*).

**2402** HIV/AIDS and Access to Dental Care in the US Southeast. R.P. STRAUSS\*, R.G. McKAIG, L.L. PATTON, J.J. ERON, Jr., and D. ROGERS (*University of North Carolina, Chapel Hill, USA*).

**2403** Identifying Models of Dentists' Willingness to Treat HIV+ Patients. C. KUNZEL\* and D. SADOWSKY (*Columbia University Dental School, New York, USA*).

**2404** Ambivalence by Dentists Unwilling to Treat HIV+ Patients: A Key to Intervention Strategies? D. SADOWSKY\* and C. KUNZEL (*Columbia University Dental School, New York, USA*).

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**Seq#: 245**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Education Research - Assessment, Continuing Education**

**2405** Teachers of the 5th and 8th Grades of Fundamental Teaching: Multiplying Agents in Buccal Health? M.A.P. FUSCELLA, L.M.G. FERNANDES\*, and M.M. ARAUJO (*UFRN-CMOS, Natal/RN, Brazil*).

**2406** Evaluation of a Mouth Care Resource Pack for Medical and Nursing Staff. M.P. SWEENEY\* and J. BAGG (*University of Glasgow, Scotland, UK*).

**2407** Qualitative Assessment of Online Continuing Dental Education in North Carolina. B. FRANCIS\*, S.M. MAURIELLO, S.K. GRAYDEN, C.L. PHILLIPS, and S.P. ENGLEBARDT (*University of North Carolina School of Dentistry, Chapel Hill, USA*).

**2408** Bitewing Diagnosis of Approximal Caries—The Skills of Final-year Students. K.-Th. WRBAS\*, A.M. KIELBASSA, J. SCHULTE-MÖNTING, and E. HELLWIG (*Departments of Operative Dentistry & Periodontology and Medical Biometr. & Statistics, University of Freiburg, Germany*).

**2409** Outcome Assessments of an Operative Dentistry Continuing Education Course. N.I. WESTERBAND\*, J.P. FANCHER, D.F. MURCHISON, and S.D. WESTBROOK (*Wilford Hall Medical Center, San Antonio, TX, USA*).

**2410** The Reliability of Student Evaluations of Laboratory Faculty. T.B. TAFT, W.K. LOBB\*, and F.J. SUTKIEWICZ (*Marquette University School of Dentistry, Milwaukee, WI, USA*).

**2411** Personality Characteristics of Dental Students. J.T. NEWTON\*, M.R. FENLON, and B. McCARTAN (*GKT, University of London, UK; and Trinity College, Dublin, Ireland*).

**2412** Survey about How to Disseminate Information to Practicing Dentists. C.W. MUNK\* and J.P. GOBETTI (*University of Michigan, Ann Arbor, USA*).

**2413** Self-assessment of HIV+/AIDS Patients' Medical History for Dental Care. M.C.F. ALVES\* and M.E.A.F. ALVES (*College of Dentistry, University of Illinois at Chicago, USA*).

**2414** Oral Health Beliefs and Practices of African American Senior Citizens. E. LUPOVICI\*, D.L. GALVIS, S. BARROW, J. DAIS, J. KREISMANN, L. STEFANO, and C. WESTPHAL (*New York University College of Dentistry, New York, USA*).

**2415** Who Takes Home Study Courses for Dental Continuing Education Credit? R. KUTHY\*, J. ODOM, H. PHUNG, and F.M. BECK (*Ohio State University, Columbus, USA*).

**2416** The Influence of Home Study Courses on Continuing Education Credits for General Dentists. R. KUTHY, H. PHUNG\*, J. ODOM, and F.M. BECK (*Ohio State University, Columbus, USA*).

**2417** Perceived Impact of Methods of Knowledge Dissemination by Research Administrators. J.D. RUGH, N. HARRISON\*, J.P. HATCH, and A.C. LARME (*University of Texas Health Science Center at San Antonio, USA*).

**2418** Variability in Teacher-assessment and Student Self-evaluation of Performance. E.E.J. KIRK\*, B.D. MONTEITH, G.R. LEWIS, and D.G. PURTON (*Department of Oral Rehabilitation, School of Dentistry, University of Otago, Dunedin, NZ*).

**2419** Differences in Student Perceptions of Clinical Experiences as Institutional Outcomes. T.B. TAFT\* and F.J. SUTKIEWICZ (*Marquette University School of Dentistry, Milwaukee, WI, USA*).

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**Seq#: 246**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Implantology - In vitro and in vivo Studies with Hydroxyapatite Coatings**

**2420** Histological Evaluation of Bioglass Particles in Rabbit's Bone Defects. R. BROOKSHAW\*, A. SCARANO, S. MATARASSO, L. CIAVARELLI, L. IANNACCONE, and A. PIATTELLI (*Dental Schools, University of Chieti and University of Naples, Italy*).

**2421** Combination Autogenous Bone with Bioactive Glass for Sinus Floor Augmentation. E. TADJOEDIN\*, G.L. de LANGE, L. BURGER, and E.H. BURGER (*Department of Oral Cell Biology, Academic Centre for Dentistry (ACTA); and Vrije Universiteit, Amsterdam, The Netherlands*).

**2422** The Influence of Different Bioactive Glasses on the Activities of Osteoblasts *in vitro*. S.H. JANG, K.M. WOO, H.M. KIM, and J.S. KO\* (*College of Dentistry, Seoul National University; and College of Dentistry, Kangnung National University, Korea*).

**2423** Treatment of Peri-implant Defects with Combination Growth Factor Cement. S.J. MERAW\* and C.M. REEVE (*Mayo Clinic, Rochester, MN, USA*).

**2424** Histomorphological Analysis of an *in situ* Eight-year Human Cadaveric HA-coated Subperiosteal/Endosteal Mandibular Implant. K. HART\*, J.E. LEMONS, L. CLARK, and D.M. MARTIN (*University of Alabama at Birmingham; and Private Practice, Stockton, CA, USA*).

**2425** Osteoblast Response to Heat-treated and Non-heat-treated CaP Coatings. Y. KINOMOTO\*, J.L. ONG, J. HAMAN, and D. CARNES (*University of Texas Health Science Center at San Antonio; and University of Alabama, Birmingham, USA*).

- 2426** Comparative Study of Hydroxyapatite (HA)-coated and Non-coated Implants. D.E. STEFLIK\*, R.S. CORPE, C. JARAMILLO, R.W. WHITEHEAD, M.D. WILSON, T.R. YOUNG, A.L. SISK, and M. HIPPS (*Medical College of Georgia, Augusta, USA; and University of Antioquia, Medellin, Colombia*).
- 2427** X-ray Photoelectron Spectroscopic Analysis of Commercial HA Coatings on Dental Implants. J.D. BUMGARDNER\*, S.D. GARDNER, M. ROACH, and J.L. ONG (*Agricultural and Biological Engineering, Chemical Engineering, Mississippi State University; and Department of Restorative Dentistry, University of Texas Health Science Center at San Antonio, USA*).
- 2428** Proteins' Adsorption and Their Effect on Dissolution of HA Coatings. S. ANDREWS\* and J.L. ONG (*University of Texas Health Science Center, San Antonio, USA*).
- 2429** Pulsed Laser Deposited Calcium Phosphate Coatings on Titanium. H. ZENG and W. LACEFIELD\* (*School of Dentistry, University of Alabama, Birmingham, USA*).
- 2430** Residual Stress Measurements for HA Coatings Using X-ray Diffraction. E. TUFEKCI\*, J.C. MITCHELL, W.A. BRANTLEY, and D.W. FOREMAN (*Ohio State University, Columbus, USA*).
- 2431** *In vitro* Biocompatibility of Microporous Hydroxyapatite. A.L. ROSA\*, A.J. DEVLIN, P.V. HATTON, and R. VAN NOORT (*University of São Paulo, Brazil; and University of Sheffield, UK*).
- 2432** Osteogenesis around Hydroxyapatite and b-Tricalcium Phosphate Blocks on the Bone. R. FUJITA\*, A. YOKOYAMA, T. KAWASAKI, Y. NODASAKA, T. IZUKA, and T. KOHGO (*School of Dentistry, Hokkaido University, Sapporo, Japan*).
- 2433** Sinus Lifting with Biomaterials and Autogenous Bone. Histomorphometric Study in Humans. R.J. BOECK NETO\*, E. MARCANTONIO, E.M. BOECK, E. MARCANTONIO, Jr., M.F.R. GABRIELLI, and R.C.C. LIA (*Araraquara Dental School—UNESP, Brazil*).
- 2434** Self-hardening Hydroxyapatite Using Succinic Acid for a Bone Substitute Material. A. YOKOYAMA\*, S. YAMAMOTO, R. FUJITA, H. MATSUNO, K. OHORI, H. KOMATSUBARA, A. TAKEISHI, S. IIDA, F. SASOH, T. KAWASAKI, M. UO, F. WATARI, and T. KOHGO (*School of Dentistry, Hokkaido University, Sapporo, Japan*).
- 2435** RH 414—a New Dye to Stain Non-decalcified Bone Tissue. J. MEYLE\*, M. KNOBLAUCH, R. ROESSLER, and A. ANIL (*Department of Periodontology, Dental School; Botanical Institute, University of Giessen, Germany; and Department of Implantology, Istanbul University, Turkey*).
- 2438** Influence of Disinfection or Sterilization on Demineralized Natural Enamel Surfaces. M. ANDO\*, B. SCHEMEHORN, C. GONZÁLEZ-CABEZAS, M. FONTANA, M.E. WILSON, and G.K. STOOKEY (*School of Dentistry, Indiana University, Indianapolis, USA*).
- 2439** Remineralization Pattern of Caries Developed on Natural and Polished Surfaces. M. FONTANA\*, C. GONZÁLEZ-CABEZAS, A.J. DUNIPACE, M.E. WILSON, A.S. SORDELLI, and G.K. STOOKEY (*Indiana University, Indianapolis, USA*).
- 2440** Scanning Electron Microscopy (SEM) on Carious Dentin after Sealing: A Study. D.S. WAMBIER\*, A.C. GUEDES-PINTO, R.G. JAEGER, and M.R.L. SIMIONATO (*Faculty of Dentistry, USP-UEPG, Brazil*).
- 2441** Transparent Dentin Associated with Natural Caries Lesions. T. BREUNIG\*, G.W. MARSHALL, J.H. KINNEY, D.L. HAUPT, and S.J. MARSHALL (*University of California, San Francisco, CA; and Lawrence Livermore National Laboratory, CA, USA*).
- 2442** Anatomic Model of a Caries Lesion by Monte Carlo Simulation. T. WANG\*, C.C. KO, Y. CAO, R. DeLONG, C.C. HUANG, and W.H. DOUGLAS (*MDRCCB, Oral Science and Department of Physics, University of Minnesota, Minneapolis, USA*).
- 2443** Enamel Ca/P Ratio Increase and Caries Inhibition in Rats. Ph. NDOBO-EPOY, A. BERARD, J. MIR, and M. MARQUET\* (*University Bordeaux 2, France*).
- 2444** Evaluation of Chlorhexidine for Prevention of Secondary Caries. B.J. SANDERS\*, R.L. GREGORY, and M. FONTANA (*Indiana University, Indianapolis, USA*).
- 2445** Chlorhexidine Varnish Inhibition of Proteolytic Activity in Dental Caries. M.B. GARCIA\*, E. RODRIGUES, J.E. NOR, L.G. SCHNEIDER, and W.A. BRETZ (*University São Francisco, São Paulo, Brazil; and University of Pittsburgh, PA, USA*).
- 2446** Salivary Matrix Metalloproteinases and Degradation of Dentin Collagen *in situ*. A.J.P. VAN STRIJP\*, D.C. JANSEN, V. EVERTS, and J.M. ten CATE (*Departments of Cariology, Endodontology and Pedodontology and Periodontology, ACTA, Amsterdam, The Netherlands*).
- 2447** A Three-dimensional Examination of Morphological Changes in Experimental Cementum Caries Lesions. K. OZAKI\* and T. MATSUO (*Department of Conservative Dentistry, Tokushima University, Japan*).
- 2448** Durability of APF-LaCl<sub>3</sub> Therapy on Hypersensitive Dentin. K. TOMIYAMA\*, Y. MUKAI, S. OKADA, H. NEGISHI, T. FUJIHARA, T. KAWASE, and T. TERANAKA (*Kanagawa Dental College, Yokosuka, Japan*).
- 2449** Remineralizing Effect of APF-LaCl<sub>3</sub> Therapy on Demineralized Hypersensitive Dentin. Y. MUKAI\*, K. TOMIYAMA, S. OKADA, H. NEGISHI, T. FUJIHARA, T. KAWASE, and T. TERANAKA (*Kanagawa Dental College, Yokosuka, Japan*).

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**Seq#: 247** **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Cariology Research - Hard Tissues, Caries Models**

- 2436** The Effect of Fluoride Concentration and the Level of Cariogenic Challenge on Caries Development. C.M. TABCHOURY\*, T. HOLT, S.K. PEARSON, and W.H. BOWEN (*University of Rochester, NY, USA; and Faculty of Dentistry of Piracicaba, UNICAMP, Brazil*).
- 2437** Evaluation of Enamel-Dentin Erosion by Beverage and Recovery by Saliva and Fluoride—*In situ* study. C.E. FUSHIDA and J.A. CURY\* (*Faculty of Dentistry of Piracicaba, UNICAMP, Brazil*).

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**Seq#: 248** **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Oral/Dental Hygiene - In vitro and in vivo Toothbrush and Bristle Evaluation**

- 2450** Effect of Toothbrushing Force on Gingival Cell Proliferation. M. HORIUCHI\*, T. TOMOFUJI, T. YAMAMOTO, and T. WATANABE (*Department of Preventive Dentistry, Okayama University Dental School, Japan*).

**2451** An Artificial Plaque Model for Evaluation of Oral Cleaning Devices. K. CARTER\*, G. LANDINI, and A.D. WALMSLEY (*School of Dentistry, University of Birmingham, UK*).

**2452** Subgingival Access and Artificial Plaque Removal of a Sonic Device. X. SHI, R.C. EMLING, R.T. BOCK, and S.L. YANKELL\* (*University of Pennsylvania School of Dental Medicine, Philadelphia; and Sonex International Corporation, Brewster, NY, USA*).

**2453** Subgingival Access and Gingival Margin Efficacy of Two Bilevel Toothbrushes. X. SHI\*, R.C. EMLING, R. BUCKER, and S.L. YANKELL (*University of Pennsylvania School of Dental Medicine, Philadelphia; and DuPont Filaments, Wilmington, DE, USA*).

**2454** A Study of Reproducibility of Toothbrushing by a Toothbrushing Simulator. J. SUZUKI\*, M. AOKI, Y. UJIE, Y. YOSHIMURA, and T. ARAI (*Department of Periodontics and Endodontics, Tsurumi University, Japan*).

**2455** Deflection Force Method for Determining Stiffness of Tufted Area of Toothbrushes. H. OGURA\*, A. MIYAZAKI, and H. MIMURA (*School of Dentistry, The Nippon Dental University, and Junior College at Niigata, Japan*).

**2456** New Test Methods for Determining Stiffness of Tufted Area of Toothbrushes. A. MIYAZAKI\*, S. KATANO, H. SATO, H. OGURA, Y. NAKANISHI, and K. KANEKO (*School of Dentistry, The Nippon Dental University; Junior College at Niigata; and Oral-Care Research Laboratories, Lion Corporation, Tokyo, Japan*).

**2457** Grip Architecture in Manual Toothbrushing. D. BEALS\*, M. WONG-PAREDES, B. ALLEN, B. RUTTER, and J. STEGEMEN (*Oral-B Laboratories, Belmont, CA; and Metaphase Design Group, St. Louis, MO, USA*).

**2458** An Evaluation of Children's Toothbrushing Habits and Techniques. J. QUINLISK, M. ROBERTS\*, and M. TAVARES (*The Gillette Company and Forsyth Dental Center, Boston, MA, USA*).

**2459** Comparison of the Plaque Removal Effectiveness of Conventional and Alternative Toothbrushes in Babies. D.G. BORGES, C.G.D.C. ZARDETTO\*, C.R.D.M. RODRIGUES, R.S. VILLENA, and P. BIGNELLI (*Dental School, University of São Paulo, Brazil*).

**2460** Ability of Implant-restored Patients to Maintain Gingival Health. S. HAIGH\*, N.C. GEURS, M. REDDY, U. FULLENWIDER, P.R. LIU, and M.K. JEFFCOAT (*School of Dentistry, University of Alabama, Birmingham, USA*).

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**Seq#: 249**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Oral/Dental Hygiene - Power Toothbrushes      and  
Dental Floss**

**2461** Comparison of Two Electric Toothbrushes in Reducing Plaque and Gingivitis. M.S. PUTT\*, K.R. DAVIDSON, J.L. MILLEMAN, and C.J. KLEBER (*Health Science Research Center, Indiana University-Purdue University, Fort Wayne, USA*).

**2462** Comparison of Powered vs. Manual Toothbrushing on Gingivitis Reduction. A. DENTINO, C. WIRTH\*, C. WILLIAMS, M. WOLF, T. SHAW, and P. WARREN (*Marquette School of Dentistry, Milwaukee, WI, USA; and Braun AG, Kronberg, Germany*).

**2463** Evaluation of Powered vs. Manual Toothbrushing on Plaque, Calculus, and Stain. A. DENTINO, G. DERDERIAN\*, M. WOLF, R. JOHNSON, and P. WARREN (*Marquette School of Dentistry, Milwaukee, WI, USA; and Braun AG Kronberg, Germany*).

**2464** Clinical Comparison of a Power Toothbrush vs. a Manual Toothbrush. R. ISAACS\*, B. BEISWANGER, M. MAU, S. ROSENFELD, S. BOGGS, H.M. PROSKIN, and G.K. STOOKEY (*Oral Health Research Institute, School of Dentistry, Indiana University, Indianapolis, USA*).

**2465** Clinical Study on the Effectiveness of Four Power Toothbrushes. S. ZIMMER\*, B. DIDNER, and J.-F. ROULET (*Department of Operative and Preventive Dentistry, Charité Berlin, Germany*).

**2466** Examination of Electric Toothbrush Bristle End Form Using SEM. K. CARTER, G. LANDINI, and A.D. WALMSLEY\* (*School of Dentistry, University of Birmingham, UK*).

**2467** Comparison of 2 Electric Toothbrushes in Removing Extrinsic Stain. N.C. SHARMA, H.J. GALUSTIANS, J.G. QAQISH\*, M.A. CUGINI, and P.R. WARREN (*BioSci Research Canada, Ltd., Mississauga, Ontario, Canada; and Braun AG, Kronberg, Germany*).

**2468** Third-generation Robot System for the Evaluation of Efficacy of Toothbrushes. P.R. WARREN\*, G.M. DRIESEN, B. BOLAND, G. HELBIG, P. HILFINGER, A. SCHWARZHARTMANN, and J. WAHRBURG (*Braun AG, Kronberg; and Universität-Gesamthochschule, Siegen, Germany*).

**2469** Effect of a Powered Toothbrush on *in vitro* Bacterial Plaque. D.M. GUERRERO\*, C. SMITH, M.A. CUGINI, and S.S. SOCRANSKY (*Forsyth Dental Center, Boston; and Braun Inc., Woburn, MA, USA*).

**2470** Determining Flavor Release from Dental Floss Using Saliva Flow Measurements. D. RICHARDSON\*, X. SHI, N. EVEN-HEN, R.C. EMLING, M. SAINDON, J. HOLLAND, M. HARRIS, and S.L. YANKELL (*University of Pennsylvania School of Dental Medicine, Philadelphia; and J&J, Skillman, NJ, USA*).

**2471** Perceptual Attributes of Flossing. A.W. LEIPHART\* and M. WONG-PAREDES (*Oral-B Laboratories, Belmont, CA, USA*).

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**Seq#: 250**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Nutrition - Dental Effects of Dietary Factors**

**2472** Effects of Black Tea Extract on Oral Pathogens. G.X. WEI\*, C.D. WU, J. NICKELSEN, J.S. WEFEL, and P. LINGSTRÖM (*Periodontics Department, University of Illinois at Chicago; Dows Institute, University of Iowa; and Cariology Department, University of Göteborg, Sweden*).

**2473** Can the Texture of Food Affect Oral Cleansing? M.L. BERG\*, L. COFFMAN, and J.J. HEFFERREN (*Higuchi Biosciences Center, University of Kansas, Lawrence, USA*).

**2474** Sugar Consumption as Related to Body Mass Index. R. ABRAMS\* and C. AYERS (*Marquette University School of Dentistry, Milwaukee, WI, USA*).

**2475** Child Preference Testing of Xylitol-based Foods. M. LAM\*, S.E. COLDWELL, P. MILGROM, C.A. RIEDY, and R. CRAIG (*Dental Public Health Sciences, University of Washington, Seattle; and Cultor Food Science Corporation, New York, NY, USA*).

**2476** Dietary Fluoride Intake of Preschool Children in Japan. T. KINOSHITA\*, M. MORITA, T. KIMURA, T. AKAGI, M. TSUNEISHI, T. WATANABE, and F. YAMASHITA (*Department of Preventive Dentistry, Okayama University Dental School; and Yamashita Dental Clinic, Miyakonojyou, Miyazaki, Japan*).

**2477** Combined Effects of Caffeine and Alcohol on Osteoblast-like Cells. T. NAKAMOTO\*, B.K. MOORE, P. SYKES, M. OHTA, Y. KIYOURA, and M. YAZDANI (*School of Dentistry, LSU Medical Center, New Orleans, LA, USA*).

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**Seq#: 251**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

### Mineralized Tissue - Cartilage & Bone

**2478** Vitamin D Metabolite-specific Effects on Alkaline Phosphatase Activity in Costochondral Chondrocytes are Modulated by Secretory Phospholipase A<sub>2</sub>. K. BURKE\*, F. DEL TORO, Jr., Z. SCHWARTZ, D.D. DEAN, and B.D. BOYAN (*University of Texas Health Science Center at San Antonio, TX; and Hebrew University Hadassah Faculty of Dental Medicine, Jerusalem, Israel*).

**2479** Release and Activation of Extracellular Matrix-stored Latent TGF- $\beta$ 1 by Growth Plate Chondrocytes Occur via Two Different Mechanisms. M. ROBINSON\*, H.A. PEDROZO, R. GOMEZ, D.D. DEAN, B.D. BOYAN, and Z. SCHWARTZ (*Health Science Center, University of Texas, San Antonio, USA; and Hebrew University, Jerusalem, Israel*).

**2480** Effects of IL-1 $\beta$  on NO and Proteoglycan Production in Chondrocytes. H. TACHIBANA\*, S. KAKUTA, E. IMOTO, K. YAGAMI, and M. NAGUMO (*Second Department of Oral and Maxillofacial Surgery, Showa University, Tokyo, Japan*).

**2481** The Effect of b-FGF for Heterogenetic Bone Formation in Hybrid Materials Compounded with Various Carriers and Osteogenetic Cells. K. GOMI\*, M. KANAZASHI, A. AOKI, K. TOGASHI, K. MUROKI, T. ARAI, and J. NAKAMURA (*Department of Periodontics and Endodontics, Tsurumi University, Japan*).

**2482** X-ray Diffractometry Analysis of Hydroxyapatite Bone Substitution Materials. C. BASNER\*, P. CANTZLER, E. SPASSOVA, R. EWERS, and N. BERGNER (*Mannheim, Germany; Friatec AG, Germany; CMF Vienna, Austria; and Department of Oral and Maxillofacial Surgery, Vienna University, Austria*).

**2483** Healing of Bone Defects Treated with Hydroxyapatite Particles. P. DI DOMIZIO\*, A. SCARANO, M. PIATTELLI, C. MANGANO, R. MARTINETTI, and A. PIATTELLI (*Dental School, University of Chieti; and Finceramica, Faenza, Italy*).

**2484** Histological Aspects of Maxillary Sinus Lifting with Calcium-sulfate and Bone Chips. A. ROCCI\*, A. SCARANO, M. PIATTELLI, and A. PIATTELLI (*Dental School, University of Chieti, Italy*).

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**Seq#: 252**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

### Mineralized Tissue - Bone Cells

**2485** The Secretion of TGF- $\beta$  and PDGF by Human Periodontal-tissue-derived Cells. K. SUZUKI\*, K. KAWAMOTO,

K. ITO, and S. MURAI (*Department of Periodontology, Nihon University School of Dentistry, Tokyo, Japan*).

**2486** A Chemically-modified Doxycycline (CMT-8) Alone or Combined with Bisphosphonate Inhibits Bone Loss in the Ovariectomized Rat: A Dynamic Histomorphometric Study. S.D. BAIN\*, N.S. RAMAMURTHY, A. LLAVANERAS, D. PUERNER, M.J. STRACHAN, K. SCHEER, and L.M. GOLUB (*Skeletech, Inc., Kirkland, WA; School of Dental Medicine, State University of New York, Stony Brook, USA; and University of Central Venezuela*).

**2487** Nicotine Effect on Human Osteoblastic Cells. A.R. KAMER\* and R. DZIAK (*State University of New York at Buffalo, USA*).

**2488** Effects of Calcium Phosphate Chemistry on Osteoblast and Fibroblast Morphology. E.M. BURKE\*, C.W. PRINCE, and L.C. LUCAS (*University of Alabama at Birmingham, USA*).

**2489** Effects of IL-1 and IL-6 on Human Alveolar Bone-derived Cells. T. NISHIYAMA\*, M. MAENO, Y. ABIKO, and K. OTSUKA (*Departments of Biochemistry, Nihon University School of Dentistry and School of Dentistry at Matsudo, Japan*).

**2490** Restricted and Coordinated Expression of  $\beta$ 3-integrin and Bone Sialoprotein during Cultured Osteoblast Differentiation. G. SCHNEIDER\*, S.W. WHITSON, and L.F. COOPER (*University of North Carolina School of Dentistry, Chapel Hill; and Southern Illinois University School of Dental Medicine, Alton, USA*).

**2491** Estrogen Treatment Reduces Staurosporine-induced SMER-14 Osteoblastic Cell Apoptosis. L.F. COOPER\*, H. HAMANO, and Z.-Y. GUO (*Department of Prosthodontics, University of North Carolina, Chapel Hill, USA; and Department of Prosthodontics II, Tokyo Medical and Dental University, Japan*).

**2492** Osteopontin is an Intracellular Component of the CD44-ERM Complex Involved in Cell Migration. N. SUZUKI\*, R. ZOHAR, P. ARORA, M. GLOGAUER, C.A.G. McCULLOCH, and J. SODEK (*MRC Group in Periodontal Physiology, Faculty of Dentistry, University of Toronto, ON, Canada*).

**2493** Effects of Insulin and Insulin-like Growth Factors (IGFs) on Adipocyte Progenitors and Osteoprogenitors in Fetal Rat Calvaria Cells. A. HASSANLOO\*, C.G. BELLOWS, D. JIA, and J.N.M. HEERSCHÉ (*Faculty of Dentistry, University of Toronto, ON, Canada*).

**2494** Calcitonin Receptor C1a Selectively Activates Metabolism in HEK 293 Cells. A. SANTHANAGOPAL\*, J.-F. SHYU, W.C. HORNE, R. BARON, and S.J. DIXON (*Department of Physiology & Division of Oral Biology, University of Western Ontario, London, Canada; and Departments of Cell Biology & Orthopedics, Yale University School of Medicine, New Haven, CT, USA*).

**2495** Human Oral Cells Transduced by BMP-7 Produce Ectopic Bone. E. HILL\*, C. AUSTIN, and R.B. RUTHERFORD (*School of Dentistry, University of Michigan, Ann Arbor, USA*).

**2496** The Nucleation of Apatite in Sutural Calvaria Mineralization of Rat. H.-P. WIESMANN\* and U. JOOS (*Westfälische Wilhelms-University Münster, Germany*).

**2497** Fluoride-treated Bone-derived Material Promotes Osteoblast Proliferation and Enhances Collagen Expression *in vitro*. C.G. FRONDOZA\*, R.Z. LeGEROS, V.L. TSEN, and D.S. HUNGERFORD (*Johns Hopkins University, Baltimore, MD; and New York University College of Dentistry, NY, USA*).

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**Seq#: 253**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**



**Microbiology/Immunology - *Fusobacterium*, *Campylobacter*, *Helicobacter*, and New Agents**

**2498** DNA Sequence Analysis of the *Fusobacterium nucleatum* Plasmid, pFN1. S. KINDER HAAKE\* and S.M. FINEGOLD (University of California at Los Angeles School of Dentistry; and the Wadsworth Anaerobe Lab at the West Los Angeles Veterans Administration Medical Center, CA, USA).

**2499** Acquisition of Plasmin Activity by *Fusobacterium nucleatum*: Potential Roles in Tissue Destruction. H. DARENFED, D. GRENIER\*, and D. MAYRAND (Groupe de Recherche en Écologie Buccale, Université Laval, Québec, Canada).

**2500** S-layer of *Campylobacter rectus*: Role in Gingival Fibroblast (HGF) Adherence and Cytokine Stimulation. K. REDDI\*, J.L. EBERSOLE, and S.C. HOLT (University of Texas Health Science Center at San Antonio, USA).

**2501** Interleukin Secretion by the GroEL-like Protein from *Campylobacter rectus*. D. HINODE\*, S. TANABE, O. MIKI, K. MASUDA, M. YOSHIOKA, and R. NAKAMURA (Department of Preventive Dentistry, School of Dentistry, University of Tokushima, Japan).

**2502** Oral Carriage of *Helicobacter pylori* in Rural Guatemala. S.A. DOWSETT\*, L. ARCHILA, K.A. VASTOLA, C.G. BONILLA, V.A. SEGRETO, and M.J. KOWOLIK (Indiana University School of Dentistry, Indianapolis; The Procter and Gamble Company, Cincinnati, OH; UTHSCSA, San Antonio, TX, USA; Faculta Odontologia UMG, Guatemala City, Guatemala; and IMSS, Mexico City, Mexico).

**2503** Colonization of Human Dental Plaque by *Helicobacter pylori*. A.A. KHAN and A.K. BUTT\* (Shaikh Zayed Hospital, Lahore, Pakistan).

**2504** Detection of *Helicobacter pylori* in the Stomachs and the Oral Cavities of a Venezuelan Population. A. BERROTERAN, M. TOMBAZZI, M. CORRENTI, M. CAVAZZA, R. GONCALVEZ, and M. PERRONE\* (MSAS, Central University of Venezuela, Caracas).

**2505** Reclassification of *Eubacterium exiguum* as *Thalibacter exiguus* gen. nov., comb. nov. T. HASHIMURA\*, F. NAKAZAWA, M. SATO, and E. HOSHINO (Oral Microbiology, Niigata University, Japan).

**2506** Proposal of *Mogibacterium pumilum* and *M. vesicum* gen. nov., sp. nov. F. NAKAZAWA\*, T. HASHIMURA, S.E. POCO, Jr., M. SATO, T. IKEDA, and E. HOSHINO (Oral Microbiology, Niigata University, Japan).

**2507** RFLP Analysis of 16S rDNA from *Pseudolamibacter alactolyticus*. T. TAMURA\*, T. SATO, M. SATO, S. EDWARDSSON, S. KALFAS, G. SUNDQVIST, M. IWAKU, F. NAKAZAWA, and E. HOSHINO (Niigata University, Japan; Lund University and Umeå University, Sweden).

**2508** Experimental Endocarditis Induction and Fibronectin Binding of *Abiotrophia adiacens*. Y. OKADA, K. KITADA, H.-O. ITO, and M. INOUE\* (Department of Preventive Dentistry, Kagoshima University Dental School, Japan).

**2509** *Mycoplasma genitalium* and *Mycoplasma fermentans* in the Human Temporomandibular Joint. C.V. HUGHES\*, C.H. HENRY, R.G. MAJZNER, G.C. HERVE, A.P. HUDSON, and L.M. WOLFORD (Boston University, MA; Wayne State University, Detroit, MI; and Baylor University Medical Center, Dallas, TX, USA).

**2510** Radiation Sensitivity of *Bacillus cereus* Due to the Alteration of S-layer. A. KOTIRANTA\*, H. ITO, K. LOUNATMAA, and M. HAAPASALO (University of Helsinki, Finland; University of Oslo, Norway; and Atomic Energy Research Institute, Japan).

**2511** Evaluation of Streptococcal Protocols in the Electroporation of *Peptostreptococcus micros*. B.J. DORFMAN\*, Y. LIU, and K.F. NOVAK (School of Dental Medicine, University of Pittsburgh, PA, USA). (1998 AADR Student Fellowship Recipient)

**2512** Age-related Frequency of Penicillin Resistance of Oral *Veillonella* spp. in Infancy. S. NYFORS\*, E. KÖNÖNEN, A. BRYK, and H. JOUSIMIES-SOMER (National Public Health Institute, Helsinki, Finland; and University of Aarhus, Denmark).

**Seq#: 254** **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Microbiology/Immunology - *Microbial Biofilms and Dental Plaque***

**2513** Effect of Chlorhexidine-Copper or Zinc on *Streptococcus mutans* Biofilms. M. SHELTON, R. SRIKANTHA\*, B. OLSON, and D. DRAKE (College of Dentistry, University of Iowa, Iowa City, USA).

**2514** Adhesins Involved in *P. gingivalis*-*S. gordonii* Biofilm Formation. Y. PARK\*, J.W. COSTERTON, G.S. COOK, D.R. DEMUTH, and R.J. LAMONT (University of Washington, Seattle; Montana State University; and University of Pennsylvania, Philadelphia, USA).

**2515** Characterization of Biofilm Formation of *Streptococcus gordonii* to Polystyrene Surfaces. C.Y. LOO\* and N. GANESHKUMAR (Forsyth Dental Center, Boston, MA, USA).

**2516** Factors Affecting Volume Variation in Streptococcal Model Plaque Biofilms. R.K. ROSE\* (Department of Restorative Dentistry, Dental School, Bristol, UK).

**2517** Effects of Mentadent Dentifrice on Oral Biofilms. G.K. WATSON\*, C. ALLISON, and P.C. WATERFIELD (Unilever Dental Research, Bebington, UK).

**2518** Survival of Anaerobes, Alone and in Co-culture, under Aerated Conditions. P.D. MARSH\*, D.J. BRADSHAW, G.K. WATSON, and C. ALLISON (CAMR, Salisbury; and Unilever Research, Bebington, UK).

**2519** Validation of an Automated Immunofluorescence Technique for Supragingival Plaque Analyses. T. THURNHEER\*, E. GIERTSEN, B. GUGGENHEIM, and R. GMÜR (University of Zürich, Switzerland; and University of Bergen, Norway).

**2520** Structural Studies of Hydrated Microcosm Plaques. J. PRATTEN\*, C.S. ANDREWS, D.Q.M. CRAIG, and M. WILSON (Eastman Dental Institute and Centre for Materials Science, School of Pharmacy, University of London, UK).

**2521** Model Evaluating Effects of Fluoride on Dental Water Line Biofilm. M. DOHERTY\*, M. SLACK, and J. THOMAS (West Virginia University, Morgantown, USA).

**2522** Antibodies to Noncollagenous Matrix Proteins of Calcified Tissues Bind to Dental Plaque Bacteria. A. NANJI, M. FORTIN\*, and S. ZALZAL (Faculty of Dentistry, Université de Montréal, QC, Canada).

**2523** *In situ* Adherence of Streptococci to Conventional and Resin-modified Glass Ionomers. T. TAKATSUKA\*, Y. OHTA, N. KONISHI, H. OHTA, Y. TORII, K. FUKUI, and K. INOUE (Departments of Operative Dentistry and Microbiology, Okayama

University Dental School; and Department of Bioresource Sciences, School of Agriculture, Ibaraki University, Japan).

**2524** Effect of Orthodontia on Salivary Mutans Streptococci and IgA Antibody. R.L. GREGORY\* and M.L. WITTLER (Indiana University, Indianapolis, USA).

**2525** Oral Malodor: Defining the Normal Tongue Flora. C.E. KAZOR\*, J.R. FLOWERS, J. STOLL, and W.J. LOESCHE (University of Michigan, Ann Arbor, USA).

**2526** Relationship of Bacterial Mats on the Base of the Tongue with Oropharyngeal Flora and Excess Secretions. W.A. BRETZ\*, W.J. LOESCHE, J.T. MURRAY, and M.A. SCHORK (University of Pittsburgh, PA; and University of Michigan, Ann Arbor, USA).

**2527** Determination of Oral Bacteria by Competitive Quantitative PCR. S. RUPF\*, K. MERTE, and K. ESCHRICH (Department of Operative Dentistry and Periodontology, Institute of Biochemistry, University of Leipzig, Germany).

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**Seq#: 255**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Microbiology/Immunology - Adhesive Antigens from *Streptococcus mutans***

**2528** Novel Cofactors Required for *S. mutans* Sucrose-dependent Adhesion. L. TAO\* (University of Illinois at Chicago, USA).

**2529** Purification of Glucosyltransferase from *Streptococcus mutans* GS-5 Supernatant by Affinity Chromatography. G. TONG\*, N.K. CHILDERS, and S.M. MICHALEK (School of Dentistry and Department of Microbiology, University of Alabama at Birmingham, USA).

**2530** Peptides Associated with the b<sub>5</sub> Barrel Element of Glucosyltransferase (GTF) Induce GTF-reactive and -inhibitory Antibody. D.J. SMITH, R.L. HESCHEL, W. KING\*, M. RIPPARE, and M.A. TAUBMAN (Forsyth Dental Center, Boston, MA, USA).

**2531** Effect of Intranasal Immunization with an Antigen of *Streptococcus mutans* on the Recolonization of Indigenous *S. mutans* in Humans—A Pilot Study. H. KALAPODA\*, J. KATZ, K. BLACK, and S.M. MICHALEK (School of Dentistry, University of Alabama at Birmingham, USA).

**2532** Use of *S. typhimurium* Expressing an Anaerobically-inducible Streptococcal Adhesin as a Vaccine against *S. mutans* Infection. Y. HUANG\*, G. HAJISHENGALLIS, and S.M. MICHALEK (Departments of Microbiology and Oral Biology, School of Dentistry, University of Alabama at Birmingham, USA).

**2533** Modulation of the Immune Response against *Streptococcus mutans* Antigen P1 by an Anti-P1 Monoclonal Antibody. L.J. BRADY\* (University of Florida, Gainesville, USA).

**2534** Construction and Characterization of a Chimeric Vaccine Protein Consisting of Two Virulence Factors of *S. mutans*. J.W. SMITH\*, C. JESPERGAARD, G. HAJISHENGALLIS, and S.M. MICHALEK (School of Dentistry and Departments of Oral Biology and Microbiology, University of Alabama at Birmingham, USA).

**2535** Construction and Characterization of a GTF Glucan-binding Domain-Thioredoxin Chimeric Protein. C. JESPERGAARD\*, G. HAJISHENGALLIS, M.W. RUSSELL, and S.M. MICHALEK (Department of Microbiology, University of Alabama at Birmingham, USA).

**2536** Intranasal Immunization with *S. mutans* SBR Linked to CTA2/B and Adjuvanted with Monophosphoryl Lipid A. G. HAJISHENGALLIS\*, T. ULRICH, and S.M. MICHALEK (School of Dentistry and Departments of Oral Biology and Microbiology, University of Alabama at Birmingham; and RIBI ImmunoChem, Hamilton, MT, USA).

**2537** Antibodies to *Streptococcus mutans* Fimbrial Protein in Caries Prevention. T.L. BULLER\*, M.E. WILSON, M. FONTANA, and R.L. GREGORY (Indiana University, Indianapolis, USA).

**2538** Human Anti-*Streptococcus mutans* IgA Subclass Distribution in Saliva and Nasal Wash. N.K. CHILDERS, J.C. LLARENA\*, G. TONG, and S.M. MICHALEK (School of Dentistry and Department of Microbiology, University of Alabama at Birmingham, USA).

**2539** Assessment of Cross-reacting Antibodies with Human Antigens Following *Streptococcus mutans* Immunization. N.K. CHILDERS, T. LAMBERT\*, G. TONG, K.L. MILLER, and S.M. MICHALEK (School of Dentistry and Department of Microbiology, University of Alabama at Birmingham, USA).

**2540** Synthetic Peptides Inducing Cross-reacting Antibodies to Streptococcal Pac without Adjuvant. H. KATO, H. TAKEUCHI, Y. OISI, H. SENPUKU, N. HANADA, N. SHIMURA, and T. NISIZAWA\* (Oral Science, National Institute of Infectious Diseases; and Department of Preventive Dentistry and Public Health, Faculty of Dentistry, Tokyo Medical and Dental University, Japan).

**2541** Antiphagocytic Role of *Streptococcus mutans* Rhamnose-Glucose Polysaccharide against HL-60 Cells. H. TSUDA\*, K. NAGATA, Y. YAMASHITA, N. YAMAGUCHI, and T. KOGA (Department of Preventive Dentistry and Oral Anatomy, Kyushu University Faculty of Dentistry, Fukuoka, Japan).

**2542** Neutrophil Activation, Phagocytosis, and Killing of *Streptococcus mutans* Clinical Isolates. M.A. MOORE\*, R.L. GREGORY, and M.J. KOWOLIK (Department of Periodontics, Indiana University School of Dentistry, Indianapolis, USA).

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**Seq#: 256**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Microbiology/Immunology - Root Caries, Other Oral Infections and Responses**

**2543** Role of Fimbriation in Root Caries: An *in vitro* Study. R.J. SELDERS\*, M. FONTANA, M.E. WILSON, and R.L. GREGORY (Indiana University, Indianapolis, USA).

**2544** Immunohistological Studies on Apical Parts of the Roots with Infected Canals. T. MATSUO\*, N. MATSUOKA, Y. YOSHIDA, K. FUJINAKA, and H. NAKAE (Department of Conservative Dentistry, Tokushima University School of Dentistry, Japan).

**2545** Experimentally Induced Periapical Dental Osteitis and Sinusitis in a Rabbit Model. U.K.E. GARMING LEGERT\*, C.M. ZIMMERMAN, and L.E.P. STIERNA (Department of Oral Diagnostics and Hospital Dentistry and Department of Otorhinolaryngology, Huddinge University Hospital, Karolinska Institutet, Stockholm, Sweden).

**2546** Periapical Cementum as Possible Reservoir for Endodontic Re-infection. A.W. HOLLIS\*, S. ANDREANA, J.M. DiFLORIO, R.E. HALL, R.E. COHEN, S.G. CIANCIO, and P. BUSH (Departments of Periodontology and Oral Surgery, South

Campus Instrumentation Center, State University of New York at Buffalo, USA).

**2547** Orthodontic Movement Induces *de novo* Synthesis of Pro-inflammatory Cytokines. N. ALHASHIMI\*, L. FRITHIOF, P. BRUDVIK, and M. BAKHIET (Department of Orthodontics and Periodontology, Karolinska Institutet, Huddinge, Sweden).

**2548** Evaluation of Antibiotic Testing for Optimizing Therapy of Peri-implant Diseases. O. DÖRTBUDAK\*, R. HAAS, and G. MAILATH-POKORNY (Department of Oral Surgery, University of Vienna, Austria).

**2549** Natural Killer Cell Trafficking Increases in Root Canal Patients. P. HARRIS\*, H. LOGAN, S. LUTGENDORF, D. LUBAROFF, and C. LOGAN (College of Dentistry, University of Iowa, Iowa City, USA).

**2550** Fibronectin Enhances Mechanical Adhesiveness of Chondrocytes. D. SHIN\*, B.S. THOMA, R.G. LEBARON, C.M. AGRAWAL, and K.A. ATHANASIOU (University of Texas Health Science Center, San Antonio, USA).

**2551** Effects of CX3C Chemokine, Fractalkine on Adhesion of THP-1 Cells to Extracellular Matrix. S. GOHDA\*, H. INOUE, N. DOMAE, and H. IMAI (Department of Periodontology and Department of Internal Medicine, Osaka Dental University, Japan).

**2552** DNA Fingerprinting of Human and Bacterial Cells from the Aerodigestive Tract. C. MALLOFF\*, A. ISHKANIAN, L. ZHANG, M.P. ROSIN, and W.L. LAM (BC Cancer Agency; University of BC; and Simon Fraser University, BC, Canada).

**2553** Boundary Proteinases of *Porphyromonas gingivalis*: Properties and Role to Provide Iron Source. S. FUJIMURA\* and T. NAKAMURA (Department of Oral Microbiology, Matsumoto Dental University, Shiojiri, Japan).

**2554** Outer Membrane Vesicles of *Porphyromonas gingivalis* Inhibit IFN $\gamma$ -mediated MHC Class II Expression on Human Endothelial Cells. R. SRISATJALUK\*, D.J. JUSTUS, and R.J. DOYLE (Department of Microbiology and Immunology, Health Science Center, University of Louisville, KY, USA).

**2555** FOSAMAX (Bisphosphonate) Modifies the Production of Mature IL-1 $\beta$ . J. JANDINSKI, M. PALLANTE\*, X. SHEN, and R. CHEN (UMDNJ, Newark, NJ, USA).

**2556** Investigation of Occupational Injuries Reported by Final-year Dental, Medical, and Nursing Students. J.E. BRITTON\* and G.M. MCCARTHY (University of Western Ontario, London, Canada).

**2557** Percutaneous Injuries and Mucous Membrane Exposures among Dental Students. D. MARQUEZ, J. DAVILA\*, G. FLORES, V. VIVES, and C. DAVILA (Cayetano Heredia Peruvian University School of Dentistry, Lima, Peru; and University of Rochester Eastman Dental Center, NY, USA).

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**Seq#: 257**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Periodontal Research – Diagnosis/Epidemiology - Bacterial Assessment of Periodontal Diseases**

**2558** Periodontal Pathogen Infection in 6- to 36-month-old Children. E.Y. YANG\*, A.C.R. TANNER, P. MILGROM, S.A. MOKEEM, C.A. RIEDY, A.T. SPADAFORA, R.C. PAGE, L. MANIBUSAN, and J. BRUSS (University of Washington, Seattle; and Forsyth Dental Center, Boston, MA, USA).

**2559** A Longitudinal Study of the Subgingival Microflora in Smokers and Non-smokers. M.P. CULLINAN\*, S. HAMLET, B.

WESTERMAN, J.E. PALMER, M.J. FADDY, and G.J. SEYMOUR (University of Queensland, Brisbane, Australia).

**2560** Incidence of Periodontal Pathogens in an Adult Population with Class II Furcation Defects. K.C. GODOWSKI\*, H.M. FLETCHER, C.B. WALKER, S. GARRETT, N. STOLLER, G. BOGLE, and I. MAGNUSSON (Atrix Labs, Ft. Collins, CO; Loma Linda University, CA; University of Florida, Gainesville; and University of Colorado, Denver, USA).

**2561** Multiplex PCR Detects *Actinobacillus actinomycetemcomitans*, *Bacteroides forsythus*, and *Porphyromonas gingivalis*. S.D. TRAN\* and J.D. RUDNEY (Department of Oral Science, School of Dentistry, University of Minnesota, Minneapolis, USA).

**2562** A Rapid DNA Probe Method for Diagnosis of Periodontal Pathogens. A. KOMIYA\*, T. KATO, A. SAITO, T. NAKAGAWA, J. TAKAHASHI, K. OKUDA, and S. YAMADA (Departments of Periodontics and Microbiology, Tokyo Dental College, Chiba, Japan).

**2563** Quantitation of *Porphyromonas gingivalis* with the 5'-nuclease Assay (TaqMan). S.R. LYONS\*, A.L. GRIFFEN, and E.J. LEYS (Ohio State University, Columbus, USA).

**2564** Detection of *Prevotella intermedia* by PCR. S. PALANGSAK, R. SURARIT\*, S. PETMITR, B. THAWEBOON, and W. WEERAPRADIST (Faculty of Dentistry, Mahidol University, Bangkok, Thailand).

**2565** Relationship between *Porphyromonas gingivalis* and Periodontal Status in Thai Patients. N. CHANDRAPHO\*, P. LAOHAPAND, R. SURARIT, S. PETMITR, and B. THAWEBOON (Faculty of Dentistry, Mahidol University, Bangkok, Thailand).

**2566** The Occurrence of *Prevotella nigrescens* and *Prevotella intermedia* in a Group of Localized Juvenile Periodontitis Patients' Lesions in Turkey. H. BOSTANCI\*, G. ERES, M. MIYAMOTO, and Y. MURAYAMA (Periodontology Department, Dental School, Ankara University, Turkey; and Periodontology and Endodontology Department, Dental School, Okayama University, Japan).

**2567** The Correlation between the Subgingival Microflora and Clinical Parameters in a Group of Localized Juvenile Periodontitis Patients in Turkey. G. ERES\*, M. MIYAMOTO, H. BOSTANCI, and Y. MURAYAMA (Periodontology Department, Dental School, Ankara University, Turkey; and Periodontology and Endodontology Department, Dental School, Okayama University, Japan).

**2568** Correlation between Halitosis and Periodontal Pathogens Detected by BANA Test. S.L. SALVADOR\*, L.C. FIGUEIREDO, E. MARCANTONIO, Jr., R.A.C. MARCANTONIO, and E.P. ROSETTI (University of São Paulo and University Estadual Paulista, Brazil).

**2569** Correlation between Clinical Parameters and Subgingival Sulfide Levels. J.K. YIP\*, F. MARAVI, S.R. VAKILI, J. LUPOVICI, H.-C. VU, M. PALAT, and C.C. TSENG (New York University College of Dentistry, NY, USA).

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**Seq#: 258**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Periodontal Research – Pathogenesis - Host Molecules and Cellular Effects**

**2570** Short Actin Filaments Enhance Phagocytosis of Collagen by Gingival Fibroblasts. G. SEGAL\*, W. LEE, and C.A.G.

McCULLOCH (*MRC Group in Periodontal Physiology, University of Toronto, Canada*).

**2571** Estrogen and LPS Effects on Monocyte CD14 and IL-1b Secretion. C. MEYER\*, R.A. REINHARDT, C.A. MAZE, S. KOKA, and J.B. PAYNE (*UNMC College of Dentistry, Lincoln, NE, USA*).

**2572** Histologic Characterization of Human Gingival Organ Cultures. S. DOGAN\*, G. HILLMANN, and W. GEURTSEN (*National Research Center for Biotechnology Ltd. (GBF), Braunschweig; and Medical University of Hannover, Germany*).

**2573** Effects of Camphorated Parachlorophenol on Human Periodontal Ligament Fibroblasts. K.W. TAI\*, Y.C. CHANG, S.S. LIN, and M.Y. CHOU (*School of Dentistry, Chung Shan Medical and Dental College, Taichung, Taiwan, ROC*).

**2574** High Concentration of L-tryptophan Induces Gingival Collagenase Gene Expression. S. DELLIGATTI\*, Q.A. HAMID, M. TEWARI, S. UEMATSU, P.J. REDDY, N. WITOWSKI, O.C. TUNCAY, and D.S. TEWARI (*Department of Orthodontics, School of Dentistry, Temple University, Philadelphia, PA, USA*).

**2575** Role of Charged Residues of Human Neutrophil FMLP Receptor. A. LALA\* and E. De NARDIN (*Department of Oral Biology, School of Dentistry, State University of New York at Buffalo, USA*).

**2576** Role of Arginine and Lysine in Formyl Peptide Receptor Function. B. LAMBERT\*, A. LALA, and E. De NARDIN (*Department of Oral Biology, State University of New York at Buffalo, USA*).

**2577** Protease Gene Expression in a Non-proteolytic, Non-virulent *recA*<sup>-</sup> Mutant Strain of *Porphyromonas gingivalis* W83. H. ABAIBOU\*, G.J. OLANGO, and H.M. FLETCHER (*Loma Linda University, CA, USA*).

**2578** Effect of Differentiation Factors on Pro-inflammatory/Immune Action of LPS-induced Monocyte/Macrophage. B.Y. CHOI\* and H.S. KIM (*Chon-buk University, Korea*).

**2579** Expression of Bone Sialoprotein (BSP) Gene in Experimental Tooth Movement. K. SASAGURI\*, M. YAMAUCHI, E. HASEGAWA, K. TSUKINOKI, Y. WATANABE, and S. SATO (*Departments of Orthodontics and Oral Pathology, Kanagawa Dental College, Yokosuka, Japan*).

**2580** Retroviral Transduction of Periodontal Cells with a Temperature-sensitive SV40 Large T Antigen. M.H. PARKAR\*, H.N. NEWMAN, M. O'HARE, F. HUGHES, and I. OLSEN (*Eastman Dental Institute, University of London, UK*).

**2581** Analysis of Lymphocyte Infiltration Mechanisms in Periodontal Diseased Tissue. H. SHIMIZU\*, Y. HOSOKAWA, T. NAKANISHI, and T. MATSUO (*School of Dentistry, Tokushima University, Japan*).

**2582** The Role of the Lipid Mediators in the Pathogenesis of Periodontal Diseases. G. EM'ING'IL\*, S. ÇINARCIK, H. BAYLAS, I. ÇOKER, and A. HÜSEYINOV (*Department of Periodontology, School of Dentistry; Clinical Research Laboratory Biochemistry, SSK; and Department of Pediatrics, Faculty of Medicine, Ege University, Izmir, Turkey*).

**2583** Effects of HGF Endotoxin on Endothelial Cells of Periodontal Ligament—Special Reference to Tube Formation. E. SATO\*, M. INADA, M. EZURE, K. TEZUKA, S. SATO, H. HASHIMOTO, T. TACHIBANA, H. ISHIKAWA, and K. KAMOI (*Department of Periodontology, School of Dentistry at Tokyo, The Nippon Dental University, and Department of Anatomy, School of Medicine, Jikei University, Japan*).

**2584** Targeted Disruption of Decorin Gene Leads to Hypercellularity and Altered Collagen Fiber Organization of the Periodontal Ligament. L. HÄKKINEN\*, S. STRASSBURGER, K.G. DANIELSON, R.V. IOZZO, and H. LARJAVA (*University of British Columbia, Vancouver, Canada; and Thomas Jefferson University, Philadelphia, PA, USA*).

**Seq#: 259** **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

### Periodontal Research – Therapy - Locally Applied Agents

**2585** Inhibition of Matrix Metalloproteinase-2, -8, and -9 Activity by Chlorhexidine. R. GENDRON\*, D. GRENIER, T. SORSA, and D. MAYRAND (*GREB, Université Laval, Québec, Canada; and University of Helsinki, Finland*).

**2586** Inhibition of Matrix Metalloproteinases of the Human Gingiva by Zinc and Copper Salts. S.R.P. LINE\*, A.P. SOUZA, and R.F. GERLACH (*Dental School of Piracicaba, University of Campinas, São Paulo, Brazil*).

**2587** Effect of Triclosan on Interferon-g Production and MHC Class II Expression in Human Gingival Fibroblasts. M. MUSTAFA\*, B. WONDIMU, M. BAKHIET, and T. MODÉER (*Department of Pediatric Dentistry, Karolinska Institutet, Huddinge, Sweden*).

**2588** Total Anti-oxidant Capacities of Some Commercially Available Mouthwashes. A. ROBERTS\*, I. GARNER, J.B. MATTHEWS, and I.L.C. CHAPPLE (*School of Dentistry, University of Birmingham, UK*).

**2589** Metronidazole Gel as an Adjunct to Subgingival Scaling—Long-term Results. M. STELZEL\* and L. FLORES-de-JACOBY (*Department of Periodontology, Philipps University, Marburg, Germany*).

**2590** Local Delivery of Antibiotics in a Calcium Sulfate Vehicle. M. THOMAS\*, R. CRITTENDEN, and E. KENNEDY (*University of Kentucky College of Dentistry, Lexington, USA*).

**2591** Using Liposomes to Target Drugs to Molecules of the Periodontal Membrane. K.W. SNOWDOWNE\*, A. VAKOULA, T. TONG, and M. KORMAN (*Department of Orthodontics and Periodontics, University of the Pacific, San Francisco, CA, USA*).

**2592** Effect of 0.5% Chlorhexidine Gel on Special Patients. C.M. PANNUTI\*, R.F.M. LOTUFO, M.C. SARAIVA, S. CAI, A.Q. FERRARO, and D. FALSI (*University of São Paulo and Casas Andre Luiz, Guarulhos, Brazil*).

**2593** Influence of an Oily Phase Mouthrinse on Supragingival Plaque Formation. J. VONHOLDT\*, J.R. GONZALES, J.M. HERRMANN, A. KLEINSTEUBER, and J. MEYLE (*Justus Liebig University, Giessen, Germany*).

**2594** Assessment of Microbial Shift Subsequent to Use of a Histatin-containing Mouthrinse. S. DIBART\*, M. WARBINGTON, N. MICKELS, C. McMANUS, J. MASSARO, P. FRIDEN, and T.E. VAN DYKE (*Boston University School of Dental Medicine, MA, USA*).

**2595** Clinical Efficacy of Avocado/Soybean Unsaponifiables on the Gingival Inflammation in Human. A. DANIEL and E. SAUVAGE\* (*Dental School, Nantes; and Pharmascience Lab., Courbevoie, France*).

**2596** Influence of Subgingival Irrigation with Soya Oil on Periodontitis. J.R. GONZALES\*, J.M. HERRMANN, A. KLEINSTEUBER, J. VONHOLDT, and J. MEYLE (*Justus Liebig Universität, Giessen, Germany*).

**2597** Experimental Basis of Therapeutic-Prophylactic Effect of Lecylin-based Medication. V. ZUBACHYK\* (*L'viv State Medical University, Ukraine*).

**2598** Cysteine and Methionine Challenge Testing to Evaluate the VSC-producing Ability of the Oral Microbiota. M. CODIPILLY\* and I. KLEINBERG (*Oral Biology and Pathology, SUNY, Stony Brook, NY, USA*).

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**Seq#: 260**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

### Periodontal Research – Therapy - Systemic Drugs

**2599** Quiescent Polymorphonuclear Leukocytes Take Up Ciprofloxacin *via* the Purine Transporter. J. WALTERS\*, R. NAKKULA, and F. ZHANG (*College of Dentistry, Ohio State University, Columbus, USA*).

**2600** Ciprofloxacin is Concentrated in Gingival Crevicular Fluid. T. CONWAY\*, M. BECK, and J. WALTERS (*Section of Periodontology, College of Dentistry, Ohio State University, Columbus, USA*).

**2601** Mechanism of Ciprofloxacin Uptake by Human Monocytes. S. BOUNDS\*, R. NAKKULA, F. ZHANG, and J. WALTERS (*Section of Periodontology, College of Dentistry, Ohio State University, Columbus, USA*).

**2602** Antibiotic Susceptibility Profile of Periodontal *Enterococcus faecalis*. D. FEIK\*, J.E. MORTENSEN, S.L. RHOADS, and T.E. RAMS (*School of Dentistry, Temple University, and St. Christopher's Hospital for Children, Philadelphia, PA; and Cooper Medical Center, Camden, NJ, USA*).

**2603** Effect of Sub-antimicrobial-dose Doxycycline (SDD) on Subgingival Flora. C.B. WALKER, J. THOMAS, S. NANGÓ\*, J. LENNON, M. BRADSHAW, and C. POWALA (*University of Florida-PDRC, Gainesville; West Virginia University, Morgantown; and CollaGenex, Newtown, PA, USA*).

**2604** Doxycycline Effects on TNF- $\alpha$  Stimulated Osteoblast-derived IL-6. S.J. WHITLOCK\*, J.B. PAYNE, S. KOKA, and C.B. HUNZEKER (*College of Dentistry, University of Nebraska MC, Lincoln, USA*).

**2605** A Chemically-modified Doxycycline (CMT-8) and Bisphosphonate Combination Therapy Inhibits Periodontal Breakdown in the Ovariectomized (OVX) Rat. A. LLAVANERAS, N.S. RAMAMURTHY\*, M.S. WOLFF, T. SORSA, and L.M. GOLUB (*University of Central Venezuela; State University of New York, Stony Brook, USA; and University of Helsinki, Finland*).

**2606** Antimicrobial Use in Periodontics in England and Wales. M. CHOUDHURY\*, I.G. NEEDLEMAN, D.G. GILLAM, and D.R. MOLES (*Eastman Dental Institute, University of London, UK*).

**2607** Intra-oral Persistence of *A. actinomycetemcomitans* in Periodontally Healthy Subjects. J.W. KLEINFELDER\*, R.F. MÜLLER, and D.E. LANGE (*Ohio State University, Columbus, USA; and University of Münster, Germany*).

**2608** Rapid Antibiotic Screening Method for *Actinobacillus actinomycetemcomitans* Using Oxygen Electrode System. K. TEZUKA\*, M. INADA, M. EZURE, T. OGAWA, S. SATO, J. ARAI, H. HASHIMOTO, H. ISHIKAWA, and K. KAMOI (*Department of Periodontology, School of Dentistry, Nippon Dental University; Daikin Indust. Ltd.; and Department of Anatomy (II), The Jikei University School of Medicine, Japan*).

**2609** Bisphosphonate Administration Inhibits Root Resorption during Experimental Tooth Movement. Y. SATO\*, K. YOKOYA, T. SASAKI, and Y. SHIBASAKI (*Departments of Orthodontics and Anatomy, School of Dentistry, Showa University, Tokyo, Japan*).

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**Seq#: 261**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

### Pharmacology, Therapeutics, & Toxicology - Fluoride

**2610** The Prevalence of Dental Fluorosis among Adolescents Residing in Communities with Various Water Fluoride Levels. R. JACKSON\*, R. ISAACS, S. KELLY, E. BRIZENDINE, G.K. STOOKEY, D. WINN, and J. BRUNELLE (*School of Dentistry, Indiana University, Indianapolis; and NIDCR/NIH, Bethesda, MD, USA*).

**2611** Relationship of Fluoride Supplement Use to Caries. R. JACKSON, R. ISAACS, S. KELLY\*, E. BRIZENDINE, G.K. STOOKEY, D. WINN, and J. BRUNELLE (*School of Dentistry, Indiana University, Indianapolis; and NIDCR/NIH, Bethesda, MD, USA*).

**2612** Effects of Caffeine and Fluoride on Proliferation of Osteoblast-like Cells. C. TURPIN\*, M. OHTA, Y. KIYOURA, and T. NAKAMOTO (*School of Dentistry, Louisiana State University Medical Center, New Orleans, USA*).

**2613** Fluctuations in Water Fluoride Levels in the Greater Houston Area. D.P. WARREN\*, K.T. NGUYEN, T.T. NGUYEN, and J.T. CHAN (*University of Texas at Houston Health Science Center, USA*).

**2614** Effects of Sodium Fluoride and Sodium Fluorosilicate on Acidity of Spring Waters. W. SHEN, S.D. TURNER, and J.T. CHAN\* (*University of Texas Dental Branch, University of Texas Health Science Center, Houston, USA*).

**2615** Calculating the Risk for Dental Fluorosis: Is This Feasible? J. KROON\* (*Faculty of Dentistry, University of Pretoria, South Africa*).

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**Seq#: 262**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

### Pharmacology, Therapeutics, & Toxicology - General Topics

**2616** Systematic Review: Oral Care for Cancer Patients Treated with Chemotherapy. J.E. CLARKSON\* and H. WORTHINGTON (*University of Dundee; Dental Health Unit, University of Manchester; and Cochrane Oral Health Group, UK*).

**2617** LongoVital<sup>®</sup> in the Treatment of Sjögren's Syndrome. A. PEDERSEN\*, N. GERNER, I. PALMVANG, and M. HØIER-MADSEN (*Dental and Ophthalmology Department, Bispebjerg Hospital, Statens Serum Institute, Copenhagen, Denmark*).

**2618** Histamine Receptor 2 May Be a Pacemaker for Neutrophil Activation. W.K. KIM-PARK\*, M.A. MOORE, and M.J. KOWOLIK (*Department of Periodontics, Indiana University School of Dentistry, Indianapolis, USA*).

**2619** Antibiotic Sensitivity of Putative Pathogens in Chinese Periodontal Patients. K.Y. ZEE\*, D.H. LEE, and L.P. SAMARANAYAKE (*Faculty of Dentistry, University of Hong Kong*).

**2620** Dentin Permeability *in vitro* after Application of Tartaric Acid Solutions. R. MONGIORGI, M.L. TEDALDI, A.

LUCCHESI\*, S. CHERSONI, and C. PRATI (*University of Bologna and University of Ferrara, Italy*).

**2621** *In vitro* Mucosal Model Predictive of Bioadhesives in the Mouth. D. PATEL\*, S. STEVENS, A. SMITH, N. GRIST, P. BARNETT, and J. SMART (*School of Pharmacy and Biomedical Sciences, University of Portsmouth; and SmithKline Beecham Consumer Healthcare, Weybridge, UK*).

**Seq#: 263**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Neuroscience/TMJ - Pain: Inflammation and Hyperalgesia**  
**(joint session with Craniofacial Biology)**

**2622** Cutaneous Hyperalgesia Following a Mild Cold Injury on Human Skin. C.R. BERGEY\*, K.C. KAJANDER, and D.A. SIMONE (*Schools of Dentistry and Medicine, University of Minnesota, Minneapolis, USA*).

**2623** Acids Evoke the Wiping Response in Frogs at Different pHs. D.T. HAMAMOTO\*, M.W. FORKEY, W.L. DAVIS, and K.C. KAJANDER (*Departments of Oral Science and Cell Biology & Neuroanatomy; and Graduate Program of Neuroscience, University of Minnesota, Minneapolis, USA*).

**2624** Evidence for Galanin in Nerve Fibers and Nerve Endings in the Gingiva of Rats. Y. KORKMAZ\*, M.A. BAUMANN, F.F. EIFINGER, and H. SCHRÖDER (*Dental School and Institute for Anatomy, University of Cologne, Germany*).

**2625** Signals That Induce Hyperexcitability in Nociceptive Neurons. J. MATHEWS\* and R. AMBRON (*Columbia University, NY, USA*).

**2626** Fluoride-resistant Acid Phosphatase Increases in Rabbit Sinus Mucosa during Sinusitis. B. HU\*, A. ROSS, E. YOUNG, J. GOLDMAN, and K.C. KAJANDER (*Departments of Oral Science, Cell Biology and Neuroanatomy, and Otolaryngology, and Graduate Program in Neuroscience, University of Minnesota, Minneapolis, USA*).

**2627** Inflammation and the Development of Allodynia after IoN Injury. R. RAO\*, T. TREJO, and L.C. ANDERSON (*Department of Oral Biology, School of Dentistry, University of Washington, Seattle, USA*).

**2628** Corticosterone Response to Temporomandibular Joint (TMJ) Inflammation and Food Intake. C.A. KERINS\*, L.L. BELLINGER, and R.P. HARPER (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**2629** Trigeminal Neuropeptide Y Levels in Adjuvant-induced Inflammation of the Rat TMJ. G. ALANIZ\*, M. SAPOZHNIKOV, L.A. DEES, and R. SPEARS (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**2630** Significance of Cytokines in Synovial Fluid of Temporomandibular Joint Disorders. N. SEGAMI\*, K. KANEYAMA, M. NISHIMURA, and T. SUZUKI (*Department of OMS, Kanazawa Medical University, Ishikawa, Japan*).

**2631** The Expression of CD34 in Human TMJ Specimens. H. YOSHIDA\*, S. FUJITA, and T. IZUKA (*Department of Oral and Maxillofacial Surgery, Faculty of Medicine, Kyoto University, Japan*).

**2632** Localization of Heat Shock Protein in Temporomandibular Joint Disorders. T. SUZUKI\*, H. HATTORI, and N. SEGAMI (*Department OMS, Kanazawa Medical University, Ishikawa, Japan*).

**2633** Increased Concentrations of Calcitonin Gene-related Peptide and Scratching Behavior in Experimentally Induced

Myositis. J. CARLESON, N. YOUSEF\*, B. APPELGREN, A. APPELGREN, A. KREICHSBERG, M. AHMED, E. THEODORSSON, S. KOPP, and T. LUNDEBERG (*Departments of Physiology and Pharmacology, Center for Clinical Oral Science, Surgery and Rehabilitation, Department of Orthopedics, and Department of Clinical Chemistry, Karolinska Institute, Stockholm, Sweden*).

**Seq#: 264**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Experimental Pathology - Oral Cancer: Apoptosis, Invasion, & Precancer**

**2634** 5-Fluorouracil Induces Apoptosis of Primary Oral Cultured Cancer Cells. D.C. TONG\*, M. POOT, D. HU, and D. ODA (*University of Washington, Seattle, USA*).

**2635** Involvement of Caspases in 5-FU-induced Apoptosis in Cancer Cells. T. OHTANI\*, M. HATORI, M. OHASHI, R. KAMIJO, and M. NAGUMO (*Showa University, Tokyo, Japan*).

**2636** Smokeless Tobacco, Apoptosis, and Oral Cancer Formation. K. NELSON\*, H. JIANG, H.F. THOMAS, W.W. LONEY, and J. CHEN (*Department of Pediatric Dentistry, University of Texas Health Science Center at San Antonio, USA*).

**2637** SCC-25 Cells Mediate Type I Collagen Degradation: Modulation by Integrins. H. DEASON\*, S. AZNAVOORIAN, L.J. WINDSOR, and J.A. ENGLER (*Department of Biochemistry and Molecular Genetics, University of Alabama at Birmingham, USA*).

**2638** mRNA Expression of Matrix Metalloproteinases and their Inhibitors by Oral Cancer Cell Lines. M.D. ROBERTS\*, J.A. ENGLER, and L.J. WINDSOR (*Department of Biochemistry and Molecular Genetics, University of Alabama at Birmingham, USA*).

**2639** Expression of Matrix Metalloproteinases and their Inhibitors by Temporomandibular Joint Cells. M.D. WILSON\*, G.J. HARBER, S. AZNAVOORIAN, P.J. LOUIS, and L.J. WINDSOR (*Department of Biochemistry and Molecular Genetics, University of Alabama at Birmingham, USA*).

**2640** Matrix-metalloproteinase-induced Degradation of Type I Collagen by Synovial Fibroblasts. J.R. GLASS\*, S. AZNAVOORIAN, L.J. WINDSOR, and J.A. ENGLER (*Department of Biochemistry and Molecular Genetics, University of Alabama at Birmingham, USA*).

**2641** Hydrogen Peroxide: A Promoter in Cancer Development. T.C. LOI\*, B.C. BOYD, T.S. MANG, and C. LIEBOW (*School of Dental Medicine, SUNY at Buffalo, USA*).

**2642** Evidence for Scatter-factor-inducing Factor (SF-IF) Activity in Benign and Malignant Oral Epithelial Cells. P.M. SPEIGHT\* and D.F. CAMP (*Eastman Dental Institute, University College London, UK*).

**2643** Immunohistochemical Analysis of CAAFI in Oral Squamous Cell Carcinoma. M. TSUCHIMOCCHI\*, M. KATAGIRI, M. HARADA, A. KAMETA, T. KAWASE, and J. HITOMI (*Nippon Dental University School of Dentistry at Niigata and Niigata University, Japan*).

**2644** Actinic Cheilitis: A Review of 205 Cases. T. PILLION\*, G. KAUGARS, L. ABBEY, J. BURNS, D. PAGE, and J. SVIRSKY (*Virginia Commonwealth University/Medical College of Virginia, Richmond, USA*).

**2645** Rb is Required for Telomerase Downregulation in Oral Carcinoma Lines. D.C. NGUYEN\* and D.L. CROWE (*Center for Craniofacial Molecular Biology, University of Southern*

California, Los Angeles, USA). (1997 AADR Student Fellowship Recipient)

**2646** MMPs and Tumor Markers Detected *in vivo* in Human Oral Cancer Tissues. C.M. DONALD\*, G.J. HARBER, S.A. SHANEYFELT, and M.K. BODDEN (*Department of Restorative Dentistry, Oral Cancer Research Center, University of Alabama, Birmingham, USA*).

**2647** Expression of MMP-2 and -9, and TIMP-1 and -2 with Regard to Metastasis of Oral Squamous Cell Carcinomas. S.-D. HONG, J.-I. LEE\*, S.-P. HONG, and C.-Y. LIM (*Department of Oral Pathology, College of Dentistry, Seoul National University, Korea*).

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**Seq#: 265**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Craniofacial Biology - Craniofacial Growth and Morphology**

**2648** Growth and Development of the Body of C3 as a Timer of Adolescent Growth Spurt. J.F. REUTTER\*, K.W. SNOWDOWNE, S.A. DUGONI, and B. EMRICH (*Department of Orthodontics, University of the Pacific, San Francisco, CA, USA*).

**2649** Growth Changes of Craniofacial Skeleton of Normal Occlusion from 8 to 12 Years of Age. S.-Y. CHUANG\* and C.-L. LIN (*School of Dentistry, Kaohsiung Medical College; and Institute of Biomedical Engineering, National Cheng Kung University, Taiwan, ROC*).

**2650** Growth Displacements of Orbitale in Normal Subjects between 8.5 and 15.5 Years. S.L. HOROWITZ\*, S. BAUMRIND, K. VARGERVIK, and Y. BEN-BASSAT (*University of Medicine and Dentistry of New Jersey, Newark; University of the Pacific, San Francisco, CA, USA; and Hebrew University, Jerusalem, Israel*).

**2651** On the Growth Rotation of the Human Mandible. E.D. REKOW\*, S. BAUMRIND, R.L. BOYD, and Y. BEN-BASSAT (*University of Medicine and Dentistry of New Jersey, Newark; University of the Pacific, San Francisco, CA, USA; and Hebrew University, Jerusalem, Israel*).

**2652** Maturation Comparisons in Children. H.T. LOEVY\*, L. TASCHINI, and A.F. GOLDBERG (*University of Illinois at Chicago; VA Medical Center, North Chicago; and Northwestern University School of Dentistry, Chicago, IL, USA*).

**2653** Multivariate Longitudinal Analysis of Untreated Class II/1 Malocclusion. D. GESCH\*, A. HASUND, and S. HENSEL (*Department of Orthodontics, School of Dentistry, University of Greifswald; and University of Hamburg, Germany*).

**2654** Pacifier Sucking Deforms the Palates of Young Children. J. VARRELA\*, T. KARHU-LAHTI, K. ISOTUPA, and P. ALANEN (*Institute of Dentistry, University of Turku, Finland*).

**2655** Secular Changes in Craniofacial Measurements over a 60-year Span. B.H. BROADBENT, Jr., M. GOHN\*, and M. CHANG (*Bolton-Brush Growth Study Center, School of Dentistry, Case Western Reserve University, Cleveland, OH, USA*).

**2656** Dental, Skeletal, and Functional Attributes of Class II Subdivision Malocclusion. L.S. LANCASTER, F.J. SOBKOWSKI, D.J. FERGUSON, and D.G. GEORGAKOPOULOU\* (*Center for Advancement of Dental Education, St. Louis University, MO, USA*).

**2657** Cephalometric Correlates of Increased Chin Prominence. S. CARLSON\*, S. BAUMRIND, T.-M. XU, and R.L. BOYD

(*University of the Pacific and University of California, San Francisco, CA, USA; and Beijing Medical University, China*).

**2658** Craniofacial Morphology in Adults with Different Occlusions. H.-P. CHANG\* (*Department of Orthodontics, School of Dentistry, and Graduate Institute of Dental Science, Kaohsiung Medical College, Taiwan*).

**2659** Objective Mean Form Computation via Distance Difference Minimization. A.S. PUBLICO\*, M.E. McALARNEY, and G. DASGUPTA (*Columbia University, New York, NY, USA*).

**2660** Determining Correlation Between Children's Heights and Weights with Permanent Teeth Eruption. M. MOSLEMI\* (*Faculty of Dentistry, Shahid Beheshti University, Eveen, Tehran, Iran*).

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**Seq#: 266**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Craniofacial Biology - Development of the Temporomandibular Joint**

**2661** EGF Effects on Fetal Rabbit Condyle and Isolated Condylar Fibroblasts. T. TSUBAI, Y. HIGASHI, S. KAHLON\*, and J.E. SCOTT (*Faculty of Dentistry, University of Manitoba, Winnipeg, Canada; and Osaka Dental University, Japan*).

**2662** FGF-2 Stimulation of Condylar Cartilage Proliferation. M.A. FUENTES\* and R.J. HINTON (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**2663** Temporal Effects of Estrogen on Proteoglycan Content in Rat Mandibular Condyles. B. WAKEFIELD\*, L. BOWEN, R.P. HARPER, and B.S. WONG (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**2664** Condylar Hypertrophic Chondroblasts Decrease with Increasing Estrogen Concentration. R.P. HARPER\*, M.C. NG, and B.S. WONG (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**2665** Estrogen Decreases Proteoglycan Content in Rat Mandibular Condylar Cartilage. B.S. WONG\*, M.C. NG, L.L. BELLINGER, and R.P. HARPER (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**2666** Fibronectin and its Fragments Modulate Matrix Metalloproteinase and Inhibitor Expression in TMJ Disc Cells. B. HU, Y.L. KAPILA, and S. KAPILA\* (*Departments of Growth and Development and Stomatology, University of California, San Francisco, USA*).

**2667** Withdrawn

**2668** Alternate NC1 Domains in Human Type XII Collagen. A.D. HOLLOWELL\*, R.W. TAYLOR, and I. NISHIMURA (*School of Dentistry, University of Alabama, Birmingham; and School of Dentistry, UCLA, Los Angeles, CA, USA*).

**2669** Biglycan and Decorin in Temporomandibular Joint Disc of Growing Rats. M. KUWABARA\*, M. HAMAYA, Y. SAKAKURA, P.G. SCOTT, C.M. DODD, Y. SASANO, T. YAJIMA, and I. MIZOGUCHI (*Department of Orthodontics and Oral Anatomy, Health Sciences University of Hokkaido, Japan; Department of Biochemistry, University of Alberta, Canada; and Department of Oral Anatomy, Tohoku University, Japan*).

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**Seq#: 267**      **Friday, March 12, 3:45 pm - 5:00 pm**  
**Poster Session, Exhibit Hall B&C**

**Craniofacial Biology - Imaging and Craniometrics**

**2670** Subject Movement between Stereo X-ray Films: Its Implications to 3D Measurement. S. SEFIDPOUR\*, R. GALLAGHER, R. JOHE, G.W. MARSHALL, E.D. REKOW, and S. BAUMRIND (*University of the Pacific, San Francisco, CA; University of California, San Francisco; and University of Medicine and Dentistry of New Jersey, Newark, USA*).

**2671** Merging Data on Craniofacial Morphology from Different 3D Coordinate Maps. R. GALLAGHER\*, S. SEFIDPOUR, G.W. MARSHALL, S. CURRY, E.D. REKOW, and S. BAUMRIND (*University of the Pacific and University of California, San Francisco; and University of Medicine and Dentistry of New Jersey, Newark, USA*).

**2672** 3D Comparison Tracing and Direct Digitization of the Bolton Standards. J. KIM\*, D. DEAN, K. SUBRAMANYAN, B.H. BROADBENT, Jr., and M. HANS (*Case Western Reserve University, Cleveland, OH, USA*).

**2673** A Comparison of Digitized, Scanned, and Manual Cephalometric Techniques for Accuracy and Speed. C.A. WILKINSON, P.G. SOTIROPOULOS, D.J. FERGUSON, and F.G. VIGNOLO\* (*Center for Advancement of Dental Education, St. Louis University, MO, USA*).

**2674** Computer-automated Detection of Cephalometric Landmarks. A. WYMAN\*, D. DEAN, K. SUBRAMANYAN, M. HANS, and B.H. BROADBENT, Jr. (*Case Western Reserve University, Cleveland, OH, USA*).

**2675** Estimation of Bone Mass Properties by CT in Pig Mandibles. F. ZHANG\*, G.E.J. LANGENBACH, A.G. HANNAM, and S.W. HERRING (*University of British Columbia, Vancouver, Canada; and University of Washington, Seattle, USA*).

**2676** 3D Craniofacial Change in Sixteen Female Bolton Faces: Preliminary Report. J.M. PALOMO\*, D. DEAN, B.H. BROADBENT, Jr., and M. HANS (*Case Western Reserve University Schools of Dentistry and Medicine, Cleveland, OH, USA*).

## SATURDAY (Morning)

### PLENARY SESSION #3

Thursday, 8:15 to 9:00 am Ballroom A

"Genes and Genomes:  
A Revolution in Medicine of the 21st Century"

**LEROY HOOD**  
(University of Washington, Seattle, WA)

**Seq#: 268** Saturday, 9:00 am – 11:00 am  
Symposium, Ballroom A

**IADR - Dental and Craniofacial Research in the Post-Genome-Project Era**

**Chairperson: C. Damsky**

**2677** 9:00 Opening Comments.

9:05 Integrins, Growth Factors, and Tumor Suppressors Collaborate in Signaling from the Extracellular Matrix. K. YAMADA (*NIDCR/NIH, Bethesda, MD, USA*).

9:40 From Head to Toe: Conservation of Molecular Signals Regulating Morphogenesis of the Craniofacial Complex. J. HELMS (*University of California, San Francisco, USA*).

10:15 Assessing Susceptibility to Chronic Diseases and Disorders: A Key to Developing Future Therapeutics? K. KORNMAN (*Medical Science Systems, Inc., San Antonio, TX, USA*).

10:50 Discussion.

**Seq#: 269** Saturday, March 13, 9:00 am - 11:00 am  
Poster Discussion Session, Room 13

**Behavioral Sciences & Health Services Research - Insurance and Cost**

**Chairpersons: A. Antczak-Bouckoms and K. Atchison**

9:00 Poster Viewing Time

**2678** 9:30 Do You Have a Dentist to Go to if You Need One? E. SKARET\*, P. MILGROM, and D. GREMBOWSKI (*Center for Odontophobia, University of Bergen, Norway; and School of Dentistry, University of Washington, Seattle, USA*).

**2679** 9:38 The Effect of Reimbursement on Use of Fluoride Varnish among General Dentists in Washington State. L. FISET, D. GREMBOWSKI\*, M.A. del AGUILA, and M.H. ANDERSON (*School of Dentistry, University of Washington, Seattle; and Washington Dental Service, Seattle, USA*).

**2680** 9:46 A Community Strategy for Child Dental Services under Medicaid. P. MILGROM\*, P. HUJOEL, and D. GREMBOWSKI (*University of Washington, Seattle, USA*).

**2681** 9:54 Dental Caries Prevalence in the Primary Dentition of 6-7-year-old Children with Life-long Dental Insurance. A.I. ISMAIL\* and W. SOHN (*Schools of Dentistry and Public Health, University of Michigan, Ann Arbor, USA*).

**2682** 10:02 Dental Services, Costs, and Factors Associated with Hospitalization for Medicaid. S. GRIFFIN\*, B.F. GOOCH, E. BELTRÁN, and J. SUTHERLAND (*Centers for Disease Control, Atlanta, GA; and Louisiana Office of Public Health, New Orleans, USA*).

**2683** 10:10 A Cost Analysis for General Anesthesia vs. Conscious Sedation in Children. J.Y. LEE\*, W.F. VANN, Jr., and M.W. ROBERTS (*Department of Pediatric Dentistry and the Cecil G. Sheps Center for Health Services Research, University of North Carolina, Chapel Hill, USA*).

**2684** 10:18 Treatment Costs of First Molars with and without Sealants. J.A. WEINTRAUB\*, S.C. STEARNS, R.G. ROZIER, and C.C. HUANG (*University of California, San Francisco; and University of North Carolina, Chapel Hill, USA*).

**2685** 10:26 Prescription Drug Utilization and Costs among TMD Cases and Controls. B.A. WHITE\* and C. CUNNINGHAM (*Kaiser Permanente Center for Health Research, Portland, OR, USA*).

10:34 Poster Discussion Time

**Seq#: 270** Saturday, March 13, 9:00 am - 11:00 am  
Oral Session, Room 18

**Cariology Research - Risk Assessment, Factors**

**Chairpersons: C. Werner and L. Stösser**

**2686** 9:00 Caries Risk Assessment: A Prediction Based on Two Different Models. L. STÖSSER\*, R. HEINRICH-WELTZIEN, S. KNEIST, T. FISCHER, and K. ILLGEN



(Department of Preventive Dentistry, University of Jena, Germany).

**2687** 9:15 Caries Risk Related to Systemic Disease or Medication Status. C.W. PADDOCK\*, D.F. MURCHISON, and J.P. FANCHER (Wilford Hall Medical Center, Lackland AFB, Texas, USA).

**2688** 9:30 Survival Times and Predictive Caries Intensities of Permanent Teeth in European Adolescents. M. LARMAS\*, A. EKMAN, H. FORSBERG, C. OULIS, P. GUGGENBÜHL, R. ROSENDAHL, U. SCHLAGENHAUF, and H. HAUSEN (*Eudent Project, University of Oulu, Finland*).

**2689** 9:45 The Prevalence of Coronal and Root Caries in Patients with End-stage Renal Disease Undergoing Dialysis. C.W. WERNER\*, M.J. SAUNDERS, J. CORNELL, T. SAAD, A.C. PEREIRA, G. MARSH, and J. CORNELL (GRECC, Audie L. Murphy VA Hospital; UNICAMP-Piracicaba Dental School, Brazil; and Departments of Dental Diagnostic Science & Medicine, UTHSCSA, San Antonio, TX, USA).

**2690** 10:00 Prevalence of Dental Caries in a Low-income Population. W. SEIBERT\*, T. BOLDEN, E. HINES, and C. FARMER (Meharry Medical College, Nashville, TN, USA).

**2691** 10:15 Schoolchildren's Caries and Gingivitis in Porto Alegre, in 1975 and 1996. M. MALTZ\*, A.B. SCHOENARDIE, and J.T. CARVALHO (Faculty of Odontology, UFRGS, Porto Alegre, Brazil).

**2692** 10:30 Prevalence of Dental Caries in Australian Aboriginal Children. W.K. SEOW\*, A. AMARATUNGE, R. SIM, and A. WAN (University of Queensland and Aboriginal Health Service, Brisbane, Australia).

**2693** 10:45 Comparison of Microflora in Whole Saliva of Minority Subjects. E.O. KUYINU\*, H.A.B. LINKE, O.O. ONIMISI, M.M. IMAM, A.O. IHIONKHAN, A.R. LeGEROS, and R.Z. LeGEROS (New York University College of Dentistry, New York, USA).

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**Seq#: 271** **Saturday, March 13, 9:00 am - 11:00 am**  
**Oral Prosthodontics, Room 12**

### **Craniofacial Biology - Early Class II Treatment**

**Chairpersons: J. Ghafari and S. Efstratiadis**

**2694** 9:00 Factors Affecting Cost and Effectiveness of Initial Phase of Treatment of Class II Malocclusion. S.P. MCGORRAY\*, T.T. WHEELER, F.L. CASTHELY, C. DOLCE, M. TAYLOR, and G.J. KING (Departments of Orthodontics and Statistics, University of Florida, Gainesville, USA).

**2695** 9:15 Compliance and Class II Correction with Early Treatment. T.T. WHEELER, S.P. MCGORRAY, G.J. KING, C. DOLCE, M. TAYLOR, and D. FERRER\* (University of Florida Department of Orthodontics, Gainesville, USA).

**2696** 9:30 Anteroposterior Dental Changes during Early Class II Treatment. T.T. WHEELER, S.P. MCGORRAY, G.J. KING, C. DOLCE, and M. TAYLOR\* (University of Florida Department of Orthodontics, Gainesville, USA).

**2697** 9:45 Effect of Early Class II Treatment on Incidence of Incisal Injury. M. DOMONDON\*, T.T. WHEELER, S.P. MCGORRAY, G.J. KING, C. DOLCE, and M. TAYLOR (University of Florida Department of Orthodontics, Gainesville, USA).

**2698** 10:00 Success and Failure of Early Class II Treatment. C. TULLOCH\*, L. ROGERS, and C.L. PHILLIPS (University of North Carolina, Chapel Hill, USA).

**2699** 10:15 Relation between Occlusal and Cephalometric Changes in the Treatment of Distocclusion. J. GHAFARI\*, S. EFSTRATIADIS, F.S. SHOFRER, D. MARKOWITZ, U. JACOBSSON-HUNT, S. BAUMRIND, and L.L. LASTER (University of Pennsylvania, Philadelphia; Columbia University, New York; and University of the Pacific, San Francisco, CA, USA).

**2700** 10:30 Profile and Mandibular Changes Associated with Two Modalities of Class II Treatment. S. EFSTRATIADIS\*, S. BAUMRIND, and J. GHAFARI (Columbia University, New York; University of the Pacific, San Francisco, CA; and University of Pennsylvania, Philadelphia, USA).

**2701** 10:45 Effect of Molar Rotation on Arch Length. J.L. MCDONALD\*, D. MARKOWITZ, F.S. SHOFRER, L.L. LASTER, and J. GHAFARI (University of Pennsylvania, Philadelphia, USA).

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**Seq#: 272** **Saturday, March 13, 9:00 am - 11:00 am**  
**Oral Session, Ballroom B**

### **Dental Materials - Microleakage/Amalgam Bonding**

**Chairpersons: R. Vieira and M. Winkler**

**2702** 9:00 Marginal Leakage of Resin-modified Glass-ionomer and Compomer Restorations. R.S. VIEIRA\*, I.C.S. ALMEIDA, J. OLIVEIRA, M.J.C. ROCHA, and M. CALVO (Department of Pediatric Dentistry, Federal University of Santa Catarina, Brazil).

**2703** 9:15 Relationship between Light-curing Method for Reducing Stress and C-factor. T. YOSHIKAWA\*, M.F. BURROW, and J. TAGAMI (Tokyo Medical and Dental University, Japan; and University of Melbourne, Australia).

**2704** 9:30 Microleakage of Various Classes of Composites/Compomers in Class V Restorations. J.C. MEIERS\* and L.C. CAMPONELLA (University of Connecticut School of Dental Medicine, Farmington, USA).

**2705** 9:45 Marginal Quality of Dentin Adhesives/Composites in Mixed Class V Cavities. J. MANHART\*, K. WEBER, A. MEHL, and R. HICKEL (Department of Restorative Dentistry, Dental School of the Ludwig-Maximilians-University, Munich, Germany).

**2706** 10:00 Effect of One-year Water Storage on the Effectiveness of Dentin Adhesives in Class V Composite Resin Restorations. U. BLUNCK\* and J.-F. ROULET (Department of Operative Dentistry, Endodontics and Preventive Dentistry, Charité, Humboldt University of Berlin, Germany).

**2707** 10:15 Cavity Adaptation of Resin Composite in Wedge-shaped Defect. C. TANI\*, A. MANABE, K. ITOH, H. HISAMITSU, and S. WAKUMOTO (Department of Operative Dentistry, School of Dentistry, Showa University, Tokyo, Japan).

**2708** 10:30 The Effect of Adhesive Thickness on the Shear Bond Strength of Bonded Complex Amalgam Restorations. R.I. VANCE\*, R.D. DAVIS, and J.D. OVERTON (Keesler Medical Center, Keesler AFB, MS, USA).

**2709** 10:45 Amalgam Bonding: Chemical vs. Light vs. Dual Curing. M.M. WINKLER\*, B. RHODES, and B.K. MOORE (LSU School of Dentistry, New Orleans; and School of Dentistry, Indiana University, Indianapolis, USA).

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**Seq#: 273** **Saturday, March 13, 9:00 am - 11:00 am**  
**Oral Session, Room 3**

**Dental Materials - Clinical Trials – Ceramic Restorations, Amalgam****Chairpersons: T. Berry and P. Pospiech**

**2710** 9:00 Time-and-Motion Study on Class II Ceramic Inlays. C.M. KREULEN\*, H. MOSCOVICH, N.H.J. CREUGERS, and K.A. DANSEN (*College of Dental Science, University of Nijmegen, The Netherlands*).

**2711** 9:15 Clinical Performance of CAD/CIM-generated Ceramic Onlays. D.J. FASBINDER\*, K. LAMPE, J.B. DENNISON, M.C. PETERS, and K. NEMATOLLAHI (*School of Dentistry, University of Michigan, Ann Arbor, USA; and University of Zürich Dental School, Switzerland*).

**2712** 9:30 Three-month Assessment of an Antimicrobial Root Sealant. A. BAYSAN\*, E. LYNCH, V. JOVANOVSKI, S. BRAILSFORD, L. ZOU, and D. BEIGHTON (*Saint Bartholomew's and Royal London School of Medicine and Dentistry, QMW; and GKT Dental Institute, UK*).

**2713** 9:45 Clinical Evaluation of Extensive Dentin/Enamel-bonded All-ceramic Onlays and Onlay Crowns. J.W.V. van DIJKEN\*, L. HASSELROTH, A. ÖRMIN, and A.-L. OLOFSSON (*Institute of Oral Biology, Dental School Umeå; and FTV Visby, Sweden*).

**2714** 10:00 Clinical Evaluation of Posterior Crowns and Bridges of Empress 2: Preliminary Results after One Year. P. POSPIECH\*, S. KISTLER, C. FRASCH, and P. RAMMELSBURG (*Department of Prosthodontics, Ludwig-Maximilians-University of Munich, Germany*).

**2715** 10:15 Clinical Evaluation of a Direct Restorative Alloy—A Two-year Report. M. SUZUKI, L.W. STOCKTON\*, and D. DAVIDSON (*University of Manitoba, Winnipeg, Canada*).

**2716** 10:30 Three-year Evaluation of Amalgambond Plus and Pin-retained Amalgam Restorations. J.B. SUMMITT, J.O. BURGESS, T. BERRY\*, J.W. OSBORNE, J.W. ROBBINS, and C. HAVEMAN (*University of Texas Health Science Center at San Antonio; Louisiana State University Medical Center; and University of Colorado Health Science Center, USA*).

**2717** 10:45 Retrospective Study of Bonded Amalgam Restorations. W.S. EAKLE\* and M. STANINEC (*University of California, San Francisco, USA*).

**Seq#: 274** **Saturday, March 13, 9:00 am - 11:00 am**  
**Oral Session, Room A-5**

**Dental Materials – Composite Bond Strength: Compomer Bonding****Chairpersons: J. Powers and P. Pereira**

**2718** 9:00 Bond Strength of Compomers to Human Dentin Using Acidic Primers. J.M. POWERS\*, C. YOU, and W.H. TATE (*Houston Biomaterials Research Center, University of Texas, Houston Dental Branch, USA*).

**2719** 9:15 Bond Strength of Compomers with Acidic Primers to Human Enamel. D. LI\* and J.M. POWERS (*Houston Biomaterials Research Center, University of Texas at Houston Dental Branch, USA*).

**2720** 9:30 Bond Strength of Compomers to Human Enamel Using Acidic Primers. W.H. TATE\*, C. YOU, and J.M. POWERS (*Houston Biomaterials Research Center, University of Texas, Houston Dental Branch, USA*).

**2721** 9:45 Bond Strength of Polyacid Modified Resins Using a New One-step Adhesive System. H. OBERLÄNDER\*,

K.-H. FRIEDL, G. SCHMALZ, R. VASILEVA, and K.-A. HILLER (*University of Regensburg, Germany; and University of Sofia, Bulgaria*).

**2722** 10:00 Bond Strengths of Resin-modified Glass Ionomers to Caries-affected Dentin. P.N.R. PEREIRA\*, S. YAMAGUCHI, M. NAKAJIMA, and J. TAGAMI (*Tokyo Medical and Dental University, Japan*).

**2723** 10:15 *In vitro* Tensile Bond Strength of Compomer to Cervical Abrasion. T. KIMISHIMA\*, H. ENOMOTO, N. SHIBAOKA, A. SHIROTA, Y. NARA, H. TANAKA, and I.L. DOGON (*Nippon Dental University, Tokyo, Japan; and Harvard School of Dental Medicine-Forsyth Dental Center, Boston, MA, USA*).

**2724** 10:30 Regional Variations in Dentin Bond Strength of Hybrid Materials. H.C.P. BELTRÃO\*, R.M. CARVALHO, M. YOSHIYAMA, and D.H. PASHLEY (*UF Ceará, FOB USP, Brazil; and Medical College of Georgia, Augusta, USA*).

**2725** 10:45 Shear Strengths of a Compomer Adhesive to Enamel and Dentin. M.H. ISSA\* and D.C. WATTS (*University of Manchester Dental School, UK*).

**Seq#: 275** **Saturday, March 13, 9:00 am - 11:00 am**  
**Oral Session, Room A-4**

**Dental Materials - Impression and Denture Polymeric Materials****Chairpersons: J. Vaidyanathan and S. Parker**

**2726** 9:00 Color Stability of Hard Chair-side Reline Materials. A.L. VAN DE VOORDE\*, D.F. MURCHISON, C.B. HERMESCH, D. LI, and J.M. POWERS (*Wilford Hall Medical Center; University of Texas Health Science Center, San Antonio; and University of Texas Houston Dental Branch, USA*).

**2727** 9:15 Mechanical Properties of Silicone-based Soft Lining Materials. A. KRAFT\*, T. VÖLKNER, B. WÖSTMANN, and P. FERGER (*Department of Prosthodontics, Justus-Liebig-University, Giessen, Germany*).

**2728** 9:30 Formulation of an Experimental Tissue Conditioner. S. PARKER\*, I.M. SAMPLE, M.P. PATEL, and M. BRADEN (*IRC in Biomedical Materials; and St. Bartholomew's and The Royal London School of Medicine and Dentistry, QMW, London, UK*).

**2729** 9:45 Viscoelastic Properties and Cross-linking of Experimental Denture Soft-liners. S.N. NAZHAT\*, S. PARKER, P.D. RIGGS, and M. BRADEN (*Biomaterials in Relation to Dentistry, IRC in Biomedical Materials, QMW, University of London, UK*).

**2730** 10:00 Halogenated Methacrylates as X-ray Opaque Denture Base Acrylics. K.W.M. DAVY\* and M. BRADEN (*Department of Biomaterials in Relation to Dentistry, St. Bartholomew's and Royal London School of Medicine and Dentistry, University of London, UK*).

**2731** 10:15 Hydrostatic Properties of Non-aqueous Elastomeric Impression Materials. M. WILDENHAIN\*, P. POSPIECH, P. RAMMELSBURG, and W. GERNET (*Department of Prosthodontics, University of Munich, Germany*).

**2732** 10:30 Accuracy of Impressions in the Wet Environment of a Sulcus Fluid Flow Model. B. WÖSTMANN\*, A. KONIARIS, and P. FERGER (*Department of Prosthodontics, Justus-Liebig-University of Giessen, Germany*).

**2733** 10:45 Creep, Relaxation, and Dynamic Properties of Provisional Crown and Bridge Materials. J. VAIDYANATHAN\*, Z. CHERIAN, and T.K. VAIDYANATHAN (*New Jersey Dental*

School, University of Medicine and Dentistry of New Jersey, Newark, USA).

**Seq#: 276 Saturday, March 13, 9:00 am - 11:00 am  
Oral Session, Room A-3**

### Dental Materials - Composite Wear

**Chairpersons: S. Suzuki and L. Knobloch**

**2734** 9:00 *In vitro* Wear of Condensable Resin Composite Restoratives. S. SUZUKI\* (University of Alabama at Birmingham School of Dentistry, USA).

**2735** 9:15 Wear Resistance of Posterior Condensable Composite Resins. L. KNOBLOCH\*, R. KERBY, and R. SEGHI (College of Dentistry, Ohio State University, Columbus, USA).

**2736** 9:30 Wear Behavior of Flowable and Condensable Composite Resins. H.M. DANG\* and D.C. SARRETT (School of Dentistry, Virginia Commonwealth University, Richmond, USA).

**2737** 9:45 *In vitro* Wear Assessment of High-density Composite Resins. W.W. BARKMEIER\*, T.M. WILWERDING, M.A. LATTA, and S.M. BLAKE (Creighton University, Omaha, NE, USA).

**2738** 10:00 *In vitro* Wear Resistance of Resin-modified Glass Ionomers and Compomers. S.L. ROLLAND\* and J.F. McCABE (University of Newcastle, UK).

**2739** 10:15 Lapping Abrasion Behavior of Condensable Glass Ionomers. M. PELKA\*, J. SINDEL, and A. PETSCHLIT (Poliklinik of Operative Dentistry, University of Erlangen-Nuremberg, Germany).

**2740** 10:30 Generalized Occlusal Wear of Compomers, a Hybrid Glass Ionomer, and a Composite Resin. J.B. CHAIN\*, M.C. CHAIN, S. SUZUKI, and W. LACEFIELD (CAPES—UFSC, Brazil; and University of Alabama at Birmingham, USA).

**2741** 10:45 The Effect of Colloidal Silica Surface Treatment on Composite Wear. T.J. HILTON\*, J.L. FERRACANE, and J.R. CONDON (United States Air Force Dental Investigation Service, San Antonio, TX; and OHSU School of Dentistry, Portland, OR, USA).

**Seq#: 277 Saturday, March 13, 9:00 am - 11:00 am  
Oral Session, Room A-2**

### Dental Materials - Orthodontic Materials, Endodontic Materials

**Chairpersons: R. Staley and R. Kusy**

**2742** 9:00 Force-extension Characteristics of LATEX-FREE Orthodontic Elastics. G. NEUMANN\*, H. LOIDL, R. KRETSCHMER, and E.A. HOLTGRAVE (Department of Orthodontics, School of Dental Medicine, University Hospital Benjamin Franklin, Freie Universität Berlin, Germany).

**2743** 9:15 Differences in Material Properties of Latex and Non-latex Orthodontic Elastics. K.A. RUSSELL\*, A.D. MILNE, R.A. KHANNA, and J.M. LEE (Dalhousie University, Halifax, Nova Scotia, Canada).

**2744** 9:30 The Effect of Fluoride Varnish on Enamel Demineralization around Brackets. M. TODD, R. STALEY\*, M.J. KANELLIS, K.J. DONLY, and J.S. WEFEL (College of Dentistry, University of Iowa, Iowa City, USA).

**2745** 9:45 Variation in Flexural Properties of Round and Rectangular Composite Archwires. D.W. FALLIS\* and R.P. KUSY (Dental Research Center and Orthodontics Department, University of North Carolina, Chapel Hill, USA).

**2746** 10:00 *In vitro* Evaluation of Calcium Phosphate Cement Root Canal Filler/Sealer. A. CHERNG\*, L.C. CHOW, and S. TAKAGI (American Dental Association Health Foundation, Paffenbarger Research Center, National Institute of Standards and Technology, Gaithersburg, MD, USA).

**2747** 10:15 SEM Evaluation of Different Endodontic Irrigants. G. GAMBARINI\* ("La Sapienza", Dental School, University of Rome, Italy).

**2748** 10:30 Tissue Toxicity of Three Endodontic Sealers. A. PITTARI\*, G. GAMBARINI, M. DE LUCA, and S. DE LUCA ("La Sapienza", Dental School, University of Rome, Italy).

10:45 Discussion

**Seq#: 278 Saturday, March 13, 9:00 am - 11:00 am  
Oral Session, Room 2**

### Education Research - IT and Assessment

**Chairpersons: R. Bedi and D. Pollard**

**2749** 9:00 Feasibility Assessment of Undertaking an Electronic Survey of Dental Practitioners. R. MUHUMUZA, D.R. MOLES, and R. BEDI\* (Transcultural Oral Health, Eastman Dental Institute, University of London, UK).

**2750** 9:15 Delphi Study to Identify Core Competencies in Geriatric Dentistry. D.S. LAUER\* and T.A. DOLAN (University of Florida, Gainesville, USA).

**2751** 9:30 Comparisons between Computer-aided Programs for Teaching Amalgam-carving Procedures. B.P. NG\*, B.L.W. WONG, S.A. CLARK, and J. TIE (Faculty of Dentistry and Department of Information Science, University of Otago, Dunedin, New Zealand).

**2752** 9:45 Qualitative Study of Knowledge Dissemination among Oral Surgeons and Orthodontists. A.C. LARME\* (University of Texas Health Science Center at San Antonio, USA).

**2753** 10:00 Behaviors of French Dental Practitioners Relating to Continuing Education. A. MICHELET, A.M. NIHTILA\*, P. HESCOT, D. BOURGEOIS, and J. DOURY (University Lyon I; and French Dental Association, Paris, France).

**2754** 10:15 Efficacy of Schoolchildren's Oral Health Education in China. H. DENG\*, S.G. ZHENG, M.E. BUTLER, and A.R. VOLPE (Beijing Medical University, China; and Colgate-Palmolive, Piscataway, NJ, USA).

**2755** 10:30 Stress Reaction of Dental Students to School Closure. R. CHUANG\*, A. KOERBER, W. AYER, and C. WILSON (Northwestern University Dental School, Chicago, IL, USA).

**2756** 10:45 Evaluation of Computer-assisted Continuing Education in Oral Ulceration. D. POLLARD\*, V. KAJAN, S.R. PORTER, and C. SCULLY (Eastman Dental Institute for Oral Health Care Sciences, University of London, UK).

**Seq#: 279 Saturday, March 13, 9:00 am - 11:00 am  
Oral Session, Room 15**

### Experimental Pathology - Oral Cancer and Carcinogenesis

**Chairpersons: I. Mackenzie and J. Guttenplan**

**2757** 9:00 Mechanisms of Inhibition of O<sup>6</sup>-methylguanine DNA Repair by Smokeless Tobacco. W. KOSINSKA and J.B. GUTTENPLAN\* (Division of Basic Sciences, NYU Dental

College; and Department of Environmental Medicine, NYU Medical School, New York, NY, USA).

**2758** 9:15 Verrucous Hyperplasias/Carcinomas in Multiple Members of a Family. J.B. EPSTEIN\*, K. BEREAN, C.F. POH, M.P. ROSIN, and L. ZHANG (*Dentistry, University of British Columbia; and School of Kinesiology, Simon Fraser University, Canada*).

**2759** 9:30 Regulation of PG Synthase by BNE on Oral Carcinoma Cells. C.Y. YANG\*, C.L. MENG, K.L. SHEN, P. van der BIJL, and H.K. LEE (*Departments of Dentistry, Surgery, and Pharmacology, Tri-Serv. General Hospital, National Defense Medical Center, Taiwan, ROC; and Department of Oral Medicine & Periodontology, University of Stellenbosch, South Africa*).

**2760** 9:45 Ornithine Decarboxylase Antizyme Mediates DNA Demethylation in Cancer Cells. T. TSUJI\* (*Harvard School of Dental Medicine, Boston, MA, USA*).

**2761** 10:00 Head and Neck Cancer Risk in Relation to Polymorphism in Glutathione S-transferase M1/T1 and N-acetyltransferase 2 Related Carcinogen Metabolism. M. MERNE\*, A. HIRVONEN, R. GRENNAN, E. HIETANEN, and S. SYRJÄNEN (*University of Turku and Institute of Occupational Health, Helsinki, Finland*).

**2762** 10:15 Stem Cell Patterns in Epithelia of Human Skin and Mucosa. I.C. MACKENZIE\* and P.J. POLVERINI (*School of Dentistry, University of Michigan, Ann Arbor, USA*).

**2763** 10:30 Does Re-emergence of Genetic Clones at Cancer Sites Predict Recurrence? M.P. ROSIN\*, J.B. EPSTEIN, K. BEREAN, S. DURHAM, J. HAY, M. KNOWLING, X. CHENG, C.F. POH, M. MORRISON, T. ZENG, and L. ZHANG (*British Columbia Cancer Agency; School of Kinesiology, Simon Fraser University; and OMBS, Dentistry, University of British Columbia, Canada*).

**2764** 10:45 Apoptosis and Expression of bcl-2 and bax in Oral Squamous Cell Carcinoma. J.L. LORO\*, O.K. VINTERMYR, P.G. LIAVAAG, R. JONSSON, and A.C. JOHANNESSEN (*Faculty of Dentistry, Gade Institute, University of Bergen, Norway*).

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**Seq#: 280** **Saturday, March 13, 9:00 am - 11:00 am**  
**Oral Session, Room 14**

**Implantology - Clinical Outcomes: Assessment of Clinical Indicators**

**Chairpersons: M. Jeffcoat and N. Geurs**

**2765** 9:00 Digital Subtraction Radiography: An Early Indicator of Guided Bone Regeneration. M.K. JEFFCOAT\*, M. REDDY, R.L. JEFFCOAT, and M.E. FRITZ (*University of Alabama, Birmingham; and Yerkes Primate Center, Atlanta, GA, USA*).

**2766** 9:15 Retrospective Analysis of Crestal Bone Loss around Implants in Sinusgrafts. N.C. GEURS\*, I.-C. WANG, L. SHULMAN, and M.K. JEFFCOAT (*Department of Periodontics, School of Dentistry, University of Alabama at Birmingham, USA*).

**2767** 9:30 Evaluation of Bone Structure Around Oral Implants Using Micro-CT. H. VAN OOSTERWYCK\*, J. DUYCK, J. VANDER SLOTEN, G. VAN DER PERRE, P. ORIS, M. WEVERS, and I. NAERT (*Division of Biomechanics and Engineering Design, Department of Metallurgy and Materials Engineering; Department of Prosthetic Dentistry, BIOMAT Research Group, KU Leuven, Belgium*).

**2768** 9:45 Evaluation of Crestal Bone Height around Implants Using Computerized Radiographs. B. KHALADJ\* and R. CRAIG (*College of Dentistry, University of Oklahoma, Oklahoma City, USA*).

**2769** 10:00 One-year Alveolar Bone Levels of Dental Implants after Immediate Loading. A.M. POLSON\*, D. SHARKEY, L. MINSK, A.P. POLSON, H. SALAMA, and L. ROSE (*University of Pennsylvania, Philadelphia, USA*).

**2770** 10:15 One-year Clinical Status of Dental Implants after Immediate Loading. H. SALAMA\*, L. ROSE, L. MINSK, D. SHARKEY, A.P. POLSON, and A.M. POLSON (*University of Pennsylvania, Philadelphia, USA*).

**2771** 10:30 A Comparison of Soft Tissue Measurements for Three Randomly Placed Implant Types. E.A. McGLUMPHY, L.J. PETERSON, P.E. LARSEN, and J.J. EATON\* (*Ohio State University, Columbus, USA*).

**2772** 10:45 Implant Failure Modes in Hydroxyapatite (HA) vs. Titanium Plasma-sprayed (TPS) Cylinder Implants. E.A. McGLUMPHY, P.E. LARSEN, L.J. PETERSON, and S. SHULTS\* (*Ohio State University, Columbus, USA*).

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**Seq#: 281** **Saturday, March 13, 9:00 am - 11:00 am**  
**Oral Session, Room 17**

**Implantology - Role of Implant Surface Topography on Biological Regulation**

**Chairpersons: L. Cooper and I. Nishimura**

**2773** 9:00 Titanium Topography Affects Osteocalcin Promoter Activity in ROS 17/2.8 Cells. T. MASUDA\*, Z.-Y. GUO, and L.F. COOPER (*Department of Prosthodontics II, Tokyo Medical and Dental University, Japan; and Dental Research Center, School of Dentistry, University of North Carolina, Chapel Hill, USA*).

**2774** 9:15 Surface Topography Effects on Osseointegration at Titanium Surfaces. A. ABRON\*, M. HOPFENSBERGER, and L.F. COOPER (*Department of Prosthodontics, University of North Carolina at Chapel Hill, USA*).

**2775** 9:30 Surface Characteristics Influence Bone Integration after Simultaneous Implant Placement and Guided Bone Regeneration (GBR) in Dogs. L. LIMA\*, A.M. WEHRLE, C.H.F. HÄMMERLE, E. LIBERTI, E. POMPEU, J.H. TODESCAN, and N.P. LANG (*University of São Paulo, Brazil; and University of Berne, Switzerland*).

**2776** 9:45 SEM Study of Surface Stability in Titanium Implants after Bone Installation. A. CONSTANTINO\* (*Oral Implantology Center, School of Dentistry, University S. Francisco, Brazil*).

**2777** 10:00 Osseointegration of a Novel Miniature Implant in Ovariectomized Rat. S. OZAWA\*, T. OGAWA, C. SUKOTJO, H. HASEGAWA, R. NISHIMURA, and I. NISHIMURA (*The Weintraub Center for Reconstructive Biotechnology, UCLA School of Dentistry, Los Angeles, CA, USA*).

**2778** 10:15 A Biomechanical Characterization of Osseointegration in Small Experimental Animals. T. OGAWA\*, S. OZAWA, F. SHIH, J. YANG, C. SUKOTJO, K. EILBER, and I. NISHIMURA (*The Weintraub Center for Reconstructive Biotechnology, University of California at Los Angeles School of Dentistry; and University of California at Los Angeles School of Engineering and Applied Science, USA*).

- 2779** 10:30 An Evaluation of Non-loaded Split-design Implants in Baboons. H.M. LEE\*, A. VERNINO, and R. HOLT (College of Dentistry, University of Oklahoma, USA).  
10:45 Discussion

**Seq#: 282** **Saturday, March 13, 9:00 am - 11:00 am**  
**Oral Session, Room A-1**

**Microbiology/Immunology - Caries Vaccines/Periodontal Infections and Bacterial Agents**

**Chairpersons: M. Maiden and T. Brown**

- 2780** 9:00 GTF-S. *sobrinus* Polysaccharide Conjugates as Potential Caries Vaccines. M.A. TAUBMAN\*, D.J. SMITH, C.J. HOLMBERG, and A. LEES (Department of Immunology, Forsyth Dental Center, Boston, MA; and Virion Systems, Rockville, MD, USA).  
**2781** 9:15 Long-term Immunological Memory with Recombinant Oral *Salmonella* Vaccine Vectors. J.J. KOHLER, L. PATHANGEY, A. PROGULSKE-FOX, and T.A. BROWN\* (University of Florida, Gainesville, USA).  
**2782** 9:30 T-cell Cross-reactivity between the Arthritogenic Epitope of Type II Collagen and *Streptococcus sanguis* Strain 133-79. M. COSTALONGA\* and M.C. HERZBERG (Department of Preventive Sciences, University of Minnesota, Minneapolis, USA).  
**2783** 9:45 Cultivable and Uncultivable Species on or in Gingival Epithelial Cells. I.M. LEVIN\*, C.N. LAU, S.S. SOCRANSKY, A.D. HAFFAJEE, L. MARTIN, J.L. GALVIN, S.K. BOCHES, B.J. PASTER, and F.E. DEWHIRST (Forsyth Dental Center, Boston, MA, USA).  
**2784** 10:00 Tetracycline Resistance (*tetQ*) Genes from Periodontal Isolates of *Bacteroides forsythus*. M.F.J. MAIDEN\* and R. MONTOYA (Forsyth Dental Center, Boston, MA, USA).  
**2785** 10:15 Phylogenetic Reconstruction and Recombination at Multiple Loci of *Porphyromonas gingivalis*. R.W. RUMPF\*, A.L. GRIFFEN, and E.J. LEYS (Ohio State University Department of Oral Biology, Columbus, USA).  
**2786** 10:30 Treatment of Periodontal Infection by Photodynamic Therapy. P. SPACCIAPOLI\*, A. PIEVESKY, N. SOLE, N. SOUKOS, D. ROTHSTEIN, and P. FRIDEN (Periodontix, Inc., Watertown; and MGH, Boston, MA, USA).  
**2787** 10:45 Association of Dentures with Micro-organisms in the Oral Cavity. H. TSCHERNITSCHKE\*, J. STREMPPEL, P. WENDE, and H. GÜNAY (Department of Prosthodontics and Department of Conservative Dentistry & Periodontology, Medical University Hannover, Germany).

**Seq#: 283** **Saturday, March 13, 9:00 am - 11:00 am**  
**Oral Session, Ballroom C**

**Mineralized Tissue - Bone: Cells**

**Chairpersons: T. Wright and H. Thomas**

- 2788** 9:00 Control and Investigation of Single-cell Gene Expression. C.H. THOMAS\*, C. SFEIR, C.D. McFARLAND, and K.E. HEALY (Dental, Medical, and Engineering Schools, Northwestern University, Chicago, IL, USA).  
**2789** 9:15 Expression of DLX3 in Osteoblastic Cells. J.T. WRIGHT\*, E.R. FLEMING, T.C. HART, and L.F. COOPER (School of Dentistry, University of North Carolina, Chapel Hill;

and Bowman Gray School of Medicine, Winston-Salem, NC, USA).

**2790** 9:30 *PLOD2* Gene Expression is Associated with Osteoblastic Differentiation *in vitro* and *in vivo*. K. UZAWA\*, W.J. GRZESIK, H. TANZAWA, and M. YAMAUCHI (Dental Research Center, University of North Carolina, Chapel Hill, USA; and Department of Oral Surgery, Chiba University, Japan).

**2791** 9:45 Colony-stimulating Factor-1 (CSF-1) Affects Cell Survival and Sorting of Actin mRNAs in Osteoblasts. H. WATANABE\*, E.H. KISLAUSKIS, C.A. MacKAY, A. MASON-SAVAS, and S.C. MARKS, Jr. (Department of Ultrastructural Science, Tokyo Dental College, Japan; and Department of Cell Biology, University of Massachusetts Medical School, Worcester, MA, USA).

10:00 Discussion

**2792** 10:15 Collagen mRNA Regulation by the Lysyl Oxidase Propeptide in Osteoblastic Cells. D. MA\*, M.I. UZEL, R.B. SANTANA, H. GROSS, and P.C. TRACKMAN (Division of Oral Biology, Boston University School of Dental Medicine, MA, USA). (1997 AADR Student Fellowship Recipient)

**2793** 10:30 Bone Wound Healing in Bone Sialoprotein (BSP) Overexpression Transgenic Mice. H.F. THOMAS\*, H. JIANG, and J. CHEN (Department of Pediatric Dentistry, University of Texas Health Science Center at San Antonio, USA).

**2794** 10:45 Suppressive Effect of Caldecrin Fragments on Bone Resorption. A. TOMOMURA\*, H. YAMADA, K. HUIJIMOTO, A. INABA, and S. KATOH (Department of Biochemistry, School of Dentistry, Meikai University, Saitama, Japan).

**Seq#: 284** **Saturday, March 13, 9:00 am - 11:00 am**  
**Oral Session, Room 9**

**Oral/Dental Hygiene - Tooth Whitening and Oral Malodor**

**Chairpersons: E. Lynch and S. Nachnani**

**2795** 9:00 Peroxide-gel-mediated Bleaching of Compounds Responsible for Extrinsic Tooth Discoloration. A. CLAXSON\*, M. GROOTVELD, E. LYNCH, and C. SILWOOD (Inflammation Research Group and Conservative Dentistry, Saint Bartholomew's and Royal London School of Medicine and Dentistry, QMW, London, England, UK).

**2796** 9:15 NMR Analysis of Human Saliva Treated with an Oxidizing Gel. E. LYNCH\*, M. GROOTVELD, C. SILWOOD, and A. CLAXSON (Conservative Dentistry and Inflammation Research Group, Saint Bartholomew's and Royal London School of Medicine and Dentistry, QMW, England, UK).

**2797** 9:30 <sup>1</sup>H NMR Evaluations of the Oxidizing Actions of Peroxide Gels. M. GROOTVELD\*, A. CLAXSON, C. SILWOOD, and E. LYNCH (Inflammation Research Group; and Conservative Dentistry, Saint Bartholomew's and Royal London School of Medicine and Dentistry, QMW, England, UK).

**2798** 9:45 Tooth Shade and Its Relationship to Various Physical and Oral Parameters. L. BORDEN, M. BOSMA, J. BOWMAN, and J. LIEBMAN\* (Hill Top Research, Inc., Miami, OH and West Palm Beach, FL, USA).

**2799** 10:00 Detection and Elimination of Oral Malodor. M.W. HALL\*, J.M. COMOLLO, and R.P. CHRISTENSEN (Clinical Research Associates, Provo, UT, USA).

**2800** 10:15 Reduction of Oral Malodor with Zinc-containing Chewing Gum. S. NACHNANI\* (UCLA School of Dentistry, Los Angeles, CA, USA).

- 2801** 10:30 Effects of Metronidazole Mouthrinse on Tongue Microbiota and Oral Malodor. M.G. HARTLEY, C. MCKENZIE, J. GREENMAN\*, and M.A. EL-MAAYTAH (*Bristol Oral Microbiology Unit, Faculty of Applied Sciences, University of the West of England, UK*).
- 2802** 10:45 A Comparison of Two Anti-microbial-containing Dentifrices vs. a Conventional Dentifrice on All-day and Morning Breath Status. J.J. WITT\* and C.L. POORE (*Procter & Gamble Co., Cincinnati, OH, USA*).

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**Seq#: 285** **Saturday, March 13, 9:00 am - 11:00 am**  
**Oral Session, Room 7**

**Oral & Maxillofacial Surgery - Orthognathic Surgery and Distraction Osteogenesis**

**Chairpersons: C. Phillips and J. Van Sickels**

- 2803** 9:00 The Influence of Video Imaging on Patients' Expectations. C.L. PHILLIPS\* and H.A. KIYAK (*University of North Carolina, Chapel Hill, NC; and University of Washington, Seattle, USA*).
- 2804** 9:15 Masticatory Efficiency Changes Related to Proximal Segment Rotation Following BSSO. W.W. LONEY\*, J.E. VAN SICKELS, S. SAKAI, B.H. BRITTON, and J.D. RUGH (*University of Texas Health Science Center at San Antonio, USA*).
- 2805** 9:30 Rigid vs. Wire Fixation for Mandibular Advancement: Skeletal and Dental Stability. C. DOLCE\*, S.D. KEELING, R.A. BAYS, J.E. VAN SICKELS, G.M. CLARK, and J.D. RUGH (*University of Florida, Gainesville; Emory University, Atlanta, GA; and University of Texas Health Science Center, San Antonio, USA*).
- 2806** 9:45 Transverse Stability of Multi-segment LeFort I Expansion Procedures. J. ENGLISH\*, D. MARTIN, and P.H. BUSCHANG (*Baylor College of Dentistry, Texas A & M University System, Dallas, USA*).
- 2807** 10:00 Identification of Apoptotic Cell Death in Distraction Osteogenesis. B. KRUSE-LÖSLER\*, T. MEYER, U. MEYER, and U. JOOS (*Department of Maxillofacial Surgery, University of Münster; and Center for Internal Medicine, University of Göttingen, Germany*).
- 2808** 10:15 Biomechanics of Mandibular Distractor Orientation in a Dog Model. J.B. COPE\*, M.L. SAMCHUKOV, A.M. CHERKASHIN, L.M. WOLFORD, and P.F. FRANCO (*Department of Biomedical Sciences, TAMUS, Baylor College of Dentistry; and Texas Scottish Rite Hospital, Dallas, USA*).
- 2809** 10:30 Strain-related Bone Remodeling in Distraction Osteogenesis of the Mandible. U. MEYER\*, H.-P. WIESMANN, B. KRUSE-LÖSLER, J. HANDSCHEL, U. STRATMANN, D.H. SZULCZEWESKI, and U. JOOS (*Clinic for Craniofacial Surgery, University of Münster, Germany*).
- 2810** 10:45 Gene Expression during Distraction Osteogenesis of the Porcine Mandible. K.E. YATES\*, L.B. KABAN, and J. GLOWACKI (*Skeletal Biology Research Center, Harvard School of Dental Medicine, Boston, MA, USA*).

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**Seq#: 286** **Saturday, March 13, 9:00 am - 11:00 am**  
**Oral Session, Room 11**

**Periodontal Research – Diagnosis/Epidemiology - Systemic/Periodontal Diseases: Cardiovascular Disease, Nutrition, and Osteopenia**

**Chairpersons: R. Genco and R. Reinhardt**

- 2811** 9:00 Periodontal Microflora Related to the Risk for Myocardial Infarction: A Case Control Study. R.J. GENCO\*, T.J. WU, S.G. GROSSI, K. FALKNER, J.J. ZAMBON, and M. TREVISAN (*Oral Biology Department, Periodontal Research Center; and Social and Preventive Medicine Department, State University of New York at Buffalo, USA*).
- 2812** 9:15 Periodontal Disease in Ischemic Stroke Patients and Controls. M. YOUNG, S. ENGBRETSON\*, M. DESVARIEUX, M. ELKIND, B. BODEN-ALBALA, P. PAPAPANOU, I. LAMSTER, and R. SACCO (*Columbia University, New York, NY, USA*).
- 2813** 9:30 Elevated Antibody Titers to Periodontal Pathogens in Ischemic Stroke Patients. Y. VEBER\*, M. DESVARIEUX, R. GREWAL, M. ABREU, B. BODEN-ALBALA, P. PAPAPANOU, M. ELKIND, R. SACCO, and I. LAMSTER (*Columbia University, New York, NY, USA*).
- 2814** 9:45 Correlation between Periodontal Parameters and Carotid Atherosclerotic Plaque Thickness. M. DESVARIEUX\*, M. ELKIND, R. SACCO, S. ENGBRETSON, P. PAPAPANOU, D. SADOWSKY, B. BODEN-ALBALA, and I. LAMSTER (*Columbia University, New York, NY, USA*).
- 2815** 10:00 Response Rates to a Study of Periodontitis and Heart Disease: Lessons Learned. J.D. BECK\*, J.S. PANKOW, J.R. ELTER, S.M. MAURIELLO, and S. OFFENBACHER (*Center for Oral and Systemic Disease and Department of Epidemiology, University of North Carolina, Chapel Hill, USA*).
- 2816** 10:15 Alcohol Consumption and Risk for Periodontal Disease. M. TEZAL\*, S.G. GROSSI, A.W. HO, and R.J. GENCO (*Department of Oral Biology, School of Dental Medicine, State University of New York/Buffalo, USA*).
- 2817** 10:30 Periodontal Disease and Serum Anti-oxidant Nutrients. M. NISHIDA\*, S.G. GROSSI, A.W. HO, R. DUNFORD, and R.J. GENCO (*Department of Oral Biology, School of Dental Medicine, State University of New York/Buffalo, USA*).
- 2818** 10:45 Clinical Characteristics of Post-menopausal Women on Supportive Periodontal Treatment. R.A. REINHARDT\*, J.B. PAYNE, C.A. MAZE, and K. PATIL (*University of Nebraska Medical Center, Lincoln, USA*).

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**Seq#: 287** **Saturday, March 13, 9:00 am - 11:00 am**  
**Oral Session, Room 1**

**Periodontal Research – Pathogenesis - Matrix Metalloproteinases; Bone Regulators**

**Chairpersons: C. Overall and P. Baker**

- 2819** 9:00 Cloning, CHO Cell Expression, and Activation of Rat Collagenase-2 (MMP-8). C.M. OVERALL\*, D. LOWNE, G. WELLS, S. BUREL, C.A.G. McCULLOCH, and J.M. CLEMENTS (*Faculty of Dentistry, University of British Columbia, Vancouver, Canada; and British Biotech, Oxford, UK*).
- 2820** 9:15 Association of the Stat3 Transcription Factor with IL-1b-induced MMP-1 Gene Expression in Human Gingival Fibroblasts. M. TEWARI\*, Q.A. HAMID, S. UEMATSU, P.J. REDDY, T. LIM, O.C. TUNCAY, and D.S. TEWARI (*Department of Orthodontics, School of Dentistry, Temple University, Philadelphia, PA, USA*).
- 2821** 9:30 Regulation of Matrix Metalloproteinase-1 (MMP-1) Gene Expression by NF- $\kappa$ B. D.S. TEWARI, Q.A. HAMID, A. MAJUMDAR\*, M. TEWARI, S. UEMATSU, P.J.

REDDY, Z. TRUMAN, and O.C. TUNCAY (*Department of Orthodontics, School of Dentistry, Temple University, Philadelphia, PA, USA*).

**2822** 9:45 Role of C/EBP in IL-1-induced Collagenase Gene Expression in Human Gingival Fibroblasts. S. UEMATSU\*, Q.A. HAMID, M. TEWARI, C. SMELDLEY, O.C. TUNCAY, and D.S. TEWARI (*Department of Orthodontics, School of Dentistry, Temple University, Philadelphia, PA, USA*).

**2823** 10:00 MCP-1 Expression is Regulated by IL-1 and TNF by Transcriptional and Post-transcriptional Mechanisms. D.T. GRAVES\*, J. XIE, L. WANG, and A.J. VALENTE (*Department of Periodontology, School of Dental Medicine, Boston University, MA, USA*).

**2824** 10:15 Increased Connexin-43 Expression in Oral-derived Human Osteoblasts after TGF- $\beta$  Exposure. C. ADAMO\*, J.M. MAILHOT, and J.L. BORKE (*Departments of Periodontics and Oral Biology, Medical College of Georgia, Augusta, USA*).

**2825** 10:30 Expression of OPG/OCIF in Cultures of Dental Cells. M. SAKATA\*, H. SHIBA, H. KOMATSUZAWA, T. FUJITA, M. SUGAI, H. SUGINAKA, and H. KURIHARA (*Department of Periodontology & Endodontology and Department of Microbiology, Hiroshima University, Japan*).

**2826** 10:45 Murine T-cell Deficiencies are Associated with Decreased Alveolar Bone Loss. P.J. BAKER\*, R.T. EVANS, and D.C. ROOPENIAN (*Bates College, Lewiston, ME; SUNY at Buffalo, NY; and The Jackson Laboratory, Bar Harbor, ME, USA*).

**Seq#: 288** **Saturday, March 13, 9:00 am - 11:00 am**  
**Oral Session, Room 8**

#### Periodontal Research – Therapy - Local Drug Delivery

**Chairpersons: M. Goodson and A. Mombelli**

**2827** 9:00 The *in vivo* Response to a Bioactive Biodegradable Polymer. B. MACÊDO\*, K.E. UHRICH, and L. ERDMANN (*Department of Pediatric Dentistry, New Jersey Dental School, Newark; and Department of Chemistry, Rutgers University, Piscataway, NJ, USA*).

**2828** 9:15 PGE<sub>2</sub> Levels Following Periodontal Flap Surgery with 25% Metronidazole Gel. I.G. NEEDLEMAN\*, A.M. COLLINS, and D.R. MOLES (*Eastman Dental Institute, London, UK*).

**2829** 9:30 Clinical Outcomes Following Treatment of Furcation Defects with Subgingival Doxycycline or Scaling and Root Planing. S. GARRETT\*, R. KIGER, and G. BOGLE (*Atrix Laboratories, Inc., Fort Collins, CO; and Loma Linda University, CA, USA*).

**2830** 9:45 Supportive Periodontal Treatment with Tetracycline Fiber in Diabetic Patients. E. KHEIRKABI\* and N. BISSADA (*Case Western Reserve University, Cleveland, OH, USA*).

**2831** 10:00 Economic Evaluation of a Chlorhexidine Chip for Treating Adult Periodontitis. C.J. HENKE\*, D.P. MILLER, G.C. ARMITAGE, R.M. EBER, R.J. GENCO, W.J. KILLOY, J.T. MELLONIG, R.C. PAGE, A.M. POLSON, M.I. RYDER, M.J. SOMERMAN, T.E. VAN DYKE, L.F. WOLFF, R.A. YUKNA, C.J. EVANS, and R.D. FINKELMAN (*Lewin-TAG, Inc., San Francisco, CA; and Astra Pharmaceuticals, LP, Westborough, MA, USA*).

**2832** 10:15 Clinical and Microbiological Effects of an Antiseptic Dental Varnish after Mechanical Periodontal Therapy.

A. MOMBELLI\*, V.B. DUDIC, and N.P. LANG (*School of Dental Medicine, University of Bern, Switzerland*).

**2833** 10:30 Clinical Effect of Ultrasonic Iodine Lavage during Supportive Periodontal Therapy. D. CAMPBELL\*, C. DRISKO, H. GREENWELL, J.L. GOLDSMITH, and D. MILES (*University of Louisville, KY, USA*).

**2834** 10:45 Phase 1/2 Trial of Topical Histatin Gels in Experimental Gingivitis. D. PAQUETTE\*, R. WILLIAMS, H. LAWRENCE, D. SIMPSON, and P. FRIDEN (*University of North Carolina, Chapel Hill; and Periodontix, Inc., Watertown, MA, USA*).

**Seq#: 289** **Saturday, March 13, 9:00 am - 11:00 am**  
**Oral Session, Room 10**

#### Prosthodontics - Complete Dentures: Diet, Masticatory Performance, Patient Satisfaction

**Chairpersons: A. Obrez and A. van der Bilt**

**2835** 9:00 Dietary Intake with Implant-supported and Conventional Mandibular Dentures. N. GARRETT\*, K. KAPUR, M. HAMADA, E. ROUMANAS, E. FREY MILLER, A. RONG, T. CHEN, and S. LEVIN (*University of California at Los Angeles; and West Los Angeles DVA Medical Center, CA, USA*).

**2836** 9:15 Textural Properties of Foods Avoided by Denture Wearers. A. OBREZ\*, W.G. DE RIJK, and J.L. DRUMMOND (*University of Illinois at Chicago, USA*).

**2837** 9:30 Swallowing Thresholds of Mandibular Implant-retained Overdentures with Variable Portion Sizes. F.A. FONTIJN-TEKAMP\*, A.P. SLAGTER, and W. KALK (*Department of Removable and Maxillo-Facial Prosthodontics, University of Nijmegen, The Netherlands*).

**2838** 9:45 Effect of Mandibular Implant Overdenture Treatment on Masticatory Function. A. van der BILT\*, F.M.C. van KAMPEN, M.S. CUNE, and F. BOSMAN (*Central Military Hospital Utrecht and Utrecht University, The Netherlands*).

**2839** 10:00 Oral Function in Mandibular Implant-overdenture Treatment. F.M.C. van KAMPEN\*, A. van der BILT, M.S. CUNE, and F. BOSMAN (*Central Military Hospital Utrecht, Utrecht University, The Netherlands*).

**2840** 10:15 Success of MicroPlants<sup>®</sup> for Stabilizing Complete Dentures in Severe Residual Ridge Resorption. T. MORNEBURG\* and M. HOFMANN (*Department of Prosthodontics, University Dental Clinic, Friedrich-Alexander-Universität Erlangen, Germany*).

**2841** 10:30 Predicting Patient Satisfaction with New Complete Dentures. M.R. FENLON\*, M. SHERRIFF, and J.D. WALTER (*Guy's, King's, and St. Thomas's Hospitals Dental School, London, UK*).

10:45 Discussion

**Seq#: 290** **Saturday, March 13, 9:00 am - 11:00 am**  
**Oral Session, Room 16**

#### Salivary Research - Salivary Antimicrobials, Antifungal, Antiviral

**Chairpersons: J. Beeley and D. Johnson**

**2842** 9:00 Binding of Salivary Histatins to Oral Microorganisms: An Electrophoretic Study. J.A. BEELEY\* and D. RAMSAY (*University of Glasgow Dental School, UK*).

**2843** 9:15 Susceptibility of *Candida albicans* to the Salivary Antimicrobial Peptide Histatin 5 as Function of Growth Conditions. U. LENDENMANN\*, R.F. TROXLER, and F.G. OPPENHEIM (*Oral Biology and Periodontology, Goldman School of Dental Medicine, Boston University, MA, USA*).

**2844** 9:30 Role of  $\alpha$ -Helical Structure of Histatin-5 in Candidacidal Activity Examined by Proline Variants. H. SITU, S.V. BALASUBRAMANIAN, and L.A. BOBEK\* (*Departments of Oral Biology and Pharmaceutics, State University of New York at Buffalo, USA*).

**2845** 9:45 Examination of Histatin-5 Variants for Toxicity and Proteolytic Resistance *in vitro*. H. SITU\*, T. THI BUI, and L.A. BOBEK (*Department of Oral Biology, School of Dental Medicine, State University of New York at Buffalo, USA*).

**2846** 10:00 Respiratory-deficient Mutants of *C. albicans* are Resistant to Histatin 5. C.S. GYURKO\*, U. LENDENMANN, R.F. TROXLER, and F.G. OPPENHEIM (*Department of Periodontology and Oral Biology, School of Dental Medicine, Boston University, MA, USA*).

**2847** 10:15 Antiviral Effect of Cystatin SN against Herpes Simplex Virus Type I *in vitro*. A.F. KENNELL\*, T.R. HILTKE, and L.A. BOBEK (*Department of Oral Biology, SUNY at Buffalo, NY, USA*).

**2848** 10:30 Age-related Decreases in Salivary Histatins. D.A. JOHNSON\*, C.-K. YEH, D.L. LU, and M.W.J. DODDS (*Departments of Community Dentistry and Dental Diagnostic Science, University of Texas Health Science Center at San Antonio; and GRECC, Audie L. Murphy Veterans Administration Hospital, San Antonio, TX, USA*).

10:45 Discussion

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**Seq#: 291** **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **IADR Hatton Competition – Pre-doctoral Presentations**

**2849** Effects of Commercial Carticaine Preparations on Sarcoplasmic Reticulum Ca-ATPase. G.A. SANCHEZ\*, D. TAKARA, and G.L. ALONSO (*Cátedra de Biofísica, Facultad de Odontología, UBA, Buenos Aires, Argentina*).

**2850** Cupped Lesions on Tooth Cusps Indicate Early Onset of Dental Erosion in Young Adults from South East Queensland. F. KHAN\*, W.G. YOUNG, V. LAW, J. PRIEST, and T.J. DALEY (*Department of Dentistry and Department of Agriculture, University of Queensland, Brisbane, Australia*).

**2851** Acidogenic Potential of Gluco-oligosaccharides: *In vitro* and *in vivo* tests. R. ROWSHANAIE\*, P.J. MOYNIHAN, A. GOWANS, and R.R.B. RUSSELL (*Dental School, University of Newcastle, Newcastle upon Tyne, UK*).

**2852** Expression *in vivo* of Secreted Aspartyl Proteinases by *Candida albicans*. J.R. NAGLIK\*, S.P. SWEET, S.J. CHALLACOMBE, D. GREENSPAN, J.S. GREENSPAN, and N. AGABIAN (*Oral AIDS Research Centre, Department of Oral Medicine and Pathology, GKT Dental Institute, London, UK; and Department of Stomatology, University of California at San Francisco, USA*).

**2853** Characterization of a Novel Zinc Finger Protein Responsive to Bone Morphogenetic Protein-7 (BMP-7) Identified by Differential Display. A. JHEON\*, B. GANSS, S. CHEIFETZ, and J. SODEK (*MRC Group in Periodontal Physiology, University of Toronto, Ontario, Canada*).

**2854** Characterization of Fluconazole Resistance in Oral *Candida dubliniensis* Isolates from HIV-infected Patients Mediated by Multidrug Transporters. G.P. MORAN\* and D.C. COLEMAN (*Department of Oral Surgery, Oral Medicine and Oral Pathology, School of Dental Science, University of Dublin, Trinity College, Ireland*).

**2855** The Effect of Professional Experience on Confirmation Bias among Dentists and Dental Students. S. BIRSHAN\*, Y. BAR-TAL, and I. ELI (*School of Dental Medicine and School of Health Profession, Tel Aviv University, Israel*).

**2856** Comparison of the Flexural Strengths of IPS-Empress and In-Ceram. L.L. SEOW\* and J.L. WICKENS (*Faculty of Dentistry, University of Malaya, Kuala Lumpur*).

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**Seq#: 292** **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **IADR Hatton Competition - Post-doctoral Presentations**

**2857** Effect of Protein-calorie Malnutrition during the Suckling Period on Growth and Biomechanical Properties of Rat Mandible. M.D. META\*, P. SCHNEIDER, C.E. BOZZINI, and R.M. ALIPPI (*Department of Physiology, University of Buenos Aires, School of Dentistry, Argentina*).

**2858** RT-PCR Detection of Metastatic Oral Cancer: Assay Sensitivity: Patient Outcome. L.A. McDONALD\*, D.M. WALKER, and J.R. GIBBINS (*University of Sydney, Australia*).

**2859** Detection of Hsp47 in Fibroblasts from Hereditary Gingival Fibromatosis. L.R. FERREIRA\*, R.D. COLLETA, O.P. ALMEIDA, H. MARTELLI, and J.J. SAUK (*University of Campinas—UNICAMP, Brazil; and University of Maryland, Baltimore, USA*).

**2860** Identification of a Novel Putative Transcription Factor Associated with BMP-induced Osteoblastic Commitment. W. TURNER\*, I.J. MCKAY, V. ROSEN, and F.J. HUGHES (*Department of Periodontology, Saint Bartholomew's and Royal London School of Medicine and Dentistry, UK*).

**2861** Effect of Calcium Hydroxide and Nd:YAP Laser on Periapical Healing. A.A. HASSAN\* and I. ABO-SINNA (*National Institute of Laser Enhanced Science, University of Cairo, Egypt*).

**2862** Differential Cytokine Expression in Cyclosporin A-induced Gingival Overgrowth. T.T. MYRILLAS\*, G.J. LINDEN, and C.R. IRWIN (*Department of Periodontology, School of Dentistry, Queen's University of Belfast, Northern Ireland*).

**2863** Periodontal Ligament Cells Secrete S100A4 Protein, an Inhibitor of Mineralization. W.R. DUARTE\*, S. KASUGAI, T. IIMURA, H. KONDO, S. OIDA, K. TAKENAGA, K. OHYA, and I. ISHIKAWA (*Faculty of Dentistry, Tokyo Medical and Dental University; and Chiba Cancer Center Research Institute, Japan*).

**2864** Evidence for ASK1-JNK and -p38 Signaling Pathways in Regenerating Mucoepithelium. N. FUNATO\*, K. MORIYAMA, M. SAITOH, Y. BABA, H. ICHIJO, and T. KURODA (*Second Department of Orthodontics and Department of Biomaterials Science, Faculty of Dentistry, Tokyo Medical and Dental University, Japan*).

**2865** BMPs as a Cartilage Inducer during Mammalian Face Development. T. IIMURA\*, H. IMAI, S. ISHIGURO, Y. IKEDA, and K. ETO (*Tokyo Medical and Dental University, Japan*).

**2866** Possible Role of Serum and Glucocorticoid-inducible Kinase during Craniofacial-Oral-Dental Development. F.



MYOKAI\*, T. OHIRA, T. YAMAMOTO, K. NARUISHI, F. NISHIMURA, H. ARAI, S. TAKASHIBA, and Y. MURAYAMA (Department of Periodontology and Endodontology, Okayama University Dental School, Japan).

**2867** *In vitro* Apatite Induction by Phosphophoryn Immobilized onto Modified Collagen. T. SAITO\*, M. YAMAUCHI, M.A. CRENSHAW, and K. MATSUDA (Health Sciences University of Hokkaido, Tobetsu, Japan; and Dental Research Center, University of North Carolina, Chapel Hill, USA).

**2868** A Study on the Extracellular Matrix in the Artificially Created Cleft Lip Wound Healing of Rabbit Fetuses. S.H. BAEK\* and W.S. YANG (Department of Orthodontics, College of Dentistry, Seoul National University, Korea).

**2869** Characterization of Mutanase Produced by *Microbispora rosea*. J. CHUNG\* (Department of Oral Microbiology, College of Dentistry, Pusan National University, Korea).

**2870** Cytotoxic Activity and GroEL Localization in Clinical *Actinobacillus actinomycetemcomitans* Strains. S. PAJU\*, F. GOULHEN, P. PLAMONDON, S. ASIKAINEN, D. GRENIER, D. MAYRAND, and V.-J. UITTO (University of Helsinki, Finland; Université Laval, Quebec; and University of British Columbia, Vancouver, Canada).

**2871** Antimicrobial Effectiveness of Electrochemically Activated Water as Endodontic Irrigation Solution. W.P. WILLIAMS\* (Department of Restorative Dentistry, Faculty of Dentistry, University of Pretoria, South Africa).

**2872** Neovascularization of Composite Demineralized Intramembranous Bone Matrix. S.H. CHAY\*, M. WONG, and A.M. RABIE (Orthodontics, Pathology, University of Hong Kong, China).

**Seq#: 293** **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **AADR Hatton Competition - Pre-doctoral Presentations**

**2873** Doc-1-mediated Apoptosis in Malignant Hamster Oral Keratinocytes. S.J. CWIKLA\*, T. TSUJI, J. McBRIDE, D.T.W. WONG, and R. TODD (Harvard School of Dental Medicine and Massachusetts General Hospital, Boston, USA).

**2874** Two Independent Nuclear Localization Signals in Zfphep. M. MILLS\*, M.E. COSTANTINO, and D.S. DARLING (School of Dentistry, University of Louisville, KY, USA).

**2875** Induction of p16<sup>INK4a</sup> during Senescence of Normal Human Oral Keratinocytes. M.K. KANG\* and N.-H. PARK (Dental Research Institute and School of Dentistry, UCLA, Los Angeles, CA, USA).

**2876** Oral Carcinoma Lines Produce Biologically Active Angiogenic Factors. B. SHEMIRANI\* and D.L. CROWE (Center for Craniofacial Molecular Biology, University of Southern California, Los Angeles, USA).

**2877** Anti-cocaine Catalytic Antibodies. X. WANG\*, H. ARONSON, R. ALMONTE, and D.W. LANDRY (Department of Medicine, P&S, Columbia University, New York, USA).

**2878** Defective Smad2 Nuclear Localization in a TGF  $\beta$ -resistant Carcinoma Line. K.J. TSANG\*, D.K. TSANG, T.N. BROWN, and D.L. CROWE (Center for Craniofacial Molecular Biology, University of Southern California, Los Angeles, USA).

**2879** Enamel Phenotype in Three Families with Amelogenin Gene Point Mutation. D.B. RAVASSIPOUR\*, S. HART, T.C. HART, A.V. RITTER, M. YAMAUCHI, C. GIBSON, and J.T.

WRIGHT (Schools of Dentistry, University of North Carolina, Chapel Hill; University of Pennsylvania, Philadelphia; and Bowman Gray School of Medicine, Winston-Salem, NC, USA).

**2880** Confocal Fluorescent Microscopic Imaging of Horizontally Targeted Drugs in Cancers. S. HOGHOOGHI\*, L.J. KREBS, M. AL-NOURI, P. PRASAD, A.V. SCHALLY, and C. LIEBOW (School of Dental Medicine, SUNY at Buffalo, NY, USA).

**2881** Phenotypic and Genotypic Analyses of HIV-1 in Saliva and Plasma. J.M. WILLIAMS\*, J.A.E. NELSON, R. SWANSTROM, and D.C. SHUGARS (Schools of Dentistry and Medicine, University of North Carolina, Chapel Hill, USA).

**2882** Cyclooxygenase-1 Mediates the Effects of Vitamin D<sub>3</sub> Metabolites on Costochondral Chondrocytes. T. KELLER\*, V.L. SYLVIA, D.D. DEAN, Z. SCHWARTZ, and B.D. BOYAN (Health Science Center, University of Texas, San Antonio, USA; and Hebrew University, Jerusalem, Israel).

**Seq#: 294** **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **AADR Hatton Competitions – Post-doctoral Presentations**

**2883** VEGF and TSP1 Regulate Angiogenesis by Controlling Endothelial Cell Survival. J.E. NÖR\*, V. CASTLE, D.J. MOONEY, and P.J. POLVERINI (School of Dentistry and School of Medicine, University of Michigan, Ann Arbor, USA).

**2884** Modulating Survival of Tumor Cells to Doxorubicin-LHRH by Receptor Regulation. L.J. KREBS\*, S. HOGHOOGHI, A.V. SCHALLY, and C. LIEBOW (School of Dental Medicine, SUNY at Buffalo, NY, USA).

**2885** Characterization and Role of PGE<sub>2</sub> Receptors (EP) in Mediating the Effects of 24,25-(OH)<sub>2</sub>D<sub>3</sub> on Resting Zone Chondrocytes. S. SCHUBKEGEL\*, F. DEL TORO, Jr., V.L. SYLVIA, D.D. DEAN, B.D. BOYAN, and Z. SCHWARTZ (Health Science Center, University of Texas, and Lackland AFB, San Antonio, TX, USA; and Hebrew University, Jerusalem, Israel).

**2886** Effects of PDGF-bb and TGF- $\beta$ 1 on the Contractile Behavior of Human Gingival Fibroblasts in Collagen-GAG Matrices *in vitro*. J.Y. HSIAO\*, N. KARIMBUX, and M. SPECTOR (Orthopedic Research, Brigham and Women's Hospital, Boston, MA, USA).

**2887** Tc-99m-MDP Imaging of Titanium Implants Treated with Growth Factor FGF-1. M.S. McCracken\*, K.R. ZINN, J.A. THOMPSON, and J.E. LEMONS (University of Alabama at Birmingham, USA).

**2888** Unusual Processing of Proteins and Polypeptides during the Growth of *Porphyromonas gingivalis*: Implications of a Primary Role for Prolyl Di- and Tripeptidyl-peptidases. A. BANBULA\*, M. BUGNO, J. POTEPA, and J. TRAVIS (Institute of Molecular Biology, Jagiellonian University, Kraków, Poland; and Department of Biochemistry and Molecular Biology, University of Georgia, Athens, USA).

**2889** 1,25-Dihydroxyvitamin D<sub>3</sub> Regulates Cellular Responses through a Novel Plasma Membrane Receptor. S. RIMES\*, H.A. PEDROZO, Z. SCHWARTZ, V.L. SYLVIA, R. GOMEZ, D.D. DEAN, G.H. POSNER, I. NEMERE, and B.D. BOYAN (Health Science Center, University of Texas, San Antonio, USA; Hebrew University, Jerusalem, Israel; Johns Hopkins University, Baltimore, MD; and Utah State University, Logan, USA).

**2890** Interferon-g Down-regulates Cathepsin K mRNA Levels in Osteoclasts. S. KAMOLMATYAKUL\*, W. CHEN, and Y.-P. LI (*Forsyth Dental Center, Boston, MA, USA*).

**2891** Approximal Caries Detection and Time-trends Using Radiographic Films and DDR. H. EGGERTSSON\*, M. ANALOUI, R. ISAACS, G.J. ECKERT, and G.K. STOOKEY (*School of Dentistry, Indiana University, Indianapolis, USA*).

**2892** The Success of Different Designs of Fixed Implant Prostheses. M. HAMED\*, J. DaSILVA, S. MORGANO, C. DOUGLASS, R. BOSCH, and R. WEYANT (*Schools of Dental Medicine, Boston University, Harvard University, and University of Pittsburgh, USA*).

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**Seq#: 295**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

### Caulk/Dentsply Competition

**2893** Effect of Culture Surface on Macrophage Response to Wounding. C. DeLEON\*, S. NARES, B. PARK, and A.M. IACOPINO (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**2894** A Model System to Engineer Salivary Glands. T. THOMPSON\*, M. MILLER, C.W. PATRICK, and E.M. DURBAN (*University of Texas Dental Branch, and M.D. Anderson Cancer Center, Houston, TX, USA*).

**2895** Expression of Mouse Tufelin in Dental and Non-dental Tissues. C. DANIELS\*, T.T. GU, D. SIMMONS, C. KNIGHT, O.H. RYU, C.-C. HU, J.P. SIMMER, and M. MacDOUGALL (*Department of Pediatric Dentistry, Dental School, University of Texas Health Science Center at San Antonio, USA*).

**2896** EMMPRIN Expression Influences Progression of Oral Squamous Cell Carcinoma. L.C. BORDADOR\* and D.M. RAMOS (*Harvard School of Dental Medicine, Boston; and Department of Stomatology, University of California San Francisco, USA*).

**2897** Nitric Oxide Induces Osteoblast Apoptosis via a Caspase-1/ICE Cascade. J. WONG\* and P. HAUSCHKA (*Harvard School of Dental Medicine; and Department of Orthopaedic Research, Children's Hospital, Boston, MA, USA*).

**2898** Highly Efficient Binding of Cationic Liposomes to *Porphyromonas gingivalis*. K. FARZANEH\*, A. ALIJANIAN, T. BRAMANTI, and N. DÜZGÜNES (*Department of Microbiology, University of the Pacific, San Francisco, CA, USA*).

**2899** 17 $\beta$ -Estradiol Mediates Its Gender-specific Effects on Chondrocyte Differentiation by Activation of Protein Kinase C. G.V. CAMMACK\*, V.L. SYLVIA, D.D. DEAN, B.D. BOYAN, and Z. SCHWARTZ (*University of Texas Health Science Center, San Antonio, USA; and Hebrew University, Jerusalem, Israel*).

### (1998 AADR Student Fellowship Recipient)

**2900** Secondary Messengers Involved in Human Osteoblast-like Cell Interleukin-6 Production. C.B. HUNZEKER\*, S. KOKA, S.J. WHITLOCK, and T.M. PETRO (*College of Dentistry, University of Nebraska MC, Lincoln, USA*).

**2901** The Effects of Anti-NGF Administration in Adjuvant-induced Inflammation of the TMJ. M. SAPOZHNIKOV\*, L.A. DEES, G. ALANIZ, and R. SPEARS (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**2902** Effect of Tenascin-C and Resident Fibroblasts on Oral Cancer Invasion. M. TAI\* and D.M. RAMOS (*University of California San Francisco, USA*).

**2903** Adjuvant-induced Inflammation of the Rat TMJ Results in Altered Levels of IL-1b and TNF-a. L.A. DEES\*, M. SAPOZHNIKOV, G. ALANIZ, and R. SPEARS (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**2904** The Genotype and Phenotype of Hypocalcified Amelogenesis Imperfecta. G. KANG\*, T.C. HART, E.R. FLEMING, and J.T. WRIGHT (*School of Dentistry, University of North Carolina, Chapel Hill; and Bowman Gray School of Medicine, Winston-Salem, NC, USA*).

**2905** Role of Specific PGE<sub>2</sub> Receptors (EP) in Mediating the Effects of 1,25-(OH)<sub>2</sub>D<sub>3</sub> on Growth Zone Chondrocytes. J.P. OEFINGER\*, F. DEL TORO, Jr., V.L. SYLVIA, D.D. DEAN, B.D. BOYAN, and Z. SCHWARTZ (*University of Texas Health Science Center, San Antonio, USA; and Hebrew University, Jerusalem, Israel*).

**2906** Cyclooxygenase-2 Expression is Upregulated in Inflamed Gingival Tissues. A.I. DONGARI-BAGTZOGLU, K. WEN, R. SINHA-MORTON\*, and J.L. EBERSOLE (*Division of Periodontics, Columbia University, NY; and UTHSC, San Antonio, TX, USA*).

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**Seq#: 296**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

### Prosthodontics - Dentures: Masticatory Performance, Occlusion, Attachments, Biofilms

**2907** Effects of Denture Inadequacies on Masticatory Performance. J.P. HATCH, J.D. RUGH\*, M.J. SAUNDERS, and S. SAKAI (*University of Texas Health Science Center at San Antonio, USA*).

**2908** A Possible Outcome Measure for Studies of Oral Motor Adaptation. T.N. MURRAY\*, J.D. RUGH, J.P. HATCH, M. WIEBER, C. BUENTELLO, and R.C.M.R. GARCIA (*University of Texas Health Science Center at San Antonio, USA; University Campinas, Piracicaba, Brazil; and University of Würzburg, Germany*).

**2909** Color-changeable Chewing Gum for Evaluating Masticatory Performance of Denture Wearers. S. HIRANO\*, I. WATANABE, Y. TAKAHASHI, and I. HAYAKAWA (*Tokyo Medical and Dental University, Japan*).

**2910** Anterior Occlusal Contacts of Complete Dentures during Mastication. N. YOSHITOMI\*, T. SUZUKI, H. KUMAGAI, and K. KOBAYASHI (*Tokyo Medical and Dental University and Hiroshima University, Japan*).

**2911** Vertical Dimension and Electromyography of Masseters in Complete Denture Patients. A. ABOUSHALA, N. MEHTA, A. FORGIONE\*, G. KUGEL, and R. CHAPMAN (*Tufts University School of Dental Medicine, Boston, MA, USA*).

**2912** Comparative Study of Conventional Maxillary Dentures and Metal Structure Dentures. C. OHKUBO, S. HANATANI\*, Y. SUZUKI, M. ABE, and T. HOSOI (*Department of Removable Prosthodontics, Tsurumi University School of Dental Medicine, Yokohama, Japan*).

**2913** Influence of Occlusal Scheme on Pressure Distribution under Complete Denture. T. OHGURI\*, F. KAWANO, N. MATSUMOTO, and T. ICHIKAWA (*School of Dentistry, Tokushima University, Japan*).

**2914** Wear Resistance of Denture Teeth Materials against Bladed Teeth. E. NAGAI\*, Y. SATOH, and S. SUZUKI (*Nihon University School of Dentistry, Japan; and University of Alabama at Birmingham, USA*).

**2915** Tensile Bond Strength of Treated Magnetic Attachment to Denture Resin. B.B. CHOI, J.W. OH, H.N. LIM, and Y.K. BAEK\* (*Department of Dental Materials, College of Dentistry, Kyung-Hee University, Korea*).

**2916** A Simplified Approach to the Characterization and Design of Magnetic Attachments. M. RILEY\*, J.D. SPEIGHT, A.D. WALMSLEY, A.J. WILLIAMS, and I.R. HARRIS (*Schools of Metallurgy & Materials & Dentistry, University of Birmingham, UK*).

**2917** A Comparison of the Retentive Properties of Six Prefabricated Overdenture Systems. M.K. PAGNILLO\*, B.I. COHEN, D. EPSTEIN, and P. EPSTEIN (*Essential Dental Laboratories, S. Hackensack, NJ, USA*).

**2918** Disclosing of Biofilm Denture: Evaluation Discloses Capacity and Antimicrobial Activity. C.H. LOVATO\*, H.F.O. PARANHOS, and I.Y. ITO (*FORP and FCFRP, University of São Paulo, Brazil*).

**2919** Denture Biofilm: Clinical and Microbiologic Assessment. D.M. RODRIGUES\*, I.Y. ITO, R.C. CANDIDO, H. PANZERI, E.H.G. LARA, and H.F.O. PARANHOS (*FORP and FCFRP, University of São Paulo, Brazil*).

**2920** *Candida albicans* Colonization on Conventional and Microwave Denture Acrylic. E.R. CURTIS\*, R.L. SCHNEIDER, T. HUFF, R.L. ETTINGER, M. SHELTON, and D. DRAKE (*College of Dentistry, University of Iowa, Iowa City, USA*).

**2921** Effects of Antimicrobials on *Candida albicans* Biofilms. M. SHELTON\*, C. MAREK, R.L. ETTINGER, and D. DRAKE (*College of Dentistry, University of Iowa, Iowa City, USA*).

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**Seq#: 297**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Prosthodontics - Fixed, Removable & Implant Prosthodontic Procedures: Design, Tissue Response, Finish**

**2922** NHANES-III Report of RPD Prevalence, Distribution, and Defects. J.D. SHULMAN, V.A. MARKER, and S.K. HUMMEL\* (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**2923** Joint Strengths of Metal Framework Structures for Removable Partial Denture. C. OHKUBO\*, T. HOSOI, and T. OKABE (*School of Dental Medicine, Tsurumi University, Yokohama, Japan; and Baylor College of Dentistry, TAMUS, Dallas, TX, USA*).

**2924** Comparison of Lingual and Kennedy Bars with I-bar RPD in Compromised Periodontia. T. TAIRA\*, H. ITOH, T. SASAKI, and S. MURAYAMA (*School of Dentistry, Tohoku University, Sendai, Japan*).

**2925** Carbon Dioxide Laser for Gingival Troughing during Impression Making. M.E. O'REILLY, D.M. BARNES\*, L.W. BLANK, E. ROMBERG, and B. FITZGERALD (*Baltimore College of Dental Surgery, University of Maryland, USA*).

**2926** Intrapulpal Pressure Changes during Crown Cementation: An *in vitro* Study. J. HUISMANN\*, A. SCHULZ, and W. NIEDERMEIER (*School of Dental and Oral Medicine, University of Cologne, Germany*).

**2927** Cooling Effect of Air/Water Spray on Intrapulpal Temperature (IPT) Change through Matrices. M.C. HAO\* (*Dental Clinic, Navy Headquarters, Taipei, Taiwan, ROC*).

**2928** Adhesion Testing of a Denture Base Resin with Five Casting Alloys. N.L. CLELLAND\* and M. VAN PUTTEN (*College of Dentistry, Ohio State University, Columbus, USA*).

**2929** Comparison of Bone Loss Surrounding Hydroxyapatite and Titanium Plasma-sprayed Implant Surfaces. T.B. BOZEMAN\*, R. LOUGHLIN, M. MILLER, K.D. STEEL, W. GARDNER, and J.D. JONES (*University of Texas Health Science Center at San Antonio, USA*).

**2930** A Five-year Follow-up Study of Machine-fabricated Titanium Bridges. J.-I. SMEDBERG\* and K. ARVIDSSON (*Public Dental Service, Stockholm; and Public Dental Service, Örebro, Sweden*).

**2931** Improved Methods for Casting Titanium. R.R. WANG, J. GANNON\*, and R. HIRSCH (*Case Western Reserve University School of Dentistry, Cleveland, OH, USA*).

**2932** Comparing Tobacco Use with Salivary Cotinine Levels in Dental Implant Patients. M. MILLER\*, C.M. FLORES, T.B. BOZEMAN, R. LOUGHLIN, K.D. STEEL, W. GARDNER, and J.D. JONES (*University of Texas Health Science Center at San Antonio, USA*).

**2933** Evaluation of the Polishability of Soft Lining Materials. I.J. PESUN\*, J. HODGES, and J.H. LAI (*School of Dentistry, University of Minnesota, Minneapolis; and Lai Laboratories Inc., Burnsville, MN, USA*).

**2934** Surface Preparation Effects on Silicone to PMMA Shear Bond Strengths. P.M. MULLASSERIL, W.N. WYATT\*, N.L. JACOBSEN, S.S. KHAJOTIA, and M.G. DUNCANSON, Jr. (*University of Oklahoma College of Dentistry, Oklahoma City, USA*).

**2935** Effects of Surface Treatments on Acrylic Denture Teeth Bonding. K.-H. CHUNG\*, T. LIN, and T. BERRY (*Faculty of Dentistry, National Yang-ming University, Taiwan, ROC; and Department of Restorative Dentistry, Dental School, UTHSCSA, TX, USA*).

**2936** Plaque Flow around Clearance Copings—An *in vitro* Study. A. SCHULZ\*, M. MUSIOL, and W. NIEDERMEIER (*School of Dental and Oral Medicine, University at Cologne, Germany*).

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**Seq#: 298**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Prosthodontics - All-ceramic Restorations: Material Properties & Adaptation/Occlusal Wear & Abfraction**

**2937** Fracture Strength of CAD/CIM-fabricated All-ceramic Crowns. H.J. FROBENIUS, S. RINKE, and A. HÜLS\* (*ZMK-Klinik, Abt. Prothetik II, Göttingen, Germany*).

**2938** Fracture Resistance of Ceramic Crowns Influenced by Coping/Die Fit. S. EL-EBRASHI, B.R. LANG\*, M.E. RAZZOOG, P. YAMAN, and K.B. MAY (*University of Michigan, Ann Arbor, USA*).

**2939** Microstructure, Crack Patterns, and Flexural Strength of Two Machinable Dental Ceramics. I.L. DENRY, R.F. ABUSHABAN\*, and J.A. HOLLOWAY (*Ohio State University, Columbus, USA*).

**2940** Fitting Accuracy of CEREC 2 Crowns Produced with Two Different Ceramic Materials. H. CLAAS\*, A. HÜLS, and S. RINKE (*ZMK-Klinik, Abt. Prothetik II, University of Göttingen, Germany*).

**2941** Marginal Adaptation of Ceramic Copings Manufactured by CAD/CAM Techniques. R.W. CONGDON\*, H.P. WEBER, and F. RASOOL (*College of Dentistry, University of Illinois at Chicago; and Harvard School of Dental Medicine, Boston, MA, USA*).

**2942** *In vivo* Measurement of Antagonist Tooth Wear Opposing Ceramic Bridges. J.A. SORENSEN and H.X. BERGE\* (Dental Research Center, Oregon Health Sciences University, Portland, USA).

**2943** Validation of Stress Corrosion of Enamel Using Time Lapse Profilometry. S.A. WHITEHEAD\*, N.H.F. WILSON, and D.C. WATTS (University of Manchester Dental Hospital, UK).

**2944** Simulation of Occlusal Contact Wear of Human Enamel. K.L. MILLER\* and S. SUZUKI (University of Alabama at Birmingham School of Dentistry, USA).

**2945** Prevalence of Noncarious Cervical Lesions in Dental Students and its Relationship to Occlusal Aspects. L.F. PEGORARO\*, D.M. TELLES, and J.C. PEREIRA (Bauru Dental School, University of São Paulo, Brazil).

**2946** Stress Distribution of Abrfraction Lesion of Premolar: A Finite Element Analysis. C.H. WANG\*, H.E. LEE, C.S. CHENG, S.C. CHANG, C.-L. LIN, and J.H. CHANG (School of Dentistry, Kaohsiung Medical College; and Institute of Biomedical Engineering, National Cheng-Kung University, Tainan, Taiwan).

**2947** Cervical Strains Induced by Occlusal Loading. K.K. CHEN\*, K. MIYAKE, and M. TERASHITA (Kyushu Dental College, Kitakyushu, Japan).

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**Seq#: 299**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Dental Materials - Resin/Tooth Microstructure**

**2948** FE-SEM/TEM/AFM Evaluation of Resin-Dentin Interfaces. M.A. VARGAS, J.E. LAFFOON\*, S.R. ARMSTRONG, and R. NESSLER (College of Dentistry, University of Iowa, Iowa City, USA).

**2949** Wet-bonding of Light-cured Adhesive to 10-3 Demineralized Dentin. N. NAKABAYASHI\* and K. HIRANUMA (Institute of Medical and Dental Engineering, Tokyo Medical and Dental University, Japan).

**2950** AFM Study of Citric Acid-Ferric Chloride Etching Characteristics of Dentin. G.W. MARSHALL, K. SAEKI\*, S.A. GANSKY, and S.J. MARSHALL (University of California, San Francisco, USA).

**2951** Exposed Collagen Stains at the Base of the Hybrid Layer. A. HARNER\*, J.C. CHEN, G.W. MARSHALL, and S.J. MARSHALL (University of California, San Francisco, USA).

**2952** High-resolution Imaging of the Smear/Dentin/Adhesive Interface under Environmental Conditions. P. SPENCER and J.R. SWAFFORD\* (University of Missouri—Kansas City School of Dentistry, USA).

**2953** The Effect of Depth of Demineralization on Dentin Bond Strengths and Morphology of the Hybrid Layer. J. PERDIGÃO, K.N. MAY, Jr.\*, A.D. WILDER, Jr., and M. LOPES (Department of Operative Dentistry and Dental Research Center, University of North Carolina, Chapel Hill, USA).

**2954** Evaluation of Resin-Dentin Interfaces Formed *in vivo*. L.N. BARATIERI\*, J. PERDIGÃO, L.A. FELIPE, M. LOPES, and A.V. RITTER (Federal University of Santa Catarina, Brazil; and University of North Carolina at Chapel Hill, USA).

**2955** Ultramorphological Study of Dentin Treated with a Simplified Adhesive. M. LOPES\*, J. PERDIGÃO, and W.W. AMBROSE (Dental Research Center and Department of Operative Dentistry, University of North Carolina at Chapel Hill, USA).

**2956** Effects of Bleaching on Enamel-Resin Interfaces—A TEM Study. J. PERDIGÃO, C. FRANCCI, M.A. MALEK\*, E.J. SWIFT, Jr., W.W. AMBROSE, and M. LOPES (University of North Carolina at Chapel Hill, USA).

**2957** Ultramorphology and Shear Bond Strengths of Self-etching Adhesives on Enamel. L. BRESCHI\*, J. PERDIGÃO, G. MAZZOTTI, M.F. NUNES, and P. GOBBI (Istituto di Anatomia Umana, University of Bologna, Italy; and University of North Carolina, Chapel Hill, USA).

**2958** TEM/FE-SEM Examination of Two Single-bottle Adhesives. M.A. VARGAS, J. PERDIGÃO, M. LOPES, and G. GOMES\* (University of Iowa, Iowa City; University of North Carolina at Chapel Hill, USA; and Private Practice, Lisbon, Portugal).

**2959** *In vivo* Morphology of a Hybrid Layer under Masticatory Stress. E. MILIA\*, E. BALDONI, B. MANUNZA, and F. GARCÍA-GODOY (University of Sassari, Italy; and University of Texas Health Science Center at San Antonio, TX, USA).

**2960** *In vivo* Hybridization of Two Self-etching Adhesive Systems. E. MILIA, G. CAMPUS, M. ROTONDO\*, and B. MANUNZA (University of Sassari, Italy).

**2961** Morphology of Hybrid Layers Created by Different Bonding Techniques. E. MILIA, M. BOSSÙ\*, M.R. LALLAI, and S. MARCEDDU (University of Sassari, Italy).

**2962** Citric Acid Etching of Cervical Sclerotic Dentin Lesions: AFM Study. G.W. MARSHALL, Y.J. CHANG\*, S.A. GANSKY, and S.J. MARSHALL (University of California, San Francisco, USA).

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**Seq#: 300**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Dental Materials - Microleakage/Marginal Adaptation**

**2963** Microleakage and Penetration of Two Pit and Fissure Sealants. T. COUTINHO\*, E. PEREIRA, and M. BIJELLA (Bauru School of Dentistry, University of São Paulo, Brazil).

**2964** A Comparative Study of Microleakage on Class V Restorations. D.G. FARIAS\*, R.P. AVELAR, and A.C.B. BEZERRA (University of Brasilia-UnB, Brazil).

**2965** Effect of One-bottle Self-etching Primer on Microleakage of Cervical Restorations. S. KUBO\*, Y. KONISHI, H. YOKOTA, and Y. HAYASHI (School of Dentistry, Nagasaki University, Japan).

**2966** Microleakage in Fissures Sealed with Resin Sealant or Resin-modified Glass Ionomer: An *in vitro* Study. A.C. ALVES\*, E.F. AZEVEDO, and D.M. PIRES (Bahia Federal University/Feira de Santana State University, Brazil).

**2967** Effects of Adhesives on Microleakage of Amalgam Restorations. M. BOLLA\*, E. LEFORESTIER, C. GREMET, M. MULLER, M.F. BERTRAND, and E. MEDIONI (UFR Odontology, Nice, France).

**2968** Restoration Microleakage with Vitremer Associated with Hybrid Zone. A.D. LOGUERCIO, D.L. SILVEIRA\*, J. ULIAN, and A.L.S. BUSATO (Operative Dentistry Department-FO-UFPEL, Brazil).

**2969** SEM Analysis of Marginal Integrity Following Various Polishing Systems. D.C. HOELSCHER\*, A.L. NEME, and F.E. PINK (University of Detroit Mercy, MI, USA).

**2970** Marginal Adaptation of Class II Composite Restorations with SONICSYS-Ceramic-Inserts. B. HUGO\*, A. STASSINAKIS, N. HOFMANN, S. RIEDLINGER, and B.

KLAIBER (*Department of Operative Dentistry, University of Würzburg, Germany; and University of Bern, Switzerland*).

**2971** Evaluation of Interfacial Adaptation of Chemically and Light-cured Liners with Respect to Cleaning Techniques. M. COUTINHO\*, J. MONDELLI, and P.A. ARAÚJO (*Federal University of Mato Grosso do Sul; Bauru Dental School, Brazil*).

**2972** Interfacial Adaptation of Resins Cured with a Dual-intensity Light-curing Unit. F. GARCÍA-GODOY\* and R.M. PUPPIN RONTANI (*University of Texas Health Science Center at San Antonio, USA; and UNICAMP, Piracicaba, Brazil*).

**2973** Evaluation of Joint Integrity between Indirect Composites and Tooth Structure. S. GUZMAN\*, S.R. ARMSTRONG, M.A. VARGAS, and D.S. COBB (*University of Iowa, Iowa City, USA*).

**2974** Interfacial Adaptation of PMC (Compomer) Restorations in Primary Molars. A SEM Evaluation. I.E. ANDERSSON-WENCKERT\*, J.W.V. van DIJKEN, and P. HÖRSTEDT (*Institute of Oral Biology and Department of Pathology, Umeå University, Sweden*).

**2975** The Influence of Cavity Configuration, Resin Layer Thickness, and Dentin Treatment on Resin Adaptation. A. URIBE ECHEVARRIA, N.N. URIBE ECHEVARRIA, C.A.S. COSTA, and J. URIBE ECHEVARRIA\* (*Cordoba Dental School, Argentina; University of Michigan, Ann Arbor, USA; and UNESP Dental School, Araraquara, Brazil*).

**2976** Effect of Caries Solution on Marginal Morphology of Dentin-Composite Interfaces. C. PRATI\*, S. CHERSONI, A. PISTANI, G. MONTANARI, and R. MONGIORGI (*School of Dentistry and Department of Environmental Sciences, University of Bologna, Italy*).

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**Seq#: 301**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Multilayered Structures Bulk Fracture and Bond Characterization**

**2977** Fracture Strength of Molar Crowns Made by Targis/Vectris and Empress Using Composite and Hybrid Ionomer Cementation. D. LATZEL\*, M. BEHR, M. ROSENTRITT, R. LANG, and G. HANDEL (*University of Regensburg, Germany*).

**2978** Crack Evaluation of Different Crowns Dependent on Build-up and Luting Materials. R. FRANKENBERGER, A.-R. STOYA\*, N. KRÄMER, and A. PETSCHL (*Policlinic for Operative Dentistry and Periodontology, University of Erlangen, Germany*).

**2979** Fracture Incidence of Procera Copings Cemented with Resin-reinforced Cements. M.D. SNYDER\*, M.E. RAZZOOG, and M.J. JAARDA (*School of Dentistry, University of Michigan, Ann Arbor, USA*).

**2980** Fracture Resistance of Prepared Teeth Restored with Bonded Restorations. A.J. ST-GEORGES\*, J.R. STURDEVANT, K.N. MAY, Jr., E.J. SWIFT, Jr., and L. CHU (*Department of Operative Dentistry, University of North Carolina, Chapel Hill, USA*).

**2981** A New Approach in Measuring Adhesion of Porcelain to Dental Alloys and Titanium. N. SUANSUWAN\* and M.V. SWAIN (*Biomaterials Science Research Unit, Faculty of Dentistry, University of Sydney, Australia*).

**2982** Bond Strength of Low-fusing Porcelains to Casting Alloys. G. del CAMPO\*, G.J. ZIEBERT, C. LOVELL, and V.B. DHURU (*Marquette University School of Dentistry, Milwaukee, WI, USA*).

**2983** Bond Strength and Shade of Low-fusing Porcelain. T. SATO\*, N. AL MUTAWA, I. SHIOZAWA, and S. HASEGAWA (*Faculty of Dentistry, Department of Fixed Prosthodontics, Tokyo Medical and Dental University, Japan*).

**2984** Bond Strength of an All-ceramic Material to Composite Resin Cement. J. BRODSKY, D.M. BARNES, J.A. von FRAUNHOFER\*, E. ROMBERG, and G. MINAH (*Dental School, University of Maryland, Baltimore, USA*).

**2985** SEM Evaluation of Debonded Luting Cement Failures at In-Ceram Disc Surfaces. M. ÖZCAN, H.N. ALKUMRU, D.A. GEMALMAZ\*, and I. NERGİZ (*Marmara University, Istanbul, Turkey; and School of Dental and Oral Medicine, Cologne, Germany*).

**2986** Bond Strength of Adhesive Resins to Tooth-colored Posts. K.L. O'KEEFE\*, J.M. POWERS, and B.H. MILLER (*Houston Biomaterials Research Center; and Baylor College of Dentistry-TAMUS, Dallas, TX, USA*).

**2987** Bond Strength of Resin Cement to Dentin with Various Curing Modes and Light Intensities. S.H. BURGUIERES\*, J.O. BURGESS, and A. RIPPS (*School of Dentistry, Louisiana State University, New Orleans, USA*).

**2988** Bond Strength of Resin Cements with Various Light Intensities. B.M. CHAUVIN\*, J.O. BURGESS, X. XU, and A. RIPPS (*School of Dentistry, Louisiana State University, New Orleans, USA*).

**2989** An *in vitro* Evaluation of Bond Strength of Glass-ionomer Cements in Enamel and Dentin. L.C.G. PEREIRA\*, R.S.S. TERADA, R.G. PALMA, and M.F.L. NAVARRO (*Bauru Dental School, University of São Paulo, Brazil*).

**2990** Effect of Dentin Primer on Bond Strength of Resin-modified Glass Ionomers. K. IWASAKI\*, M. MIYAZAKI, K. HINOURA, S. ANDO, H. ONOSE, and B.K. MOORE (*Nihon University, Tokyo, Japan; and Indiana University, Indianapolis, IN, USA*).

**2991** Reliability of Retentive Strength of Different Temporary Cements. S. SCHNEIDER\*, C.-P. ERNST, E. STENDER, and B. WILLERSHAUSEN (*Department of Restorative Dentistry; and Institute for Dental Materials and Technology, Johannes Gutenberg University, Mainz, Germany*).

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**Seq#: 302**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Composite Bond Strength:      Dentin Bonding**

**2992** Shear Strength of Three Dentin Adhesive Bonding Resins. L.G. WATANABE, G.T. NONOMURA\*, J. SHEK, R.A. BARKHORDAR, G.W. MARSHALL, and S.J. MARSHALL (*University of California, San Francisco, USA*).

**2993** Bonding of Clearfil Liner Bond 2V to Enamel and Dentin. F.R. TAY\* and R.J. SMALES (*Faculty of Dentistry, University of Hong Kong, China*).

**2994** Micro-shear Bond Strengths to Dentin and Enamel: Pretreatment Effects. Y. SHIMADA\*, J.M. ANTONUCCI, G.E. SCHUMACHER, W.G. McDONOUGH, and J. TAGAMI (*Tokyo Medical and Dental University, Japan; and National Institute of Standards and Technology and American Dental Association Health Foundation, Paffenbarger Research Center, Gaithersburg, MD, USA*).

- 2995** Dentin Adhesives' Wettability and Shear Bond Strength. J.I. ROSALES\*, M. TOLEDANO, R. OSORIO, J. HOLGADO, and M.A. CABRERIZO (*University of Granada, Spain*).
- 2996** Compressive and Shear Bond Strength Properties of an Antimicrobial Composite. T.K. VAIDYANATHAN\*, J. VAIDYANATHAN, R.E. MONTGOMERY, and S.A. NATHOO (*New Jersey Dental School, Newark; and OraCeutical LLC, Monterey, MA, USA*).
- 2997** Dentin Shear Bond Strength of Adhesives Dispensed Prior to Use. J.R. GALLO\*, X. XU, and J.O. BURGESS (*School of Dentistry, LSU-MC, New Orleans, LA, USA*).
- 2998** Adhesion of New Simplified Adhesive Systems to Human Dentin. H. INOUE\*, S. INOUE, S. UNO, H. KOMATSU, and H. SANO (*School of Dentistry, Hokkaido University, Sapporo, Japan*).
- 2999** Bond Strength of Condensable Composite to Dentin and Bases. B.K. SO\*, L.B. ROEDER, and J.M. POWERS (*Houston Biomaterials Research Center, UT-Houston Dental Branch, TX, USA*).
- 3000** Shear Bond Strengths of Fifth-generation Dentin Bonding Systems. A. ABOUSHALA\*, E. HURLEY, M. FERRARI, and G. KUGEL (*Tufts University School of Dental Medicine, Boston, MA, USA*).
- 3001** *In vivo* and *in vitro* Bond Strengths of One-bottle Adhesive System to Cervical Dentin. Y. NARA\*, H. MITSUYASU, H. TANAKA, and I.L. DOGON (*Nippon Dental University, Japan; and Harvard School of Dental Medicine-Forsyth Dental Center, Boston, MA, USA*).
- 3002** Microtensile Bond Strength of Simplified Adhesives in Deciduous Dentin. N. CASTILHOS, S. GERALDELI, A. MANDELLI, C.T. SATO\*, and B.T. ROSA (*University of Mogi das Cruzes, São Paulo, Brazil; and University of North Carolina at Chapel Hill, USA*).
- 3003** Comparative Tensile Bond Strength to Dentin of Multiple- and Single-component Adhesives. M. BAZZUCCHI\*, G. MORI, and G. GORACCI (*Department of Operative Dentistry, University of Rome "La Sapienza", Italy*).
- 3004** Bonding to Dentin with New Self-etching Primer Systems. N. AKIMOTO\*, G. YOKOYAMA, A. KOHNO, S. SUZUKI, and C.F. COX (*Tsurumi University, Yokohama, Japan; and University of Alabama at Birmingham, USA*).
- 3005** Adhesion Comparison of Current Dual-cure Dental Adhesive Systems. J. SANG\*, P.D. HAMMESFAHR, and L.C. HAYES (*DENTSPLY/Caulk, Milford, DE, USA*).
- 3006** Microtensile Dentin Bond Strengths of Three One-bottle Adhesives. P.E.C. CARDOSO, M.R.O. CARRILHO, J.F.F. SANTOS\*, C. FRANCCI, and J. PERDIGÃO (*Department of Dental Materials, University of São Paulo, Brazil; and University of North Carolina, Chapel Hill, USA*).
- 3008** Color Stability of Flowable Composite Resins. J.R. DENTON\*, D.F. MURCHISON, and S. FLORES (*Wilford Hall Medical Center, Lackland AFB, Texas, USA*).
- 3009** Surface Gloss at Different Polishing Stages of Universal Type Composites. A. ISHIKAWA\* and Y. TANI (*Nippon Dental University at Tokyo; and University of East Asia, Shimonoseki-shi, Japan*).
- 3010** Thermal Diffusion in Some Resin/Ionomer Restorative Materials. G.K. TOWORFE\* and D.C. WATTS (*University of Manchester Dental School, UK*).
- 3011** Rheological Study of Dental Composites during Polymerization. R.Z. WANG\*, A. VERSLUIS, S.M. ROZZI, and W.H. DOUGLAS (*Minnesota Dental Research Center for Biomaterials and Biomechanics, University of Minnesota, Minneapolis; and 3M Company, St. Paul, MN, USA*).
- 3012** Unique Rheology of a New 3M Resin Cement. P.D. ARIO\* (*3M Dental Products Division, St. Paul, MN, USA*).
- 3013** Comparison of the Flow and Film Thickness of Flowable Composites. T. CULBREATH\*, M. TABASSIAN, and P.C. MOON (*MCV Dental School, Virginia Commonwealth University, Richmond, USA*).
- 3014** Effect of Filler Load on Contraction Stress and Volumetric Shrinkage. M.P. AARNTS, A. AKINMADE, and A.J. FEILZER\* (*Department of Dental Materials Sciences, ACTA, Amsterdam, The Netherlands*).
- 3015** Initial Degree of Polymerization Shrinkage Exhibited by Flowable Composite Resins. K. TOLIDIS\* and J.C. SETCOS (*Dental School, Aristotle University of Thessaloniki, Greece; and Dental School, University of Manchester, UK*).
- 3016** Relating Composite Contraction Stress to Leakage in Class V Cavities. J.L. FERRACANE\*, J.R. CONDON, B. PHAM, and J.C. MITCHEM (*Oregon Health Sciences University, Portland, USA*).
- 3017** Polymerization Shrinkage Forces of Condensable Composites. J.D. PEARSON\*, M.R. BOUSCHLICHER, and D.B. BOYER (*University of Iowa College of Dentistry, Iowa City, USA*).
- 3018** Video Imaging Used to Characterize Shrinkage Patterns of Dental Composites. T.E. LEE\*, I. CHOI, and M.L. LOEB (*MIOD Detection Technologies, LaGrange, IL; and Bisco Inc., Schaumburg, IL, USA*).
- 3019** Silver Sorption Staining in Aesthetic Dental Materials. L.H. MAIR\* and A.J. PRESTON (*Department of Clinical Dental Sciences, University of Liverpool, UK*).
- 3020** An *in vitro* Model of Restorative Dental Material Fluoride Recharge. A.J. PRESTON\*, E.A. AGALAMANYI, S.M. HIGHAM, and L.H. MAIR (*Department of Clinical Dental Sciences, University of Liverpool, UK*).
- 3021** Water Absorption of Several Compomer Materials. J.T. HENRY, C.Q. LEE\*, D. ANDERSON, G. WRIGHT, G. RITCHIE, and C.M. COBB (*School of Dentistry, University of Missouri—Kansas City, USA*).
- 3022** Filler Particle Characterization in Flowable and Condensable Composite Resins. M. TABASSIAN\* and P.C. MOON (*MCV Dental School, Virginia Commonwealth University, Richmond, USA*).
- 3023** Void Distribution and Shear Punch Strength of Glass-ionomer Cement. D. COVEY\* and N. EWOLDSEN (*UNMC College of Dentistry, Lincoln, NE, USA*).
- 3024** Surface Roughness of Polished Condensable Composites. L.B. ROEDER\*, W.H. TATE, and J.M. POWERS (*Houston*

**Seq#: 303**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Dental Composites – Physical Properties**

**3007** Spectrophotometric Analysis of Color Difference in Restorative Materials Using Bulk or Layering Technique. G. DONDI DALL'OROLOGIO\*, R. LORENZI, M. ANSELMINI, and V. OPISSO (*Department of Dental Materials, School of Dentistry, University of Bologna, Italy*).

*Biomaterials Research Center, UT-Houston Dental Branch, TX, USA).*

**3025** Linear and Volumetric Polymerization Shrinkage of Restorative Materials. M.F. DE GÓES\*, F. GARCÍA-GODOY, and H.L. CARDENAS (*Dental School of Piracicaba, UNICAMP, Brazil; and Health Sciences Center, University of Texas, San Antonio, USA*).

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**Seq#: 304**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Cast Alloys**

**3026** High-temperature Distortion of High-Palladium Metal-Ceramic Crowns. E. PAPAOGLOU\*, W.A. BRANTLEY, and W.M. JOHNSTON (*College of Dentistry, Ohio State University, Columbus, USA*).

**3027** Effects of Copper, Platinum, or Palladium on Gold Alloy Color. Y. MIYAGAWA\*, S. GOTO, H. OGURA, and Y. KUSAYANAGI (*The Nippon Dental University; School of Dentistry at Niigata; and GC Corporation, Tokyo, Japan*).

**3028** Soldered Joints in Low-gold Dental Alloys. A. ZADRO\*, G.B. GIRARDELLO, P. PASSI, and F. MARCON (*Dental School, University of Padua; and Private Practitioner, Bassano d/G, Italy*).

**3029** Geometry Influence of Soldered Joints on Fatigue Strength of Cobalt-Chromium Alloys. L. CORRER SOBRINHO\*, M.B. CANGIANE, S. CONSANI, and M.A.C. SINHORETI (*Department of Biomaterials, Piracicaba Dental School, UNICAMP, São Paulo, Brazil*).

**3030** Acoustic Emission Analysis in Dental Soldering with High-frequency Soldering Machine. S.-Y. LEE\*, M.-H. WANG, H. TSENG, C.-T. LIN, and H.-C. CHENG (*Graduate Institute of Oral Rehabilitation Sciences, Taipei Medical College, Taiwan, ROC*).

**3031** Comparative Study of Fast-setting Investment Materials: A Pilot Study. P. HANSEN and M. TEOH\* (*University of Missouri—Kansas City School of Dentistry, USA*).

**3032** Slip Casting of Titanium Powder. S. OHKAWA\*, K. ISHII, S. KONDO, M. UO, T. SUGAWARA, and F. WATARI (*School of Dentistry, Faculty of Engineering, Hokkaido University, Sapporo, Japan*).

**3033** Bond Strength of Binary Titanium Alloys to Porcelain. M. YODA\*, T. KONNO, Y. TAKADA, K. IJIMA, J. GRIGGS, O. OKUNO, K. KIMURA, and T. OKABE (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA; and Tohoku University, Japan*).

**3034** Machinability of Commercial Ti Alloys. S. KIYOSUE\*, C. OHKUBO, T. ITOH, T. FUKUSHIMA, M. MATSUMOTO, and T. OKABE (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA; and Fukuoka Dental College, Japan*).

**3035** Machinability of Experimental Ti-Cu Alloys. T. OKABE\*, S. KIYOSUE, M. WOLDU, Z. CAI, M. YODA, J. GRIGGS, O. OKUNO, and Y. TAKADA (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA; and Tohoku University, Sendai, Japan*).

**3036** Age-hardening Reactions of New Pd-free Gold Alloys for Porcelain Bonding. T. SHIRAIISHI\*, M. OHTA, M. NAKAGAWA, and S. MATSUYA (*Faculty of Dentistry, Kyushu University, Fukuoka, Japan*).

**3037** Clinical Comparison of Two Precious Alloys for Metal Ceramic Crowns—A Double-blind Study. J. SETZ\*, B. FRANK, and D. LANG (*Department of Prosthodontics, University of Tuebingen, Germany*).

**3038** Oxidization Products in a Copper-containing Pd Alloy for Metal-Ceramic Restoration. J.E. TIBBALLS\*, M. SYVERUD, H. HERØ, and O.-B. KARLSEN (*NIOM and Centre for Materials Science, University of Oslo; NIOM, Haslum; and University of Oslo, Norway*).

**3039** Observations on the Mechanical Retention of Prefformed Crowns. E.F. HUGET\* and T.R. SMITH (*University of Tennessee, Memphis, USA*).

**3040** Quantitative SEM Assessment of Early Bacterial Adhesion on cp Ti and Alloyed Ti Surfaces *in vivo*. W.-D. GRIMM\*, V. BRAASCH, and I. SCHMITZ (*Department of Periodontology, University of Witten; and Institute of Pathology, University Clinic Bochum, Germany*).

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**Seq#: 305**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Dental Materials - Cavity Preparation, Polishing, Mixing**

**3041** Times Required for Cavity Preparation Using Ultrasonic Tips. M. ÖZCAN, I. NERGİZ\*, P. PFEIFFER, and R. TÛTÛNCÛ (*University of Marmara-Istanbul, Turkey; University of Hamburg and University of Cologne, Germany*).

**3042** Effect of Cavity Preparation on Composite Restoration Microleakage Behavior. E.I. ADACHI\*, J.A. von FRAUNHOFER, D.M. BARNES, E. ROMBERG, and G. MINAH (*University of Maryland Dental School, Baltimore, USA*).

**3043** Placement Techniques and Porosity in Conservative Class II Glass-ionomer Restorations. F. WASTI, T.V. MACFARLANE, and N.H.F. WILSON\* (*University of Manchester, UK*).

**3044** Weight Loss Comparison among Three Composite Polisher Points. A.T. MELO\*, A. MONNERAT, M. JOÃO, and M.I. SOUZA (*Institute of Dentistry, Gama Filho University, Rio de Janeiro, Brazil*).

**3045** The Appropriate Load for Cutting with High-speed Contra-angle Handpieces. M. YAMAUCHI\*, T. SHIMOMURA, M. SAKAI, and T. NAGASAWA (*Post-doctoral Institute and Prosthodontics, School of Dentistry, Asahi University, Gifu, Japan*).

**3046** Clinical Evaluation of a New Dental Materials Mixer. M. HARTUNG\*, M.A. VARGAS, D.S. COBB, and G.E. DENEHY (*University of Iowa, Iowa City, USA*).

**3047** Effect of Sonic Energy on Sealant Penetration. K.B. FRAZIER, T.J. ADAMS\*, and C.M. RUSSELL (*Medical College of Georgia, Augusta, USA*).

**3048** Effects of Surface Treatments on the Wettability of a Porcelain Alloy. A. ZA'IMOGLU, N. ÖZDEN\*, and S. ERKUT (*Department of Prosthodontics, Ankara University, Turkey*).

**3049** Characterization of a Pre-activated Silane Solution by FT-IR. T. HOOSHMAND\*, R. VAN NOORT, and A. KESHVAD (*Department of Restorative Dentistry, School of Clinical Dentistry, University of Sheffield, England*).

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**Seq#: 306**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Diagnostic Systems - Radiology**

- 3050** Dental-CT for Evaluating the Optimal Palatal Position of Orthodontic Implants. T. BERNHART\*, R. WEBER, A. GAHLEITNER, and A. VOLLGRUBER (*Department of Oral Surgery, Dental School, University of Vienna, Austria*).
- 3051** Comparison of Alveolar Bone Densities Using Digital and Conventional Radiography. T.E. SOUTHARD\* and K.A. SOUTHARD (*University of Iowa, Iowa City, USA*).
- 3052** Alveolar Bone Lesion Detection with Conventional, Direct Digital, and Digital Subtraction Radiographic Images. T.T. SUZUKI\*, J. YANG, G.L. CONOVER, and T.E. RAMS (*School of Dentistry, Temple University, Philadelphia, PA, USA*).
- 3053** 3D Cephalometric Analysis from CT Scans: A Statistical Approach. C. MADRID\*, F. BOUCAYS, B. COURTOIS, F. VAYSSE, and J. CASTEIGT (*Unit of Biometry, Laboratory of Biomaterials, University of Toulouse, France*).
- 3054** Radiographic Contrast Perceptibility Using a Laptop Computer Screen. K.A. SABEY\*, W.S. MOORE, D.F. MURCHISON, and S.D. WESTBROOK (*Wilford Hall Medical Center, Lackland AFB, Texas, USA*).
- 3055** Quantification of Dose Reduction by Digital Cephalometric Radiography. H. VISSER, T. RÖDIG\*, and K.P. HERMANN (*Department of Periodontology and Department of Medical Physics, University of Göttingen, Germany*).
- 3056** Comparative Evaluation of Two Digital Technologies for Dental Radiographs: CCD-sensor (SIDEXIS) vs. Sensor Plate (DIGORA). T. HILGART\*, R. SCHULZE, F. SCHALLDACH, and B. D'HOEDT (*Department of Oral Surgery, University of Mainz, Germany*).
- 3057** Diagnostic Utility of Thermal Printed Panoraphs vs. Computer Monitor Images. G.H. GUERRANT\*, W.S. MOORE, and D.F. MURCHISON (*Wilford Hall Medical Center, Lackland AFB, Texas, USA*).
- 3058** The Reliability of a New Technique for Correction of Magnification Distortion Measurements in Panoramic Radiography. T. EL-BIALY\*, Z. MUHL, and D.R. HERTZBERG (*Department of Orthodontics, College of Dentistry, University of Illinois at Chicago, USA*).
- 3059** Images of the Hard Palate and Nasal Fossa Floor in Modern Panoramic X-ray Machines. L.R. AZEVEDO\*, C.A. DAMANTE, L. IWAKI FILHO, and J.H. DAMANTE (*Bauru Dental School, University of São Paulo, Brazil*).
- 3060** Mandibular Superimposition Using Björk Structures Seen on Panoramic Radiographs. D.M. MAINA\*, D.R. HERTZBERG, A.A. FIGUEROA, E.A. BEGOLE, and C.A. EVANS (*College of Dentistry, University of Illinois at Chicago, USA*).
- 3061** Light Intensity and Recycling Time for the DenOptix Photostimulable Phosphor Panoramic Plate. A.G. FARMAN\* and T.T. FARMAN (*University of Louisville, KY, USA*).
- 3062** A Comparative Analysis of Right- and Left-side Roentgenocephalometrics. T. SCHIFF and B.K. CAILLOUEL\* (*University of the Pacific School of Dentistry, San Francisco, CA, USA*).
- 3063** Evaluation of Logarithmic Image Subtraction Method in Bone Density Change Measurement. E.D. KUHL\* and P.V. NUMMIKOSKI (*University of Texas Health Science Center at San Antonio, USA*).
- 3064** Evaluation of a New Subtraction Radiography System: Angular Reproducibility. M. RONDEROS\*, C.C. KO, J. HODGES, B.S. SPARKS, and R. DeLONG (*Minnesota Dental*

*Research Center for Biomaterials and Biomechanics, University of Minnesota, Minneapolis, USA*).

**Seq#: 307** **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Behavioral Sciences & Health Services Research - Medicine and Dentistry**

- 3065** Retrospective Review of Dental Findings in Acquired Brain Injury Patients. K.L. BURGESS\* and W. TANG (*Rehabilitation Institute of Toronto, Ontario, Canada*).
- 3066** Guardians' Evaluation of Logistics Aspects Related to Dental Care of Handicapped Patients. C. MEDEIROS\*, A.C. AQUINO, M. FORNASARI, A.S. VIEIRA, M.J. TAVARES, and R.B.C. VIANNA (*Odontopediatria/CEDROS, Federal University of Rio de Janeiro, Brazil*).
- 3067** Oral Health Challenges among Developmentally Disabled Individuals in New York. R. SANTOS\*, M.E. MOSS, C. MEYEROWITZ, H. MALMSTRÖM, S. SULKES, and T.J. ROACH (*University of Rochester Eastman Department of Dentistry, NY, USA*).
- 3068** Behavioral Analysis of Oral Hygiene for the Disabled. Y. SATOH\* and T. YASUI (*School of Dentistry, Meikai University, Saitama, Japan*).
- 3069** Predictors of Dental Treatment in French Down Syndrome Individuals. P.J. ALLISON\* and M. HENNEQUIN (*Faculty of Dentistry, McGill University, Montreal, Canada; and Faculté de chirurgie dentaire, Université d'Auvergne, Clermont Ferrand, France*).
- 3070** Oral Hygiene and Gingival Health of Children at Risk for Infective Endocarditis. D.B. SILVA\*, F.C. FREITAS, G.F. CASTRO, J.G. JOHNSEN, M.C.A. CUNHA, and I.P.R. SOUZA (*School of Dentistry, Federal University of Rio de Janeiro, Brazil*).
- 3071** Oral Health Status and Diabetes Mellitus among Hispanic Females. R. DE LOS SANTOS\* and S. NARENDRAN (*University of Texas at Houston Dental Branch, USA*).
- 3072** Oral Health of Pediatric Cardiac Patients. A. PALJM\* and D. MARKOVIC (*Faculty of Stomatology, University of Belgrade, Yugoslavia*).
- 3073** Oral Infections Not Causally Related to Coronary Heart Disease Deaths. R. TUOMINEN\*, M. PAUNIO, I. PAUNIO, A. REUNANEN, and A. AROMAA (*Department of Public Health, University of Helsinki, Finland*).
- 3074** Oral Health Status of Individuals 80 Years in Age in Iwate Prefecture, Japan. M. YONEMITSU\*, D. INABA, A. ABE, M. KISHI, F. AIZAWA, Y. SOMEYA, and N. HANADA (*Preventive Dentistry, Iwate Medical University, Morioka; and National Institute of Infectious Disease, Tokyo, Japan*).
- 3075** Oral Disease and Dental Care Utilization among Renal Transplant Recipients. C. SHIBOSKI\*, D. LAUBER, K.W. LIN, and W. AMEND (*University of California at San Francisco, USA*).
- 3076** Oral/Dental Variables in Renal and Hemodialysis Patients. C.E. MACHADO\*, W.A. BRETZ, O. BIONDI, J. BACCI, L. BELASALMA, R. SOUZA, A. GROMATSKY, and M.C. CONDE (*University São Francisco, Brag. Paulista, Brazil; and University of Pittsburgh, PA, USA*).
- 3077** The Use of Medical Consultations: A Survey of Alberta Dentists. I.M. KUC\*, C. BOTCHWAY, D. DHAMRAIT, and K. TAN (*University of Alberta, Edmonton, Canada*).



**3078** Oral Health Team, Feelings, and Expectations Regarding Health Concepts, Practice, and Services. A.R. RAMOS\*, R.B.C. VIANNA, L.F.R. TURA, and M.M.F. MAGNANINI (*Pediatric Dentistry-F.O.-UFRJ/NESC-UFRJ, Brazil*).

**Seq#: 308**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Behavioral Sciences & Health Services Research - Orofacial Pain, TMD, and Trauma**

**3079** Field Testing the Orofacial Pain Component of NHANES IV. S.M. GORDON\*, J. BRUNELLE, K.H. HUGGINS, and D. WINN (*NIDCR/NIH, Bethesda, MD; and University of Washington, Seattle, USA*).

**3080** Health Care Utilization by Older Adults for Painful Orofacial Symptoms. J.L. RILEY, III\*, G.H. GILBERT, and M.W. HEFT (*University of Florida, Gainesville, USA*).

**3081** Predicting Treatment Compliance Following Facial Pain Evaluation. M.E. ROBINSON\*, J.L. RILEY, III, E.A. WISE, L.C. CAMPBELL, and H.A. GREMILLION (*University of Florida, Gainesville, USA*).

**3082** SF-36 Scores of TMD, Chronic Back Pain, Combined Pain Patients, and Controls. N. MEHTA\* and A. FORGIONE (*Tufts University School of Dental Medicine, Boston, MA, USA*).

**3083** Pain Level and Variation in TMD Patients. M. LITT\* (*School of Dental Medicine, University of Connecticut, Farmington, USA*).

**3084** Prevalence and Risk Indicators Associated with Temporomandibular Disorders in a Young Population. J. CASANOVA\*, G. JIMÉNEZ, and M. GUTIÉRREZ (*Faculty of Dentistry Autonomous of Campeche, México*).

**3085** Case-control Study of Risk Factors for Temporomandibular Disorders. A.M. VELLY\*, P. PHILIPPE, and M. GORNITSKY (*Université de Montréal; Jewish General Hospital; and McGill University, Québec, Canada*).

**3086** Risk Factors for Disc Displacement—A Case-control Study. M. GORNITSKY\*, P. PHILIPPE, and A.M. VELLY (*Jewish General Hospital; McGill University; and Université de Montréal, Québec, Canada*).

**3087** Pain and Anxiety in Patients Attending a Hospital Dental Casualty Unit. G. SINGH, A.C. MELLOR\*, and T.V. MACFARLANE (*Department of Oral Health and Development, Turner Dental School, Manchester, UK*).

**3088** Predictors of Physical and Psychosocial Outcomes for Orofacial Injury Patients. K. ATCHISON\*, V. SHETTY, and T. BELIN (*University of California at Los Angeles School of Dentistry and Neuropsychiatric Institute, USA*).

**3089** The Prevalence of Domestic Violence in a Dental Patient Population. K. GIANNETTI\* and B. GERBERT (*University of California, San Francisco, USA*).

**3090** Prevalence and Characteristics of Child and Adolescent Abuse. A.M.G. VALENÇA\* and F.V.G. ABREU (*Social Dentistry—UFF—Niterói, Pediatric Dentistry—UFRJ—UNESA—Rio de Janeiro, Brazil*).

**3091** Prevalence of Oro-facial Injuries Due to Child Abuse/Neglect in Illinois. C. FURUSHO\*, S. FADAVI, and I.C. PUNWANI (*Department of Pediatric Dentistry, University of Illinois at Chicago, USA*).

**Seq#: 309**      **Saturday, March 13, 11:00 am - 12:15 pm**

**Poster Session, Exhibit Hall B&C**

**Behavioral Sciences & Health Services Research - Oral Cancer: Epidemiological Methods**

**3092** Oral Mucosal Lesions in Adults in Southern China. H.C. LIN, E.F. CORBET\*, and E.C.M. LO (*Faculty of Dentistry, University of Hong Kong*).

**3093** The Effect of Betel Quid Chewing on Oral Mucosal Lesions in Aborigines of Taiwan. Y.H. YANG\* and T.Y. SHIEH (*Graduate Institute of Oral Health Sciences, Kaohsiung Medical College, Taiwan, ROC*).

**3094** The Intervention Trial for Betel Quid Cessation in Taiwan. J.-S. HUANG\*, C.-S. WANG, and Y.-S. KUO (*National Cheng Kung University Hospital, National Taiwan University, ROC*).

**3095** Head and Neck *in situ* Carcinoma: Incidence, Trends, and Survival. B.C. REID\*, D. WINN, D.E. MORSE, and D.G. PENDRYS (*Department of Behavioral Sciences, University of Connecticut School of Dental Medicine, Farmington; and NIDCR/NIH, Bethesda, MD, USA*).

**3096** Estimations of an Ecological Lag Period: Farming and Lip Cancer. W.J. PSOTER\* and D.E. MORSE (*University of Connecticut, Farmington, USA*).

**3097** Smoking and Drinking in Relation to Oral Squamous Cell Carcinoma and Oral Epithelial Dysplasia. D.E. MORSE\*, M.B. SMALL, M.A. MOHIT-TABATABAI, J.L. DOYLE, and E. EISENBERG (*University of Connecticut, Farmington; University of Medicine and Dentistry of New Jersey; and East Orange VA, USA*).

**3098** Evaluating Risk Factors for Oral Cancer Using Population-based Surveillance Data. L.A. MUCCI\* and D.R. BROOKS (*Department of Oral Epidemiology and Health Policy, School of Public Health, Harvard University; and Massachusetts Department of Public Health, Boston, USA*).

**3099** Association between Tobacco, Alcoholism, and Diabetes with Oral Lesions in the Clinical Admissions to the Dentistry School of the National Autonomous University of Mexico. A. PINEDA, G. LOPEZ, B. ALDAPE\*, and A. BORGES (*Dentistry School, UNAM, Mexico City, Mexico*).

**3100** Comparative Study of Mortality from Oral Cancer in the Brazilian Regions. L.H.M. NEVES\* (*School of Dentistry, UNESP, Araraquara, São Paulo, Brazil*).

**3101** Dental Oncology Education Program in Texas—A Review. K. SHETTY\*, D.L. JONES, K.V. RANKIN, and J.P. BROWN (*College of Dentistry, Ohio State University, Columbus; and University of Texas Health Science Center, San Antonio, USA*).

**Seq#: 310**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Implantology - Implant/Gingival Interface and Implantitis**

**3102** Healing of the Peri-implant Mucosal Tissues Following Clinical Probing. T.H. ETTER\*, I.H. HÅKANSON, P.M. TREJO, R.G. CAFFESSE, C.H.F. HÄMMERLE, and N.P. LANG (*University of Bern, Switzerland; and UTHSC, Houston, TX, USA*).

**3103** Proteases Associated with Implant Failure. P.K. MOY and P.W. JOHNSON\* (*Dental Implant Center, University of*

California, Los Angeles; and Department of Stomatology, University of California, San Francisco, USA).

**3104** The Effect of Internal Microbial Contamination on the Clinical Parameter of Implants. L. RIMONDINI\*, C. MARIN, and A. CARRASSI (Department of Oral Pathology and Medicine, University of Milan, Italy).

**3105** Clinical Response to Two Different Therapeutic Regimens to Treat Peri-implant Mucositis. R. PORRAS\*, P.M. TREJO, G.B. ANDERSON, and R.G. CAFFESSE (Department of Stomatology, Division of Periodontics, University of Texas at Houston Health Science Center, USA).

**3106** Clinical Evaluation of Peri-implantitis Treatment in Dogs. M.A.N. MACHADO\*, C.M. STEFANI, R. CESCO, V.A. TRAMONTINA, and F.H. NOCITI, Jr. (Faculdade de Odontologia Piracicaba—UNICAMP, São Paulo, Brazil).

**3107** Monitoring of Dental Implants by Peri-implant Circular Fluid Aspartate Aminotransferase Levels. S. YALÇIN\*, A. KANTARCI, C. UYGUR, F. YALÇIN, and E. FIRATLI (Departments of Oral Implantology and Periodontology, School of Dentistry, University of Istanbul, Turkey).

**3108** Modification of Dental Implants with Ag for Improvement of Antibacterial Activity. T. KAJIMOTO\*, T. TANABE, S. OHASHI, K. KOMAGATA, T. NAKAGAWA, and K. YAMAMOTO (Department of General Dentistry, School of Dentistry, Asahi University, Japan).

**3109** Immunohistological Study of Experimental Peri-implantitis and Periodontitis in Dogs. M. OTA\*, H. KITAMURA, and S. YAMADA (Department of Periodontics, Tokyo Dental College, Chiba, Japan).

**3110** Effect of Nicotine on Proliferation of Osteoblast-like Cells to Titanium. R. ZOJAJI\*, G.J. PINERO, M.C. FARACH-CARSON, and R.G. CAFFESSE (Dental Branch, University of Texas at Houston Health Science Center, USA).

**3111** Effect of Nicotine on Proliferation of Fibroblasts to Titanium. A.J. MORETTI\*, R.J. NEMETZ, G.J. PINERO, M.C. FARACH-CARSON, and R.G. CAFFESSE (Dental Branch, University of Texas at Houston Health Science Center, USA).

**3112** Ultrastructural Interface between Implant and Peri-implant Epithelium of Rat. H. IKEDA\*, T. YAMAZA, Y. AYUKAWA, M. YOSHINARI, T. INOUE, M. SHIMONO, K. KOYANO, and T. TANAKA (Faculty of Dentistry, Kyushu University, Fukuoka; and Tokyo Dental College, Chiba, Japan).

**3113** Histo-cytological Study of Guided Bone Regeneration Using Rat Mandibles. M. SAWAGUCHI\*, O. MORITA, I. KAGEYAMA, and K. KOBAYASHI (Department of Complete Denture and Anatomy, The Nippon Dental University School of Dentistry at Niigata, Japan).

**3114** Bone Defects Treated with Bone Chips of Different Dimensions: A Histological Study in Man. A. IMPERATRICE\*, A. SCARANO, S. TETÈ, L. CIAVARELLI, M. PIATTELLI, and A. PIATTELLI (Dental School, University of Chieti, Italy).

**3115** A Computerized Histomorphometric Analysis of a Maxillary Onlay Bone Graft. E. REZVAN\*, J.C. MITCHELL, J. BETANCOURT, and L. KUPP (College of Dentistry and Microscopic/Chemical Analysis Research Center, Ohio State University, Columbus, USA).

**3116** Clinical, Histological, and Ultrastructural Aspects of Alloderm in Implant Dentistry. M. CIRULLI\*, A. SCARANO, L. ARTESE, M. DI MUZIO, M. PIATTELLI, A. ROCCI, L. CIAVARELLI, and A. PIATTELLI (Dental School, University of Chieti, Italy).

**Seq#: 311** **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Cariology Research - Clinical Studies, Diagnosis**

**3117** The Kungsholmen Elders Oral Health Study: Association of Salivary Flow with Coronal and Root Caries. E.M. NELSON\*, R.V. KATZ, P. HOLM-PEDERSEN, J. HOLM-PEDERSEN, M. VIITANEN, and B. WINBLAD (School of Dental Medicine, University of Connecticut, Farmington, USA; and the Karolinska Institutet, Stockholm Gerontologic Research Center, Sweden).

**3118** Effect of After-meal Sugarfree Gum-chewing on Clinical Caries. J. SZÖKE\*, H.M. PROSKIN, and J. BÁNÓCZY (Semmelweis University of Medicine, Budapest, Hungary; and H.M. Proskin & Associates, Inc., Rochester, NY, USA).

**3119** Evaluation of the Shapes of Fissures of Human Permanent Molars. M. TOSTES\*, M. MONICO, and A.C. GUEDES-PINTO (Department of Pediatric Dentistry, UFF/USP, Brazil).

**3120** Cochrane-style Review of Enamel Erosion Literature (1980-98): A Critical Appraisal of Experimental, Clinical, and Review Information. J.M. RAY\*, G. MAUPOMÉ, and F.J. DÍEZ-de-BONILLA (Faculty of Dentistry, University of British Columbia, Vancouver, Canada; and Facultad de Odontología, Universidad Nacional Autónoma de México).

**3121** Placement/Replacement of Restorations in Private Practice: Porto Alegre, Brazil. J.P.P. OLIVEIRA\*, C. GONZÁLEZ-CABEZAS, L.H. ZOTTIS, C.R. FORTUNA, M. FONTANA, and G.K. STOOKEY (Indiana University, Indianapolis, USA; and Pontificia Universidade Católica do Rio Grande do Sul, Brazil).

**3122** Caries Development Pattern of First Permanent Molars in Korean Schoolchildren. B.K. CHO\* and H.K. KWON (Department of Preventive Dentistry and Public Oral Health, College of Dentistry, Yonsei University, Seoul, Korea).

**3123** Clinico-Pathological Studies on Caries Lesions in the Permanent Teeth of the Japanese Population. Y. NAKAHARA\*, T. MAEDA, O. KOBAYASHI, H. TANAKA, H. YAGISHITA, and T. AOBA (Departments of Operative Dentistry and Pathology, Nippon Dental University, Tokyo, Japan).

**3124** Dental Caries Scoring in Clinical Trials Involving Variable Premolar and Second Molar Eruption. A.M. ACEVEDO\*, H. KAUFMAN, R. CHATTERJEE, L. CANCRO, and I. KLEINBERG (Central University of Venezuela; and SUNY, Stony Brook, NY, USA).

**3125** Evaluation of *in situ* Root Caries Using Surface Microhardness Testing. H. PERINPANAYAGAM\*, S. CZACH, and D.T. ZERO (Eastman Department of Dentistry, University of Rochester, NY; and Department of Endodontics, University of Iowa, Iowa City, USA).

**3126** Occlusal Caries Diagnosis Using the Diagnodent: *In vitro* Reproducibility and Comparison with Electrical and Visual Diagnosis. A.C. PEREIRA\*, E.H. VERDONSCHOT, and M.C.D.N.J.M. HUYSMANS (University of Campinas, São Paulo, Brazil; and Universities of Nijmegen and Groningen, The Netherlands).

**3127** Caries Detection Accuracy by Multiple Clinicians and Techniques. C.C. THOMAS\*, M.F. LAND, S.A. WILSON, and G.P. STEWART (School of Dental Medicine, Southern Illinois University, Alton, USA).

**Seq#: 312**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Oral/Dental Hygiene - Dentifrice and Anticalculus Agents**

**3128** Zinc Binding to Hydroxyapatite. M. RUBIN\*, L.M. MUSTAFA, B.M. LUDVIGSEN, and M.K. NAIR (*Warner-Lambert Co., Morris Plains, NJ, USA*).

**3129** *In vitro* Calculus Crystal Growth Inhibition with Zinc Chloride. P.C. PAN\*, K. MUCHHALA, M. RUBIN, C. BLEIWEIS, and R.Z. LeGEROS (*Warner-Lambert Co., Morris Plains, NJ; and New York University College of Dentistry, USA*).

**3130** Inhibitory Effect of Zinc Chloride on *in vitro* Calculus Formation. M. RUBIN, S.S. O'NEILL, C. BLEIWEIS, and J.P. LeGEROS\* (*Warner Lambert Co., Morris Plains, NJ; and New York University, USA*).

**3131** Novel Model for Evaluating Anticalculus Efficacy of Tartar Control Dentifrices. D.J. WHITE, S.L. CAMPBELL\*, J.D. HYDE, and R.W. GERLACH (*Procter & Gamble, Cincinnati, OH, USA*).

**3132** Toothpaste with Cetylpyridinium Chloride, Imidazoline, and Chelating Agent—Clinical Evaluation. J. NUNES\*, H. PANZERI, and E.H.G. LARA (*FCF and FO Ribeirão Preto, USP, Brazil*).

**3133** Toothpaste and Fluoride Amounts Ingested from Toothpastes Used by Children Aged 3 to 9 Years. A.B.C. KASSAWARA\*, R.M. PUPPIN-RONTANI, and C.R.D.M. RODRIGUES (*Department of Pediatric Dentistry, FOP/UNICAMP and FOUSP, São Paulo, Brazil*).

**3134** Modified Dispensing Device and Orientation: Effects on Quantity of Toothpaste. J.M. MIASATO, U.V. MEDEIROS, R.S. GAMA, and R.S.A. REIS\* (*School of Dentistry, UNIGRANRIO-RJ/UFRJ, Rio de Janeiro, Brazil*).

**3135** *In vitro* Technique for Measuring the Abrasivity of Commercially Available Dentifrices on Human Enamel. S.J. SINGLETON\*, P. DOYLE, and E. HUNTINGTON (*Unilever Dental Research, Bebington, UK*).

**3136** Influence of Slurry Dilution in Laboratory Toothpaste Abrasivity Measurements. L. COFFMAN\*, M.L. BERG, and J.J. HEFFERREN (*Higuchi Biosciences Center, University of Kansas, Lawrence, USA*).

**3137** Metrology: A Novel Method to Measure Plaque Removal by Dentifrices. P.C. WATERFIELD\*, B.H. SHEARER, E. LYNCH, V. JOVANOVSKI, and C. MORRIS-CLAPP (*Unilever Dental Research, Bebington; and St. Barts. & R.L.S.M.D., UK*).

**3138** Comparative Antiplaque/Antigingivitis Efficacy: Listerine Antiseptic Mouthrinse and Colgate Total Dentifrice. N.C. SHARMA, H.J. GALUSTIANS, J.G. QAQISH, C.H. CHARLES\*, J.W. VINCENT, and J.A. MCGUIRE (*BioSci Research Canada Ltd., Mississauga, Ontario; and Warner-Lambert Co., Morris Plains, NJ, USA*).

**Seq#: 313**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Mineralized Tissue - Tools for Therapy**

**3139** Enamel Apatite in the Lighter Density was the Lower Crystalline. T. SAKAE\*, K. SUZUKI, O. TADOKORO, and Y. KOZAWA (*Department of Anatomy, Nihon University School of Dentistry at Matsudo, Japan*).

**3140** A SEM Comparison of Er:YAG Pulsed and CO<sub>2</sub> Superpulsed Lasers on Deciduous Tooth Enamel. D.G. BORGES\*, I. WATANABE, and A. BRUGNERA (*Pediatric Dentistry Department, FOUSP; Anatomy Department, ICB-University of São Paulo; and Camilo Castelo Branco University, São Paulo, Brazil*).

**3141** Human Enamel Changes by Er:YAG Laser Irradiation. T. EGURO\*, T. MAEDA, M. OGAWA, Y. NISHIMURA, M. OTSUKI, and H. TANAKA (*Department of Operative Dentistry and Dental Research Institute, Nippon Dental University, Tokyo, Japan*).

**3142** Vertical Scanning Interferometry Used to Measure Laser Effects on Teeth. C.E. MERCER\* (*Saint Bartholomew's and Royal London School of Medicine and Dentistry, England, UK*).

**3143** Influence of a Lipid-Saliva Emulsion on Brushing-Abrasion of Erosions. W. BUCHALLA\*, T. ATTIN, and E. HELLOWIG (*Department of Operative Dentistry and Periodontology, University of Freiburg, Germany*).

**3144** Comparative Efficacy of Different Toothpastes on Inhibiting Calcium Phosphate *in vitro*. S. SUNDARESH\*, D. MIJARES, J.P. LeGEROS, and R.Z. LeGEROS (*New York University College of Dentistry, NY, USA*).

**3145** *In vitro* Model for Assessing Dentifrice Stain Inhibition and Removal. R.V. FALLER\* and S.L. EVERSOLE (*Procter & Gamble Company, Cincinnati, OH, USA*).

**3146** Antitartar Evaluation of a Baking Soda Calcium Peroxide NaF Dentifrice. D.J. WHITE, E.R. COX\*, and J. WARRICK (*Procter & Gamble, Mason, OH; and Indiana University OHRI, Indianapolis, USA*).

**3147** Surface Properties of Enamel Following Stain Removal by Cleaning Dentifrices. H. DUSCHNER, D.J. WHITE, and W.F. LANDRIGAN\* (*Procter & Gamble, Mason, OH, USA; and University of Mainz, Germany*).

**3148** Effects of Porosity on Strength and Dissolution of Bone Cement. M. MARKOVIC\*, S. TAKAGI, and L.C. CHOW (*American Dental Association Health Foundation-Paffenbarger Research Center, National Institute of Standards and Technology, Gaithersburg, MD, USA*).

**3149** A Dual Constant-composition Model for Resorption of Calcium Phosphate Implants. L.C. CHOW\*, S. TAKAGI, S. HIRAYAMA, and M. MARKOVIC (*American Dental Association Health Foundation-Paffenbarger Research Center, National Institute of Standards and Technology, Gaithersburg, MD, USA; and Nihon University, Chiba, Japan*).

**3150** Histological and Ultrastructural Evaluation of a Polymer-Hydroxyapatite Composite Membrane in Man. C. MANGANO\*, A. SCARANO, M. PIATTELLI, R. MARTINETTI, and A. PIATTELLI (*Dental School, University of Chieti; and Finceramica, Faenza, Italy*).

**3151** Bone Defects Healing with Calcium Sulfate: Experimental Study in Rabbits. S. DI SILVESTRO\*, A. SCARANO, M. PIATTELLI, L. DI ALBERTI, and A. PIATTELLI (*Dental School, University of Chieti, Italy*).

**3152** Histological Evaluation of the Resorption of HTR Particles in Rabbits. G. ORSINI\*, M. PIATTELLI, A. SCARANO, and A. PIATTELLI (*Dental School, University of Chieti, Italy*).

**3153** New Bioactive Glass Fiber for BMP Carrier with Geometrically Feasible Structure. J. MAHMOOD\*, H. TAKITA, M. KOBAYASHI, T. KOHGO, and Y. KUBOKI (*Department of Biochemistry, School of Dentistry, Hokkaido University; and Chiba Institute of Technology, Japan*).

**Seq#: 314**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Mineralized Tissue - Cementum – Periodontal Tissues**

**3154** Characterization and Distribution of Glycosaminoglycans in Periosteum. S. PORNPRASERTSUK\*, R. SATO, H. CHENG, and M. YAMAUCHI (*Dental Research Center, University of North Carolina at Chapel Hill, USA*).

**3155** Comparative Collagen Cross-link Analyses in Rat Dental Tissues. A. WOJTOWICZ\*, G.S. CHANDLER, and M. YAMAUCHI (*Dental Research Center, University of North Carolina, Chapel Hill, USA; and Department of Dental Surgery, Medical University of Warsaw, Poland*).

**3156** Early Induction of Alkaline Phosphatase Gene in Mechanically Stressed Periodontal Osteoblasts. J. GLUHAK\*, E. GOLDMAN, A. VILLARREAL, L. RAMIREZ, S.E. URIAS, and D. PAVLIN (*University of Texas Health Science Center, San Antonio, USA*).

**3157** Response of Osteoblast Marker Genes to Mechanical Stress in Acellular Cementum. L. RAMIREZ\*, J. GLUHAK, S.E. URIAS, E. GOLDMAN, and D. PAVLIN (*University of Texas Health Science Center, San Antonio, USA*).

**3158** Effect of Mechanical Stress on Bone Markers in Cellular Cementum. S.E. URIAS\*, J. GLUHAK, L. RAMIREZ, E. GOLDMAN, and D. PAVLIN (*University of Texas Health Science Center, San Antonio, USA*).

**3159** Immunolocalization of Cementum Attachment Protein (CAP) in Human Teeth. J. BOURNE\*, G.J. KING, and A.S. NARAYANAN (*University of Washington, Seattle, USA*).

**3160** Cementum Attachment Protein Production by Bovine Tooth Germs. M. SAITO\*, G. MINAMIDA, T. KAWASE, T. TERANAKA, and A.S. NARAYANAN (*Kanagawa Dental College, Yokosuka, Japan; and University of Washington, Seattle, USA*).

**3161** Phenotypic Stability of Periodontal Ligament Cells in Culture. P.K. LEKIC\*, J. ROJAS, C. BIREK, H.C. TENENBAUM, and C.A.G. McCULLOCH (*Faculty of Dentistry, University of Manitoba, Winnipeg; and University of Toronto, ON, Canada*).

**3162** Fibroblastic Cells from Periapical Granuloma Have the Ability to Mineralize. H. MAEDA\*, H. NAKAMUTA, N. WADA, I. HASHIGUCHI, and A. AKAMINE (*Department of Operative Dentistry and Endodontology, Kyushu University, Fukuoka, Japan*).

**3163** Induction of HSPs with Compressive Stress in MG-63 Cells. Y. SHIMIZU\*, M. OKAZAKI, and H. MITANI (*School of Dentistry, Tohoku University, Sendai, Japan*).

**3164** Expression of HSPs Induced by Cyclical Stretching Stress in PDLF. M. OKAZAKI\*, Y. SHIMIZU, and H. MITANI (*School of Dentistry, Tohoku University, Sendai, Japan*).

**3165** RT-PCR Analysis of Mineralization-related Genes in Cementum Tumor Cells. H. ARZATE\*, D. BARRERA-OVIEDO, and L. GARRIDO-MARÍN (*Laboratorio de Biología Celular y Molecular, Facultad de Odontología, UNAM, México*).

**3166** Periodontal Regeneration in Replanted Tooth by rhBMP-2 and Collagen Membrane. Y. KUBOKI\*, M. KIKUCHI, K. WATANABE, J. QIMING, H. TAKITA, T. FUJINAGA, N. OHATA, and T. INAGE (*Hokkaido University and Nihon University, Japan*).

**3167** Effect of rhBMP-2 on Regeneration of Alveolar Bone and Periodontal Attachment. U.M.E. WIKESJÖ\*, P. GUGLIELMONI, A. PROMSUDTHI, K.-S. CHO, L. TROMBELLI, K.A. SELVIG, L. JIN, and J.M. WOZNEY (*Genetics Institute, Andover, MA; Loma Linda University, CA, USA; Yonsei University, Korea; University of Ferrara, Italy; and University of Bergen, Norway*).

**3168** Expression of BMP Receptors during Formation of the Junctional Epithelium of the Rat Molars. T. INAGE\*, H. OHUCHI, T. SASAKI, T. HORIBE, H. ICHIJO, K. KANEKO, T. NAKADA, and S. OIDA (*Departments of Anatomy and Oral and Maxillofacial Surgery, Nihon University School of Dental Medicine; and Departments of Biomaterials Science and Oral Biochemistry, Tokyo Medical and Dental University, Japan*).

**Seq#: 315**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Salivary Research - Cell Biology**

**3169** Role of Mitogen-activated Protein Kinases (MAPKs) in Salivary Gland Apoptosis. D.O. QUISSELL\*, S.M. ANDERSON, M.E. REYLAND, and M.V. RAYNOLDS (*University of Colorado Schools of Dentistry and Medicine, University of Colorado Health Science Center, Denver, USA*).

**3170** Cell Cycle Length and Apoptosis in the Developing Rat Submandibular Gland. R.S. REDMAN\* and D.H. KRUSE (*Veterans Affairs Medical Center, Washington, DC, USA*).

**3171** Cell Cycle Length and Apoptosis in Developing Rat Parotid and Sublingual Glands. D.H. KRUSE\* and R.S. REDMAN (*Veterans Affairs Medical Center, Washington, DC, USA*).

**3172** Apoptosis in Intercalated Ducts during Rat Submandibular Gland Development. R. HECHT, M. CONNELLY, L. MARCHETTI, W. BALL, and A. HAND\* (*University of Connecticut Health Center, Farmington, USA; University of Camerino, Italy; and Howard University, Washington, DC, USA*).

**3173** Contribution of Intercalated Ducts to Cellular Replacement in Submandibular Glands. Y. MAN, W. BALL\*, and A. HAND (*Howard University, Washington, DC; and University of Connecticut Health Center, Farmington, USA*).

**3174** Contribution of Intercalated Ducts to Regeneration of Rat Submandibular Glands. Y. MAN\* and W. BALL (*Howard University, Washington, DC, USA*).

**3175** Regulation of Paracellular Pathway in Rat Submandibular Gland Cells. K. UCHIHASHI\*, N. TAKAI, K. HIGUCHI, and Y. YOSHIDA (*Department of Physiology, Osaka Dental University, Japan*).

**3176** Immuno-electron Microscopic Study of Rat Sublingual Gland Differentiation. M.S. WOLFF\*, L. MIRELS, and A. HAND (*University of Connecticut Health Center, Farmington; and University of California, Berkeley, USA*).

**3177** Floor-of-the-mouth Enlargements Related to the Sublingual Glands in Edentulous or Partially Edentulous Patients. J.H. DAMANTE\*, L. IWAKI FILHO, A. CONSOLARO, and W.C. BONACHELLA (*Bauru Dental School, University of São Paulo, Brazil*).

**3178** Immunohistochemical Study of Minor Salivary Gland's Adenoid Cystic Carcinoma. C.R.L.V. FIGUEIREDO\* and V.C. ARAÚJO (*Department of Dentistry, Federal University of Rio Grande do Norte, Brazil*).

**3179** Morphological Study of Rat's Parotid Gland Maintained on Liquid Diet. S.C. LEAL\* and O.A. TOLEDO (*University of Brasília, Brazil*).

**Seq#: 316** **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Microbiology/Immunology - Study of Treponemes**

**3180** Interactions between *T. denticola* and *P. gingivalis*. Q.-D. DENG\*, Y.-P. HAN, and H.K. KURAMITSU (*Department of Oral Biology, SUNY, Buffalo, NY, USA*).

**3181** Identification of a *Treponema denticola* Plasminogen Binding Protein. P.M. HANNAM\*, J.C. FENNO, G.W.K. WONG, M. TAMURA, and B.C. McBRIDE (*University of British Columbia, Vancouver, Canada*).

**3182** Effects of a *prtP*-defective Mutant of *Treponema denticola* on Epithelial Cells and Fibroblasts. R.P. ELLEN\*, D.A. GROVE, K.S.-C. KO, C.-M. LO, and K. ISHIHARA (*Faculty of Dentistry, University of Toronto, ON, Canada; and Tokyo Dental College, Japan*).

**3183** Murine IgG Isotype Responses to Experimental *Treponema denticola* Infection. L. KESAVALU\*, S.C. HOLT, and J.L. EBERSOLE (*University of Texas Health Science Center at San Antonio, USA*).

**3184** Human Gingival Fibroblast (HGF): *Treponema denticola* (*Td*) and *T. pectinovorum* (*Tp*) Induction of Cytokines. M.J. STEFFEN\*, C. NIXON, S.C. HOLT, and J.L. EBERSOLE (*University of Texas Health Science Center at San Antonio, USA*).

**3185** Hemoxidation and Binding of Cystallysin from *Treponema denticola* Leads to a Cysteine-dependent Hemolysis of Human Erythrocytes. L. CHU\*, J.L. EBERSOLE, and S.C. HOLT (*University of Texas Health Science Center at San Antonio, USA*).

**3186** Cloning and Expression of the Hemin Binding Protein Gene from *Treponema denticola*. X. XU\*, D. KOLODRUBETZ, and S.C. HOLT (*University of Texas Health Science Center at San Antonio, USA*).

**3187** Dentilisin Activity Affects the Organization of Surface Structure of *Treponema denticola*. K. ISHIHARA\*, H.K. KURAMITSU, T. MIURA, and K. OKUDA (*Department of Microbiology, Oral Health Science Center, Tokyo Dental College, Japan; and State University of New York at Buffalo, USA*).

**3188** Population Distribution of Cultivable and Uncultivable Treponemes in Periodontal Diseases. B.J. PASTER\*, V.A. LEVANOS, M.A. TAMER, S.K. BOCHES, J.L. GALVIN, C.N. LAU, R.L. ERICKSON, and F.E. DEWHIRST (*Forsyth Dental Center, Boston, MA, USA*).

**3189** Molecular Epidemiology of Oral Treponemes in Periodontal Health and Periodontitis. A. MOTER, B. RIEP\*, J. SCHNEIDERHEINZE, G. CONRADTS, T.F. FLEMMIG, and U.B. GÖBEL (*Institut f. Mikrobiologie and Abt. Parodontologie, Charité, Humboldt-Universität zu Berlin; Klinik f. Zahnerhaltung, Aachen; and Klinik f. Zahnerhaltung, Würzburg, Germany*).

**3190** Long-term Detection of Oral Treponemes in Periodontal Disease during Therapy. U. LEITL\*, A. MOTER, B. RIEP, B. EHMKE, T.F. FLEMMIG, and U.B. GÖBEL (*Institut f. Mikrobiologie and Abt. Parodontologie, Charité, Humboldt-Universität zu Berlin; and Klinik f. Zahnerhaltung, Würzburg, Germany*).

**3191** Pulsed Field Gel Electrophoresis of Oral Treponeme DNA. S. PETERS\*, M. VALDEZ, and D. THOMAS (*University of Texas Health Science Center at San Antonio, USA*).

**Seq#: 317** **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Microbiology/Immunology - Virulence Factors of Porphyromonas gingivalis**

**3192** Effect of Interbacterial Binding on Expression of the *P. gingivalis* *fimA* Gene. H. XIE\* and R.J. LAMONT (*University of Washington, Seattle, USA*).

**3193** Characterization of a 53-kDa Fimbrial Protein from *P. gingivalis* 381. M. ARAI\*, N. HAMADA, and T. UMEMOTO (*Department of Oral Microbiology, Kanagawa Dental College, Japan*).

**3194** Secretion of Salivary Peptide Inhibiting Fimbriae-mediated Binding of *Porphyromonas gingivalis* by *Streptococcus gordonii*. K. KATAOKA\*, A. AMANO, and S. SHIZUKUISHI (*Department of Preventive Dentistry and Division of Special Care Dentistry, Osaka University, Japan*).

**3195** Identification and Characterization of Endothelin-converting Enzyme-like Endopeptidase in *Porphyromonas gingivalis* 381. S. AWANO\*, H. MOCHIZUKI, T. ANSAI, and T. TAKEHARA (*Department of Preventive Dentistry, Kyushu Dental College, Kitakyushu, Japan*).

**3196** Involvement of Proteases in Utilization of Human Transferrin-bound Iron by *Porphyromonas gingivalis*. V. BROCHU\*, D. GRENIER, and D. MAYRAND (*Groupe de Recherche en Écologie Buccale, Université Laval, Québec, Canada*).

**3197** Regulation of *Porphyromonas gingivalis* Protease Gene Expression. W. CHEN\* and H.K. KURAMITSU (*Department of Oral Biology, SUNY, Buffalo, NY, USA*).

**3198** Serum Antibody Response to Proteases of *Porphyromonas gingivalis*. J.M. SLANEY\*, I.B. DARBY, S.F.A. WELL, J. ADUSE-OPOKU, M. RANGARAJAN, and M.A. CURTIS (*MRC Group, Saint Bartholomew's and Royal London School of Medicine and Dentistry, QMW, England; and Glasgow Dental School, UK*).

**3199** Human Monoclonal Antibodies Which Inhibit Hemagglutinating Activity of *Porphyromonas gingivalis*. Y. HOSOGI\*, M. YAMAGUCHI, M. HAYAKAWA, and Y. ABIKO (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**3200** Determination of Hemagglutinin-associated Short Motifs in *P. gingivalis*. Y. SHIBATA\*, M. HAYAKAWA, H. TAKIGUCHI, and Y. ABIKO (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**3201** Identification of *P. gingivalis* 40 k-MAP as One of Hemagglutinating Molecules. M. KIYAMA\*, K. HIRATSUKA, Y. SHIBATA, M. HAYAKAWA, and Y. ABIKO (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**3202** Characterization of *P. gingivalis*-deficient Mutant for 40-kDa MAP. K. HIRATSUKA\*, Y. SHIBATA, M. HAYAKAWA, H. TAKIGUCHI, and Y. ABIKO (*Nihon University School of Dentistry at Matsudo, Chiba, Japan*).

**3203** Stimulation of Cytokine Release by Membrane Vesicles of *Porphyromonas gingivalis*. M.C. CONDE\*, S.R. YAN, and M.J. NOVAK (*School of Dental Medicine, University of Pittsburgh, PA, USA*).

**3204** Activation of Human Gingival Fibroblasts by *Porphyromonas gingivalis* Lipopolysaccharide through CD14-mediated Pathway. H. SHIMAUCHI\*, K. OKUDA, T. OGAWA, H. HIRANO, and H. OKADA (*Department of Periodontology,*

*Osaka University Faculty of Dentistry; and Department of Oral Microbiology, Asahi University School of Dentistry, Gifu, Japan).*

**3205** Invasion of HUVEC and KB Cells by *Porphyromonas gingivalis* Strains. B.R. DORN\*, E. KOZAROV, and A. PROGULSKE-FOX (Department of Oral Biology, University of Florida, Gainesville, USA).

**Seq#: 318**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Microbiology/Immunology - Pathogenesis and Genomic Analysis of *Porphyromonas***

**3206** *Porphyromonas gingivalis*, a “Stealth” Pathogen? R.H. GENTZLER, III\*, K.M. PABST, J.P. BABU, and M.J. PABST (University of Tennessee, Memphis, USA).

**3207** Hemoglobinase Activity of the Lysine Protease of *Porphyromonas gingivalis*. J. LEWIS\*, J. DAWSON, K. JONES, J. HANNIS, D. MUDDIMAN, H. BIRKEDAL-HANSEN, and F. MACRINA (Departments of Oral and Craniofacial Molecular Biology and Chemistry, Virginia Commonwealth University, Richmond; and National Institute of Dental and Craniofacial Research, Bethesda, MD, USA).

**3208** Use of PhoA Fusion Expression Vectors for Analysis of *Porphyromonas gingivalis* Pathogenicity. E. KOZAROV\*, A. PROGULSKE-FOX, and J. HILLMAN (Department of Oral Biology, University of Florida, Gainesville, USA).

**3209** Fluorochrome Assay to Quantify Effects of Stress on Adherence of *Porphyromonas gingivalis* to Epithelial Cells. N. FEHMI\*, D.E. LOPATIN, and C.E. SHELBURNE (University of Michigan, Ann Arbor; and 3M, St. Paul, MN, USA). (1997 AADR Student Fellowship Recipient)

**3210** O-antigenic Serotypes of *P. gingivalis* LPS. R.E. SCHIFFERLE\* and J.M. BEANAN (Departments of Oral Biology and Periodontology, State University of New York at Buffalo, USA).

**3211** Induction and Expression of the Hsp90 Homologue in *Porphyromonas gingivalis*. A. COMBS\*, D.E. LOPATIN, and C.E. SHELBURNE (University of Michigan, Ann Arbor; and 3M, St. Paul, MN, USA).

**3212** Identification and Characterization of FtsZ, Cell Division Agent of *Porphyromonas gingivalis*. S. AKIFUSA\*, H. TAMURA, T. ANSAI, and T. TAKEHARA (Kyushu Dental College, Japan).

**3213** Modulation of the Cytokine Communication Network at Inflammatory Sites by Proteinases from *Porphyromonas gingivalis*. J. TRAVIS\*, J. MIKOLAJCZYK-PAWLINSKA, and J. POTEMPA (Department of Biochemistry & Molecular Biology, University of Georgia, Athens, USA; and Institute of Molecular Biology, Jagiellonian University, Krakow, Poland)

**3214** Characterization of Arginine Carboxypeptidase from *Porphyromonas gingivalis*. K. MASUDA\*, M. YOSHIOKA, D. HINODE, and R. NAKAMURA (Department of Preventive Dentistry, School of Dentistry, University of Tokushima, Japan).

**3215** Phospholipid Analogue Profiles of *Porphyromonas gingivalis*. M. KORACHI\*, D.B. DRUCKER, A.S. BLINKHORN, and D.N. LOVE (University of Manchester, UK; and University of Sydney, Australia).

**3216** Physical Map of the Genome of *Porphyromonas gingivalis*. N. HAMADA\*, Y. TAKAHASHI, H. YOSHIMOTO, and T. UMEMOTO (Department of Oral Microbiology, Kanagawa Dental College, Japan).

**3217** There are Approximately 50 Copies of Insertion Sequences in the Genome of *Porphyromonas gingivalis* Strain W83. H. DONG\*, M. DUNCAN, T. CHEN, F.E. DEWHIRST, R. FLEISCHMANN, and C. FRASER (Forsyth Dental Center, Boston, MA; and The Institute for Genomic Research, Rockville, MD, USA).

**3218** Diversity in Type III Secretion Machinery Genes among *P. gingivalis* Strains. N. ITOH\*, A. NAGAI, T. EGUCHI, R. YAMASHITA, M. HARADA, and H. KAYA (Fukuoka Dental College, Japan).

**3219** Antigenic Cross-reactivity among Serotypes of *Porphyromonas gingivalis*. Q. FAN\*, T. NAKAGAWA, T. SIMS, L.S. HOUSTON, and R.C. PAGE (Department of Periodontics, School of Dentistry, University of Washington, Seattle, USA).

**3220** Geographic Distribution of *Porphyromonas gingivalis* Strains. J.S. WANZER\*, A.L. GRIFFEN, S.-Y. LIN, and E.J. LEYS (Ohio State University, Columbus, USA).

**Seq#: 319**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Oral & Maxillofacial Surgery - Orthognathic Surgery, Distraction Osteogenesis, and TMJ**

**3221** Psychosocial Predictors of High-risk Patients Undergoing Orthognathic Surgery. A.A. SCOTT\*, J.D. RUGH, J.P. HATCH, T.J. HOFFMAN, S.M. RIVERA, and C. DOLCE (University of Texas Health Science Center at San Antonio; University of Florida, Gainesville; and Emory University, Atlanta, GA, USA).

**3222** Assessment of Patient-relevant Outcomes Following Mandibular Advancement. S.M. RIVERA\*, J.P. HATCH, J.D. RUGH, C. DOLCE, and R.A. BAYS (University of Texas Health Science Center at San Antonio; University of Florida, Gainesville; and Emory University, Atlanta, GA, USA).

**3223** Growth Prediction of Mandibular Position Using RBF Network. T. SAITOH\*, T. HIROSE, S. TAMAOKI, T. ITOH, M. MATSUMOTO, K. TERADO, E. UCHINO, and T. YAMAKAWA (Department of Orthodontics, Fukuoka Dental College; Hitachi Ltd.; Faculty of Science, Yamaguchi University; and Faculty of Computer Science and Systems Engineering, Kyushu Institute of Technology, Japan).

**3224** Rigid vs. Wire Fixation for Mandibular Advancement: Soft Tissue Changes. C. DOLCE, S.D. KEELING, P.D. JOHNSON\*, R.A. BAYS, J.E. VAN SICKELS, and J.D. RUGH (University of Florida, Gainesville; Emory University, Atlanta, GA; and University of Texas Health Science Center, San Antonio, USA).

**3225** The Effects of Fixation Type and Guided Tissue Regeneration on Maxillary Osteotomy Healing in Rabbits. K.M. STETZER\*, M.P. MOONEY, G.M. COOPER, R. GASSNER, R. KAPUCU, and R. MUNDELL (Departments of Anatomy & Histology, Oral & Maxillofacial Surgery, and Plastic Surgery, University of Pittsburgh, PA, USA).

**3226** Complete Orbital Volume Reconstitution. An Unrealistic Target? R. HANNA\*, R. RICHARDS, L. NEWMAN, C. HOPPER, and St.J. CREAM (Departments of Maxillofacial Surgery & Medical Physics, UCL Hospitals & Eastman Dental Institute, UK).

**3227** Metal Release from Miniplates and Screws under Functional Loading. I.R. MATTHEW\* and J.W. FRAME (University of Birmingham, School of Dentistry, UK).

- 3228** Cost-effectiveness of Rigid vs. Wire Fixation. B.A. SCOTT\*, J.P. HATCH, G.M. CLARK, C. DOLCE, and J.D. RUGH (*University of Texas Health Science Center at San Antonio; and University of Florida Dental School, Gainesville, USA*).
- 3229** Intra-oral Mandibular Distraction Osteogenesis in the Baboon. L.R. DOUGLAS, J.B. DOUGLASS\*, S. NAKEEB, P.J. SMITH, and A. AL-RUBAIYA (*King Faisal Specialist Hospital & Research Centre, Riyadh, Saudi Arabia*).
- 3230** Histological Study of Bone Remodeling Following Distraction Osteogenesis in Humans. A.E. ZAKI\*, J.W. POLLEY, and A.A. FIGUEROA (*College of Dentistry and Craniofacial Center, University of Illinois at Chicago, USA*).
- 3231** Outcome of Arthrocentesis and ICTP Concentration in the TMJ Synovial Fluid. A. SATO\*, M. TSUCHIMOCCHI, M. TOYAMA, K. TAKAHASHI, F. ITO, and I. MATAGA (*Department of Oral and Maxillofacial Surgery II and Department of Oral and Maxillofacial Radiology, Nippon Dental University School of Dentistry at Niigata, Japan*).
- 3232** Elderly Patients with Temporomandibular Disorders Have Teeth More Than Controls. S. KAI\*, H. KAI, Y. TATEISHI, Y. SHIRATSUCHI, and M. OHISHI (*First Department of Oral and Maxillofacial Surgery, Kyushu University, Japan*).
- 3233** No Positive Relationship between TMJ Disk Perforations and Symptoms. Y. TATEISHI\*, S. KAI, H. KAI, O. TABATA, and Y. SHIRATSUCHI (*First Department of Oral and Maxillofacial Surgery and Department of Oral and Maxillofacial Radiology, Kyushu University, Japan*).
- 3234** Free-radical-generated Fibronectin Fragments Exhibit Proteolytic Activity. L. JAMES\*, G. ZARDENETA, F.W. CORDEWENER, L.C. DIJKGRAAF, J.P. SCHMITZ, and S.B. MILAM (*University of Texas Health Science Center, San Antonio, USA*).
- 3235** Missing Posterior Dentition and Condylar Change: A Radiographic Study. C. STARLING\* and A.O. ABUBAKER (*Department of OMFS, VCU School of Dentistry, Richmond, VA, USA*).
- 3239** Human Periodontal Ligament Fibroblasts Express Desmoplakins. Y. YAMAOKA\*, Y. SAWA, M. SUZUKI, S. YOSHIDA, and T. KAWASAKI (*Departments of Prosthetic Dentistry I and Oral Anatomy I, Hokkaido University School of Dentistry, Sapporo, Japan*).
- 3240** A Longitudinal Study of Crevicular Aspartate Aminotransferase in Periodontal Patients. Y. NUMABE\*, A. OSANAI, K. KAMOI, H. WATANABE, K. NOGUCHI, I. ISHIKAWA, Y. MATSUYAMA, Y. OHASHI, and A. MISHIMA (*Periodontology, Nippon Dental University; Periodontology, Tokyo Medical and Dental University; University of Tokyo; and Shofu Inc., Japan*).
- 3241** Gingival Fluid Aspartate Aminotransferase in Early-onset Periodontitis. A. KANTARCI\*, C. UYGUR, F. YALÇIN, and E. FIRATLI (*Department of Periodontology, School of Dentistry, University of Istanbul, Turkey*).
- 3242** Elastase Activity in Gingival Crevicular Fluid of Healthy Volunteers. J.M. HERRMANN\*, J.R. GONZALES, A. KLEINSTEUBER, J. VONHOLDT, and J. MEYLE (*Justus-Liebig-University, Giessen, Germany*).
- 3243** A Fluorogenic Collagenolytic Assay Discriminates between Treatment Responses in Periodontitis. V.M. BHIDE\*, P. BIREK, and C.A.G. McCULLOCH (*MRC Group in Periodontal Physiology, Toronto, Canada*).
- 3244** Association of Calprotectin in Gingival Crevicular Fluid with Periodontal Disease. T. NAKAMURA\*, J. KIDO, R. KIDO, K. OHISHI, N. YAMAUCHI, M. KATAOKA, and T. NAGATA (*Department of Periodontology and Endodontology, Tokushima University School of Dentistry, Japan*).
- 3245** Isoprostane Change in Canine Gingival Crevicular Fluid during Experimental Gingivitis. R. DONOVAN-BRAND\*, A. SNIDER, L. MAHONY, C.H. YEH, and W. BUCHANAN (*Health Care Research Center, The Procter & Gamble Co., Mason, OH, USA*).
- 3246** Tooth Movement under Very Small Vertical Loading. F. MOTOSHIMA, S. TAZUMI, E. AKIYOSHI, T. NAITO\*, M. TANAKA, M. KOHNO, and M. YOKOTA (*Kyushu Dental College, Kitakyushu, Japan*).
- 3247** The Influence of Periodontal Status on Proximal Contact Strengths. C.E. DÖRFER\*, E. v. BETHLENFALVY, and H.J. STAEHLE (*Poliklinik für Zahnerhaltungskunde, Ruprecht-Karls-University Heidelberg, Germany*).
- 3248** Biomechanical Stimuli of the Periodontal Ligament Determined by FE Models. C. HOELL\*, F.G. SANDER, A. WICHELHAUS, J. EDRICH, and R.P. FRANKE (*Department of Orthodontics, Central Institute for Biomedical Engineering, University of Ulm, Germany*).
- 3249** A Mathematic Determination of Root Support. S. POLLOCK\*, D.E. PARSELL, and D. PARKS (*University of Mississippi School of Dentistry, Jackson, USA*).
- 3250** Relationship between Furcation Entrance Dimension and Molar Root Trunk Type. G.L. HOU\*, C.C. TSAI, Y.H. YANG, T.Y. SHIEH, and J.-S. HUANG (*School of Dentistry, Kaohsiung Medical College, Taiwan, ROC*).

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**Seq#: 320**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Periodontal Research – Diagnosis/Epidemiology - Host Markers and Anatomic Considerations in Periodontal Diagnosis**

- 3236** Defective Calcium Entry in Neutrophils from LJP Patients. K. SHIBATA\*, H. KURIHARA, and T.E. VAN DYKE (*Department of Periodontology and Oral Biology, Boston University School of Dental Medicine, MA, USA; and Department of Endocrinology and Periodontology, Hiroshima University School of Dentistry, Japan*).
- 3237** Tooth Attachment & Actinomyces Antibody. M. LEVINE\*, S. RONDA, M. FARMER, L. REINECKER, M. BURTON, J. LEE, and S.S. SOCRANSKY (*Biochemistry & Molecular Biology & Dental Hygiene, University of Oklahoma HSC, Oklahoma City; BioMedical Services, Austin, TX; and Forsyth Dental Center, Boston, MA, USA*).
- 3238** Evaluation of Inflammatory Cytokine Expression in Inflamed Gingival Tissue. M. HIROSE\*, A. SAITO, K. ISHIHARA, K. OKUDA, and S. YAMADA (*Department of Periodontics and Department of Microbiology, Tokyo Dental College, Japan*).

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**Seq#: 321**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Periodontal Research – Pathogenesis - Systemic Diseases; Early Onset Periodontitis**

- 3251** Periodontal Disease in Pregnancy Complicated by Diabetes. D. WEENIG\*, J. GUTHMILLER, J. HASSEBROEK-JOHNSON, G.K. JOHNSON, H.L. KIRCHNER, and S. HUNTER (Colleges of Dentistry and Medicine, University of Iowa, Iowa City, USA).
- 3252** Detection of Periodontopathic Bacteria in Plaque from Patients with Down Syndrome Using Polymerase Chain-reaction Method. A. AMANO\*, T. KISHIMA, S. HAMADA, and I. MORISAKI (Special Care Dentistry and Oral Microbiology, Osaka University, Japan).
- 3253** Radiographic Patterns of Alveolar Bone Loss in 250 Early-onset Periodontitis Moroccan Patients. N. KHLIL\*, S. HAMDANI, and A. DANIEL (Dental School, Casablanca, Morocco; and Dental School, Nantes, France).
- 3254** Ceruloplasmin,  $\alpha$ 1-acid Glycoprotein, and  $\alpha$ 1-antichymotrypsin Levels in Periodontal and Cardiovascular Disease. I. GLURICH\*, P. BRONSON, S.G. GROSSI, A.W. HO, H. BAUMANN, R.J. GENCO, and E. De NARDIN (State University of New York at Buffalo, USA).
- 3255** *Porphyromonas gingivalis* Antigens for New Classification of Advanced Periodontitis Patients. S.J. GUO\*, K. TAKAHASHI, S. KOKEGUCHI, S. TAKASHIBA, and Y. MURAYAMA (Department of Periodontology and Endodontology, Okayama University Dental School, Japan).
- 3256** TGF- $\beta$ 1 Associated with Gingival Overgrowth in Transplant Patients. C.L. MORGAN, H. ROBERTSON, J.A. KIRBY, J.J. TAYLOR, and J.M. THOMASON\* (Dental School and Department of Surgery, University of Newcastle upon Tyne, UK).
- 3257** Effect of Aging on IL-1 $\beta$ -stimulated IL-6 Release from Gingival Fibroblasts. O. KAWAI\*, K. NAKASHIMA, M.O. MORI, S. KATO, J. TOMIOKA, T. NISHIHARA, and Y. KOWASHI (Health Sciences University of Hokkaido and National Institute of Infectious Diseases, Japan).
- 3258** Genetic, Immunological, and Microbiological Study of Family Members Manifesting Early-onset Periodontitis. M. OKADA\*, S. AWANE, A. MATSUSHITA, K. KOZAI, T. TAKEMOTO, H. KURIHARA, and N. NAGASAKA (Department of Pediatric Dentistry and Periodontology, Hiroshima University School of Dentistry, Japan).
- 3259** Subgingival Oxygen Tension in Smokers and Non-smokers with Periodontal Disease. T. HANIOKA\*, Y. MATSUMORI, and S. SHIZUKUIISHI (Department of Preventive Dentistry, Osaka University Faculty of Dentistry, Japan).
- 3260** Salivary and Plaque Calcium Levels in Rheumatoid Arthritis Patients. L. SEWÓN\*, T. HYYPPÄ, and K. PAUNIO (Institute of Dentistry, University of Turku, Finland).
- 3261** Elastase Complexed with  $\alpha$ 1-Antitrypsin and  $\alpha$ 2-Macroglobulin in Matched Periodontitis Sites in Smokers and Non-smokers. B. SÖDER\*, T. LINDBERG, and P.-Ö. SÖDER (Department of Odontology, Karolinska Institute, Stockholm, Sweden).
- 3262** Cyclosporin-A Upregulates Phospholipase-C  $\beta$ 1 Nuclear Expression in Fibroblasts from Heart-transplanted Patients with Gingival Overgrowth. D. SERVIDIO\*, L. MONTEBUGNOLI, and L. BRESCHI (School of Dentistry, University of Bologna, Italy).
- 3263** Effects of Three Brazilian Triclosan Dentifrices on Experimental Gingivitis. G.R. NOGUEIRA-FILHO\*, S. TOLEDO, and J.A. CURY (FOP-UNICAMP, Brazil).
- 3264** Distribution of T-lymphocyte Subsets in Patients with Generalized Prepubertal Periodontitis. E. FIRATLI, C. UYGUR\*, and N. GÜREL (Department of Periodontology, School of Dentistry, and Department of Basic Immunology and Virology, School of Medicine, University of Istanbul, Turkey).
- 3265** Distribution of T-lymphocyte Subsets in Patients with Papillon-Lefèvre Syndrome. E. FIRATLI\*, C. UYGUR, and N. GÜREL (Department of Periodontology, School of Dentistry, and Department of Basic Immunology and Virology, School of Medicine, University of Istanbul, Turkey).
- 3266** Changes in Spirochetal Profile of Three Periodontal Treatment Modalities. N.D. TANNA\*, A.C. PLASTER, L.T. VESELICKY, and J. THOMAS (School of Dentistry, West Virginia University, Morgantown, USA).

**Seq#: 322** **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Periodontal Research – Pathogenesis - Microbial Molecules; Host Interactions**

- 3267** Characterization of 3 Different Types of *Porphyromonas gingivalis* Monoclonal Antibodies. O. YILMAZ\*, L. HU, and R. DARVEAU (Department of Periodontics, University of Washington, Seattle, USA).
- 3268** Serum IgG Reactivity of Periodontitis Patients to K Antigens of *Porphyromonas gingivalis*. T. SIMS\*, R.E. SCHIFFERLE, R. ALI, N. SKAUG, and R.C. PAGE (University of Washington, Seattle; State University of New York at Buffalo, USA; and University of Bergen, Norway).
- 3269** Characteristics of Antibodies to *Porphyromonas gingivalis* Arg-gingipain (RgpA) and Lys-gingipain (Kgp). T. NAKAGAWA\*, T. SIMS, Q. FAN, J. POTEPA, J. TRAVIS, and R.C. PAGE (University of Washington, Seattle; University of Georgia, Athens, USA; and Tokyo Dental College, Chiba, Japan).
- 3270** Characterization of Exopolysaccharide Isolated from *Prevotella nigrescens*. H. FUKUSHIMA\*, K.-P. LEUNG, N. YAMAMOTO, H. SAGAWA, and C.B. WALKER (Osaka Dental University, Japan; and Department of Oral Biology, University of Florida, Gainesville, USA).
- 3271** Tea Extracts Suppress H<sub>2</sub>S and Methyl Mercaptans Production by Periodontal Pathogens. C.D. WU, S. TONG\*, L. CAI, W.R. GRIGSBY, and L. HWANG (Department of Periodontics, University of Illinois-Chicago; University of Iowa, Iowa City, USA; and National Taiwan University, ROC).
- 3272** Purification of a Cell-surface-associated Protein of *Bacteroides forsythus*. K. HONMA\*, A. SHARMA, H.T. SOJAR, and R.J. GENCO (Department of Oral Biology, State University of New York at Buffalo, USA).
- 3273** Detection of a Congo Red Binding Protein in *Actinobacillus actinomycetemcomitans*. R. KIMIZUKA\*, V.I. HARASZTHY, and J.J. ZAMBON (Department of Oral Biology, State University of New York at Buffalo, USA).
- 3274** Vascular Endothelial Growth Factors and Progression of Periodontal Diseases. R.B. JOHNSON\*, F.G. SERIO, and X. DAI (University of Mississippi, Jackson, USA).
- 3275** Hemolytic Activity of Oral *Trichomonas tenax*. E. NAGAO\*, A. YAMAMOTO, T. IGARASHI, R. SASA, and N. GOTO (Showa University School of Dentistry, Tokyo, Japan).
- 3276** Molecular Cloning and Expression of a Periplasmic Protein Regulated by the Fur Protein. V.I. HARASZTHY\*, E.T. LALLY, and J.J. ZAMBON (Department of Oral Biology, State University of New York at Buffalo; and University of Pennsylvania, Philadelphia, USA).



**3277** *Capnocytophaga gingivalis* Adhesin DNA Sequence with a Protease Domain. P.J. TEMPRO\*, D. McDUFFIE, and L. MIKULSKI (School of Dental Medicine, University at Buffalo, NY, USA).

**3278** Identification of a Putative Gene Encoding *Porphyromonas gingivalis* Platelet-aggregation-associated Protein (PgPAAP). A. SHARMA\*, H.T. SOJAR, E.K. NOVAK, R.T. SWANK, H.K. KURAMITSU, and R.J. GENCO (Department of Oral Biology and Roswell Park Cancer Institute, State University of New York at Buffalo, USA).

**3279** Three-dimensional Structure Analysis of Fibronectin Heparin-binding Domain Mutations. D. DOAN\*, R. FLETTERICK, and Y.L. KAPILA (University of California San Francisco, USA).

**3280** Incidence and Identity of Doxycycline-resistant Bacteria in the Intestinal Flora. C.B. WALKER, J. LENNON\*, S. NANGÓ, and J. LIU (Periodontal Disease Research Clinics, University of Florida, Gainesville, USA).

**3281** Distribution of *Porphyromonas gingivalis* fimA Genotypes in Periodontitis Patients. I. NAKAGAWA\*, A. AMANO, I. MORISAKI, and S. HAMADA (Department of Oral Microbiology and Division of Special Care Dentistry, Osaka University, Japan).

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**Seq#: 323**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Periodontal Research – Therapy - GTR, GBR: Animal Experiments**

**3282** The Regenerative Efficacy of GTR with a Non-porous Membrane. Y. SHIBUKAWA\*, M.C. MAGNO, K. SEKIGUCHI, and S. YAMADA (Department of Periodontics, Tokyo Dental College, Chiba, Japan).

**3283** GTR and Bone Graft in Regeneration of Palatal Dehiscence Defects. M. NAGATA\*, D. PALIOTO, L. MOTA, S. SATO, and R.G. CAFFESSE (University of State of São Paulo, Brazil; University of Campinas, Brazil; University of Texas at Houston, USA; and University of Tokyo, Japan).

**3284** Histologic and Histometric Results in Treatment of Class II Furcations in Dogs. M. NEDIĆ\*, V. LEKOVIIĆ, B. DIMITRIJEVIĆ, and Z. ALEKSIĆ (Department for Periodontology, University of Belgrade, Yugoslavia).

**3285** Regeneration of Class III Furcation Defects with b-FGF. Histometric Study in Dogs. C. ROSSA, Jr.\*, E. MARCANTONIO, Jr., J.A. CIRELLI, and R.A.C. MARCANTONIO (Araraquara Dental School—UNESP, SP, Brazil).

**3286** Drug-loaded Moldable PLLA/TCP Membranes for Guided Bone Regeneration. C.P. CHUNG\*, Y.M. LEE, Y.J. PARK, Y. KU, and S.J. LEE (Department of Periodontology, Seoul National University; and Department of Industrial Pharmacy, Ewha Women's University, Seoul, Korea).

**3287** Growth Factor Expression during Guided Bone Regeneration in Monkeys. S. GEVA\*, D. DAMRONGSRI, L.D. BRASWELL, M.E. FRITZ, and S. OFFENBACHER (University of North Carolina Center for Oral and Systemic Diseases, Chapel Hill; and Emory University, Atlanta, GA).

**3288** Growth Factors Expression during Bone Regeneration in a Rat Model. D. DAMRONGSRI\*, S. GEVA, G. SALVI, W.D. GRIMM, L.F. COOPER, M.E. FRITZ, and S. OFFENBACHER

(Center for Oral and Systemic Diseases, University of North Carolina, Chapel Hill, USA).

**3289** Hyperbaric Oxygen in Critical Size Bone Defects Treated with GBR. D. WENG\*, F. CARIDE, S. SATO, C.E. FIFE, and R.G. CAFFESSE (University of Texas at Houston, USA; University of Würzburg, Germany; and University of Tokyo, Japan).

**3290** Biocompatibility and Bone Conductivity of Porous Calcium Metaphosphate Blocks. Y.M. LEE\*, S.Y. KIM, and C.P. CHUNG (Department of Periodontology, Seoul National University; and Department of Material Technology, Yeungnam University, Taegu, Korea).

**3291** Utilization of Biogran® and Calcitite® in Bone Defects. D.C.J. CANCIAN\*, E.H. VIEIRA, R.A.C. MARCANTONIO, E. MARCANTONIO, Jr., and C. BENATTI (Araraquara Dental School, UNESP, Brazil).

**3292** PDGF-BB Loaded Chitosan Sponge as a Bone Replacement Graft Material. Y.M. LEE, Y.J. PARK, H.S. JUN\*, Y. KU, S.J. LEE, and C.P. CHUNG (Department of Periodontology, Seoul National University; and Department of Industrial Pharmacy, Ewha Women's University, Seoul, Korea).

**3293** Histologic Comparison of Sites Implanted with Synthetic Osseous Graft Materials in a Rabbit Model. S. STRATUL\*, D. BRATU, I. NICA, D. ONISEI, C.H. COBB, and T. NEGREANU (UMF Timisoara, Romania; UMKC, Kansas City, USA; and PONETI Ltd., Bucharest, Romania).

**3294** Evaluation of Bismuth Subgallate on Wound Healing in Rats. V.A. TRAMONTINA\*, M.A.N. MACHADO, S.H. KIM, and S. TOLEDO (Faculty of Dentistry of Piracicaba, UNICAMP, São Paulo, Brazil).

**3295** Effect of Periodontal Splinting on Healing of Infrabony Defects. O. ZELIĆ, Z. ALEKSIĆ\*, and M. NEDIĆ (Department of Periodontology, University of Belgrade, Yugoslavia).

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**Seq#: 324**      **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

**Pharmacology, Therapeutics, & Toxicology - Supportive Periodontal Therapy**

**3296** The Clinical Evaluation of Subgingival Irrigation in Patients in a Supportive Periodontal Treatment. P. FAMILI\*, J.M. CLOSE, and J.B. SUZUKI (University of Pittsburgh, School of Dental Medicine, PA, USA).

**3297** Modulation of Calcium Entry in Mitogen-activated Fibroblasts by C1q. S. BORDIN\* (Periodontics, University of Washington, Seattle, USA).

**3298** A Clinical Comparison of Three Powered Toothbrushes. M.D. KAZMIERCZAK, S.G. CIANCIO, and M.L. MATHER\* (Center for Dental Studies, State University of New York at Buffalo, USA).

**3299** A Three-week Brushing Model for Assessing Antiplaque/Antigingivitis Dentifrice Effectiveness. S.M. MANKODI, C. TOTTEN, H.M. PROSKIN, B. KOHUT, and J. COELHO\* (Dental Products Testing, Inc., H. Proskin and Associates, Inc., Rochester, NY; and Warner-Lambert Company, Morris Plains, NJ, USA).

**3300** Antioxidant Activity of Tannins Isolated from *Vaccinium-vitis-idaea* L. K.-Y. HO\*, J.-S. HUANG, C.C. TSAI, T.-C. LIN, and C.-C. LIN (School of Dentistry and Graduate



**3324** Histochemical Changes of Masseter Muscle in the Dystrophic Hamster (UM-X7.1). M. MIZUTANI\*, M. UTSUMI, K. MORIGUCHI, H. TAKAHASHI, C. KINOSHITA, A. TOGARI, L. SARUWATARI, and N. OHNO (*School of Dentistry, Aichi-Gakuin University; and Fujita Health University, Japan*).

**3325** Green Fluorescent Protein as an Efficient Marker for Gene Delivery *in vivo*. J.H. CHEN\*, C.P. YU, H.J. HARN, and C.L. MENG (*School of Dentistry and Department of Pathology, National Defense Medical Center, Taipei, ROC*).

**3326** The Effect of a Dentifrice in the Prevention of Recurrent Aphthous Ulcers. P. COLI\*, M. JONTELL, and M. HAKEBERG (*Departments of Prosthetic Dentistry and Endodontology/Oral Diagnosis, Faculty of Odontology, Göteborg University, Sweden*).

**3327** Norepinephrine Modulates Cytokine mRNA Expression by Mouse Spleen *in vivo*. V.V. KALINICHENKO, L.H. GRAF, Jr., R.L. COHEN\*, P. FELSNER, K. SCHAUENSTEIN, and D.A. CHAMBERS (*University of Illinois at Chicago, USA; and University of Graz, Austria*).

**3328** Distribution of Transmembrane Glycoprotein Desmoglein in Esophageal Squamous Cell Carcinoma. F. PITTELLA\*, K. KATSUBE, T. TAKEMURA, and M. TAKAGI (*Tokyo Medical and Dental University, Nisseki Medical Center Hospital, Japan*).

**3329** Activated Lymphocytes Express the Urokinase-type Plasminogen Activator Receptor. J.K. COLLINS, J.M. BATOR, V.V. KALINICHENKO, R.L. COHEN, and D.A. CHAMBERS\* (*University of Illinois at Chicago, USA*).

**3330** Calcium Imaging of Cancer Cells. V. LECRONE\*, W. LI, and M.C. FARACH-CARSON (*Dental Branch, University of Texas at Houston, USA*). (1998 AADR Student Fellowship Recipient)

**3331** Evaluation of Synthetic Retinoid N-(4hydroxyphenyl)-all-trans-retinamide in Hamster Buccal Pouch Carcinogenesis. M. GIULIANI\*, C.M. MIANI, A. BOARI, and C. LAJOLO (*Dental Department, Catholic University, Rome, Italy*).

**3332** Extracts from Betel Nuts Induced Reversible Changes in Cell Structures. T.-L. LEE\*, S.-L. CHEN, M.-L. YANG, S.-H. YANG, and M.Y. CHOU (*Department of Anatomy, Institute of Stomatology, Chung Shan Medical and Dental College, Taichung, Taiwan, ROC*).

**3333** Oral Mucosal Microscopic Changes in Gastro-esophageal Reflux Disease Patients. M.A.G.S. SILVA\*, J.H. DAMANTE, R.N. FLEURY, A.C.M. STIPP, M.M. TOLENTINO, and P.R. CARLOTTO (*University of Goiás and Bauru Dental School, University of São Paulo, Brazil*).

**3334** Three-dimensional Cultures of SV40 Large T-antigen Transfected Pulp-derived Cells. G. SCHMALZ\*, U. SCHUSTER, N. MENDEL, and H. SCHWEIKL (*Department of Operative Dentistry and Periodontology, Dental School, University of Regensburg, Germany*).

**3335** bcl-2, p53, and Mib-1 in Odontogenic Myxoma. P. CARLUCCI\*, M. FIORONI, C. RUBINI, A. SCARANO, S. TETÈ, M. PIATTELLI, and A. PIATTELLI (*Dental School, University of Chieti, Italy*).

**3336** Type IV Collagen and Type IV Collagenase (MMP-2 and MMP-9) in Developing Human Teeth and Odontogenic Tumors. B.-Y. KO, S.-D. HONG, J.-I. LEE, S.-P. HONG, and C.-Y. LIM\* (*Department of Oral Pathology, College of Dentistry, Seoul National University, Korea*).

**Seq#: 328** **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

### **Craniofacial Biology - Expression in Oral Cancer**

**3337** Interleukin-1b in Oral Submucous Fibrosis, Verrucous Hyperplasia, and Squamous Cell Carcinoma Tissues. C.C. TSAI\*, C.C. CHEN, and C.H. CHEN (*Graduate Institute of Dental Sciences, Kaohsiung Medical College, Taiwan, ROC*).

**3338** Hyaluronic Acid Expression in Oral Submucous Fibrosis and Squamous Cell Carcinoma. T.Y. SHIEH\*, S.B. LAI, C.C. TSAI, and C.-C. LIN (*School of Dentistry, Kaohsiung Medical College, Taiwan, ROC*).

**3339** Expression of Multiple Leukocyte Adhesion Molecules on the Lymphatic Endothelium of the Human Tongue. N. EBATA\*, Y. SAWA, M. SUZUKI, S. YOSHIDA, and Y. TOTSUKA (*Departments of Oral Surgery II and Oral Anatomy I, Hokkaido University School of Dentistry, Sapporo, Japan*).

**3340** Organotypic Cultures for Studies of Epithelial Kinetics and Differentiation. M. IGARASHI\* and I.C. MACKENZIE (*School of Dentistry at Niigata, Nippon Dental University, Japan; and University of Michigan School of Dentistry, Ann Arbor, USA*).

**3341** Fabrication of Targeted-stealth Nanospheres Based on Poly(lactide-co-glycolide)-block-poly(ethylene glycol) Chemistry. S. PARK\* and K.E. HEALY (*Division of Biological Materials, Dental and Engineering Schools, Northwestern University, Chicago, IL, USA*).

**3342** Nicotine- and Arecoline-induced IL-1 Secretion and ICAM-1 Expression in Human Oral Epidermoid Carcinoma Cells. Y.A. CHENG\*, C.C. WANG, and C.C. TSAI (*Kaohsiung Medical College, Graduate Institute of Dental Sciences, Taiwan, ROC*).

**3343** Oral and Craniofacial Genome Anatomy Project (OC-GAP). Y. MURAKAMI\*, H.-C. LI, Y. KURATOMI, K.M. YAMADA, and Y. YAMADA (*Craniofacial Developmental Biology and Regeneration Branch, NIDCR/NIH, Bethesda, MD, USA*).

**Seq#: 329** **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

### **Craniofacial Biology - Gene Expression and Tooth Formation**

**3344** PTHrP Enhancement of Gene Expression in Rat Dental Follicle Cells. G.E. WISE\* and B.G. QUE (*Louisiana State University, Baton Rouge, USA*).

**3345** Immunolocalization of Laminin-5 and a6b4 Integrin during Cytodifferentiation of Ameloblasts. K. YOSHIBA\*, N. YOSHIBA, J.V. RUCH, H. LESOT, M. IWAKU, and H. OZAWA (*Niigata University School of Dentistry, Japan; and INSERM U424, Strasbourg, France*).

**3346** Identification of Genes during the Initiation of Odontogenesis Using the Differential Display Method. Y.-H. WANG\*, W.B. UPHOLT, E.J. KOLLAR, and M. MINA (*School of Dental Medicine, University of Connecticut, Farmington, USA*).

**3347** Isolation and Characterization of the Murine Ameloblastin Promoter. S. DHAMIJA\*, Y. YAMADA, and P.H. KREBSBACH (*University of Michigan, Ann Arbor; and NIDCR, National Institutes of Health, Bethesda, MD, USA*).

**3348** Sonic hedgehog Signaling during Ameloblast Differentiation. E. KOYAMA\*, T. OHMORI, M. IWAMOTO, K. KURISU, and M. PACIFICI (*School of Dental Medicine,*

University of Pennsylvania, Philadelphia, USA; and Osaka University Faculty of Dentistry, Suita, Japan).

**3349** a2,8-sialyltransferase (GD3-synthases) Gene Expression in the Mouse Developing Enamel Organ. R.H. CHO\*, M. ITOH, E. FUKUMOTO, J. MOTOMURA, S. FUKUMOTO, and A. MIZUNO (*First Department of Oral and Maxillofacial Surgery, Department of Preventive Dentistry, Dental Anesthesiology, and Department of Pediatric Dentistry, Nagasaki University School of Dentistry, Japan*).

**3350** Expression of OPG/OCIF and OPGL/OBP/ODF mRNAs in Human Tooth Cells. T. HASEGAWA\*, T. KIKUIRI, Y. YOSHIMURA, Y. SHIRAI, S. TAKEYAMA, T. SHIRAKAWA, and H. OGUCHI (*School of Dentistry, Hokkaido University, Sapporo, Japan*).

**3351** *In vivo* Study of Follicular Apoptosis during Tooth Eruption. S.M. KORCH, B. SHROFF\*, K. NORRIS, J.R. ROTHMAN, and C. HEBERT (*University of Maryland, Baltimore, USA*).

**Seq#: 330** **Saturday, March 13, 11:00 am – 12:15 pm**  
**Poster Session, Exhibit Hall B&C**

#### **Craniofacial Biology - Gene Expression in Contractile Cells**

**3352** Murine Tongue Muscle Expresses Developmentally Distinct MRF and Contractile Genes. K.R. DALRYMPLE\*, T.I. PRIGOZY, M.L. MAYO, L. KEDES, and C.F. SHULER (*Center for Craniofacial Molecular Biology, University of Southern California, Los Angeles, USA*).

**3353** Embryonic, Fetal, and Neonatal Tongue Myoblasts Exhibit Molecular Heterogeneity *in vitro*. K.R. DALRYMPLE, M.L. MAYO\*, and C.F. SHULER (*Center for Craniofacial Molecular Biology, University of Southern California, USA*).

**3354** The Effect of Mechanical Stretching on Skeletal Muscle Organogenesis. M. TOTSUKA\*, M. CHIBA, and H. MITANI (*Department of Orthodontics, Tohoku University, Sendai, Japan*).

**3355** Differential Expression of MyoD Family during Mouse Masseter Muscle Development. A. YAMANE\*, Y. OHNUKI, and Y. SAEKI (*Tsurumi University, Yokohama, Japan*).

**3356** Gender Differences in Spatial Distribution of MyHC Isoforms in Mouse Masseter. C. NEKULA\*, C.G. WIDMER, and J. MORRIS-WIMAN (*Departments of Orthodontics and Oral Surgery, University of Florida Dental College, Gainesville, USA*).

**3357** Changes in Myosin Heavy-chain mRNA of Lengthened Rat Masseter Muscle. Y. SAEKI\*, Y. OHNUKI, A. YAMANE, and K. YANAGISAWA (*Tsurumi University School of Dental Medicine, Yokohama, Japan*).

**3358** Human Periodontal Ligament Fibroblast-like Cells Support Osteoclastogenesis. H. KANZAKI\*, M. CHIBA, Y. SHIMIZU, and H. MITANI (*Department of Orthodontics and Oral Bacteriology, School of Dentistry, Tohoku University, Sendai, Japan*).

**3359** Proliferation and Cell Cycle Proteins in Mechanically Stressed PDL Cells. H.K. YOU\*, H.S. SHIN, G. LEE, and B.-M. MIN (*Wonkwang University, Iksan, and Seoul National University, Korea*).

### **SATURDAY (Afternoon)**

**Seq#: 331** **Saturday, 1:30 pm – 3:30 pm**  
**Symposium, Room 3**

#### **Geriatric Oral Research, Behavioral Sciences/Health Services Research, and Cariology Groups - Challenges in Conducting Clinical Trials with Older Populations**

**Chairpersons: H.A. Kiyak and R. Katz**

- 3360** 1:30 Opening Comments.  
1:35 Trials, Tribulations, and Triumphs of Clinical Trials. N.S. BRAVEMAN (*NIDCR/NIH, Bethesda, MD, USA*).  
1:55 Selecting True Endpoints in Clinical Trials. P. HUJOEL (*University of Washington, Seattle, USA*).  
2:15 Measuring Caries and Periodontal Disease in Clinical Trials. J. BECK (*University of North Carolina, Chapel Hill, USA*).  
2:35 The Challenges of Recruiting and Retaining Subjects. H.A. KIYAK (*University of Washington, Seattle, USA*).  
2:55 A Pharmaceutical-Biotech Perspective on Clinical Research. M. CARLSON (*Xoma Corp., San Francisco, CA, USA*).  
3:15 Discussion.

**Seq#: 332** **Saturday, March 13, 1:30 pm - 3:30 pm**  
**Oral Session, Room 11**

#### **Behavioral Sciences & Health Services Research - Dentists' Career Issues**

**Chairpersons: M. Eijkman and N. Doherty**

- 3361** 1:30 Self-efficacy, Outcome Expectancy, and Dental Value as Predictors of Dental Plaque. P. GRAVES\*, J.E. STEWART, and S. STRACK (*VA Outpatient Clinic, Los Angeles, CA, USA*).
- 3362** 1:45 The Relation between Health Complaints and Professional Burnout among Dutch Dentists. R.C. GORTER\*, M.A.J. EIJKMAN, J. HOOGSTRATEN, and G. ALBRECHT (*Department of Social Dentistry and Dental Health Education, Academic Centre for Dentistry, ACTA, Amsterdam, The Netherlands*).
- 3363** 2:00 Exploration of Profiles of Burned-out Dentists: A Qualitative Study. M.A.J. EIJKMAN\* and R.C. GORTER (*Department of Social Dentistry and Dental Health Education, Academic Centre for Dentistry, Amsterdam ACTA, The Netherlands*).
- 3364** 2:15 Perceived Stress among Private Dentists and Their Perceptions of Anxious Patients. R. MOORE\* (*Department of Oral Epidemiology & Public Health, Royal Dental College, Aarhus University, Denmark*).
- 3365** 2:30 Psychological Coping Strategies in Different Dental Situations. D. PFALZGRAF\* and T. SCHNELLER (*Medical School, Hannover, Germany*).
- 3366** 2:45 The Temperament of Dentists and Its Impact on Dental Treatment. R. FERRELL\*, B. ADAMS, B. LANGE, W. KALDAHL, S. SILBERMAN, and G. WESTERMAN (*UNMC—Dentistry, Lincoln, NE; Creighton—Dentistry, Omaha, NE; and University of Mississippi—Dentistry, Jackson, MS, USA*).
- 3367** 3:00 The Investment in Training in Orthodontics or Oral Surgery Relative to General Dentistry. D.W. CORDES and N.J. DOHERTY\* (*School of Dental Medicine, University of Connecticut, Farmington, USA*).
- 3368** 3:15 Dentists' Decision as to Mode of Preventive Treatment. S.E. HELMINEN\*, M. VEKALAHTI, H. MURTOMAA, and R. LAMMI (*Institute of Dentistry,*

Department of Oral Public Health, University of Helsinki, Finland).

**Seq#: 333 Saturday, March 13, 1:30 pm - 3:30 pm  
Oral Session, Room 18**

**Cariology Research - Microbiology, Caries Prevention**

**Chairperson: L. Petersson**

**3369** 1:30 Caries Incidence in Relation to Mutans Streptococci Suppression by Chlorhexidine. S. TWETMAN\* and L.G. PETERSSON (Faculty of Odontology, Malmö University; and Medical and Dental Center, Halmstad, Sweden).

**3370** 1:45 Effect of F- and CHX-varnish Application on Approximal Caries. L.G. PETERSSON\*, B. ALMGREN, K. MAGNUSSON, H. ANDERSSON, and S. TWETMAN (Medical and Dental Health Center, Halmstad, Sweden).

**3371** 2:00 The Efficacy of Chlorhexidine Varnish in Reducing Maternal Mutans Streptococci. A.P. DASANAYAKE\*, R. HARRISON, Y. LI, J.M. ROSEMAN, R. GO, S.V. VERMUND, and P.W. CAUFIELD (Specialized Caries Research Center, University of Alabama at Birmingham, USA).

**3372** 2:15 Efficacy of Different Concentrations of Chlorhexidine Varnishes in Decreasing Mutans Streptococci. R. TÛTÛNCÛ\*, A. TUNA, and M.J. NOACK (Department of Operative Dentistry and Periodontology, University of Cologne, Germany).

**3373** 2:30 Maintaining Mutans Streptococci Suppression with Xylitol-containing Chewing Gum. G.H. HILDEBRANDT\* and B.S. SPARKS (School of Dentistry, University of Minnesota, Minneapolis, USA).

**3374** 2:45 Inhibition of Plaque Biofilm-induced Caries by Tooth or Environmental Fluoride. M. SHU\*, C.H. SISSONS, J.H. MILLER, and T.W. CUTRESS (Dental Research Group, Wellington School of Medicine; and Victoria University of Wellington, New Zealand).

**3375** 3:00 Influence of Milk on Enamel Demineralization in a Bacterial Biofilm Model. W.H. ARNOLD\*, D. STEINBERG, I. GEDALIA, and P. GAENGLER (University of Witten/Herdecke, Germany; and Hebrew University of Jerusalem, Israel).

**3376** 3:15 DNA Analysis of Bacteria in Symptomatic Endodontically Treated Teeth. N.M. VAFAIE\*, J.M. DOBECK, M. WARBINGTON, S. DIBART, M. HARRIS, and Z. SKOBE (School of Dental Medicine, Harvard University; School of Dental Medicine, Boston University; and Forsyth Dental Center, Boston, MA, USA).

**Seq#: 334 Saturday, March 13, 1:30 pm - 3:30 pm  
Oral Session, Ballroom B**

**Craniofacial Biology - Mandibular Kinematics**

**Chairperson: P. Buschang**

**3377** 1:30 Incising Behavior: An Exploratory Study. T. FERRIS\*, J.P. HATCH, and J.D. RUGH (University of Texas Health Science Center at San Antonio, USA).

**3378** 1:45 Computer-assisted Systems to Evaluate Jaw Loading and Movement. K. MAKI\*, N. INOU, A. MILLER, and Y. SHIBASAKI (Department of Orthodontics, Showa University with Tokyo Institute of Technology, Japan; and Department of Growth and Development, University of California, San Francisco, USA).

**3379** 2:00 Masticatory Kinematics in Young Posterior Crossbite Patients. H. HAYASAKI\*, P.H. BUSCHANG, G.S. THROCKMORTON, and A. SANTOS-PINTO (Kyushu University, Japan; and Baylor College of Dentistry, Texas A & M University System, Dallas, USA).

**3380** 2:15 Incisor and Condylar Movements during Maximum Opening are Unrelated. P.H. BUSCHANG\*, K.H. TRAVERS, G.S. THROCKMORTON, and H. HAYASAKI (Baylor College of Dentistry, Texas A & M University System, Dallas, USA).

**3381** 2:30 The Effects of Chewing Rates on Mandibular Kinematics. T. PHELAN\*, K. ANDERSON, G.S. THROCKMORTON, H. HAYASAKI, and P.H. BUSCHANG (Baylor College of Dentistry, Texas A & M University System, Dallas, USA).

**3382** 2:45 Bite Forces and Muscle Recruitment of Young Open-bite Patients. A. GHANDI\*, G.S. THROCKMORTON, P.H. BUSCHANG, H. HAYASAKI, and J. ENGLISH (Baylor College of Dentistry, Texas A & M University System, Dallas, USA).

**3383** 3:00 The Effects of Food Texture on Mandibular Kinematics. K. ANDERSON\*, T. PHELAN, G.S. THROCKMORTON, H. HAYASAKI, and P.H. BUSCHANG (Baylor College of Dentistry, Texas A & M University System, Dallas, USA).

**3384** 3:15 Relation between Clenching Strength and Occlusal Force Distribution in Primary Dentition. H. KARIBE\*, K. OGATA, Y. HASEGAWA, and K. OGIHARA (Nippon Dental University, Tokyo, Japan).

**Seq#: 335 Saturday, March 13, 1:30 pm - 3:30 pm  
Oral Session, Room 12**

**Craniofacial Biology - Palate Development**

**Chairpersons: R. Shah and X.-M. Cui**

**3385** 1:30 Effect of Thrombin on the Growth of the Mouse Primary Palatal Mesenchymal Cells. K.-Y. WANG\* and M.-T. LIN (National Taiwan University, Taipei, ROC).

**3386** 1:45 Immunohistochemical Localization of TGF- $\beta$  Type III Receptor during Palatogenesis. X.-M. CUI\* and C.F. SHULER (Center for Craniofacial Molecular Biology, University of Southern California School of Dentistry, Los Angeles, USA).

**3387** 2:00 Retinoid Metabolism in Developing Murine Palates. C.M. GAGLIARDI\*, C.B. SHIPMAN, and C.S. BEEMAN (College of Dentistry, University of Kentucky, Lexington, USA).

**3388** 2:15 Ultrastructure and Fates of Medial Edge Epithelial Cells during Murine Palatal Fusion *in vivo* and *in vitro*. Y. SOENO\*, Y. SHIMAZU, Y. TAYA, and T. AOBA (Department of Pathology, Nippon Dental University, Tokyo, Japan).

**3389** 2:30 Growth Factor Regulation of *c-fos* Expression during Palate Development. I. KOBAYASHI\*, H. MANGAT, A. SANAIIE, and R.M. SHAH (University of British Columbia, Vancouver, Canada).

**3390** 2:45 EGF/TGF $\beta$ 1 Regulate *c-myc* Expression in Proliferating Palate Mesenchymal Cells. M. IZADNEGAHDAR, P. RATHANA SWAMI, and R.M. SHAH\* (University of British Columbia, Vancouver, Canada).

**3391** 3:00 MT1-MMP, MMP-2, and TIMP-2 are Expressed during Palate Development. L. NICOLETTI\* and C.F. SHULER

(Center for Craniofacial Molecular Biology, University of Southern California, Los Angeles, USA).

**3392** 3:15 The Temporospatial Distribution of TIMPs during Palatal Morphogenesis. H.K. BURCH\*, E. BASCO, and J. MORRIS-WIMAN (Department of Orthodontics, University of Florida College of Dentistry, Gainesville, USA).

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**Seq#: 336**      **Saturday, March 13, 1:30 pm - 3:30 pm**  
**Oral Session, Room A-5**

**Dental Materials - Metal Ceramic Bonding/  
Chemistry of Adhesives**

**Chairpersons: T. Toepke and J. Antonucci**

**3393** 1:30 Pullout Strength of Thermal and Load-cycled Carbon and Stainless Steel Posts. J.L. DRUMMOND, T.R. TOEPKE\*, and T.J. KING (Department of Restorative Dentistry, University of Illinois at Chicago, USA).

**3394** 1:45 Bond Strength to High Precious Alloys Using a New Metal Primer. M. ANTONIADOU\*, M. KERN, and J.R. STRUB (University of Freiburg and University of Kiel, Germany).

**3395** 2:00 Bond Strengths of a Porcelain Material to Different Abutment Substrates. M. FERRARI\*, F. MANNOCCI, A. VICHL, and G. GORACCI (Dental School, University of Siena; and Dental School, University "La Sapienza", Rome, Italy).

**3396** 2:15 Influence of Water Addition to an Acetone-based Dentin Adhesive. U.B. FRITZ\* and W.J. FINGER (University of Cologne, Germany).

**3397** 2:30 Chemical Bonding of Polyalkenoate Acids to Hydroxyapatite. Y. YOSHIDA\*, B. VAN MEERBEEK, Y. NAKAYAMA, J. SNAUWAERT, L. HELLEMANS, P. LAMBRECHTS, G. VANHERLE, and K. WAKASA (Toray Research Center, Hiroshima University, Japan; and KU, Leuven, Belgium).

**3398** 2:45 Stabilization of Demineralized Dentin by N-arylglycines and Their Sodium Salts. T. NIKAIDO\*, J.M. ANTONUCCI, G.E. SCHUMACHER, and J. TAGAMI (Tokyo Medical and Dental University, Japan; and NIST and ADAHF/PRC, Gaithersburg, MD, USA).

**3399** 3:00 Synthesis of Novel Self-etching Primers Based on Aryl Amino Phosphonic Acids. J.M. ANTONUCCI\*, C.A. KHATRI, and G.E. SCHUMACHER (Dental and Medical Materials Group and American Dental Association Health Foundation, Paffenbarger Research Center, National Institute of Standards and Technology, Gaithersburg, MD, USA).

**3400** 3:15 MALDI-TOF MS for Analysis of PCD Combinational Libraries. R.L. BOWEN\*, M. FARAHANI, S.H. DICKENS, and C.M. GUTTMAN (American Dental Association Health Foundation, Paffenbarger Research Center, National Institute of Standards and Technology, Gaithersburg, MD, USA).

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**Seq#: 337**      **Saturday, March 13, 1:30 pm - 3:30 pm**  
**Oral Session, Room A-4**

**Dental Materials - Clinical Trials – Composite Resin**

**Chairpersons: J. Burgess and P. Schuepbach**

**3401** 1:30 Clinical Evaluation of Polyacid Modified Resin Restorations after Use of "Softstart Polymerization". K.-H. FRIEDL\*, H. OBERLÄNDER, G. SCHMALZ, K.-A. HILLER,

and A. KOPP (Department of Operative Dentistry and Periodontology, University of Regensburg, Germany).

**3402** 1:45 Assessment of Long-term Performing Posterior Composite Restorations Using CPM Index. P. GAENGLER\* and W. KAMANN (School of Dental Medicine, University of Witten/Herdecke, Germany).

**3403** 2:00 Efficacy of an Alkaline Glass Composite to Prevent Secondary Caries. P. SCHUEPBACH\*, F. LUTZ, B. GUGGENHEIM, and E. GIERTSEN (University of Zürich, Switzerland; and University of Bergen, Norway).

**3404** 2:15 Evaluation of Liner-Dentin Interface and Sealing Efficiency *in vivo*. K. MERTE\*, I. MERTE, H. SCHNEIDER, and P. GABRIEL (University of Leipzig, Department of Operative Dentistry and Periodontology, Germany).

**3405** 2:30 Clinical Evaluation of Base, Sandwich, and Bonded Class 2 Composite Restorations. J.O. BURGESS\*, J.B. SUMMITT, J.W. ROBBINS, C. HAVEMAN, P.V. NUMMIKOSKI, and G. IAZZETTI (Louisiana State University, New Orleans; and University of Texas Health Science Center at San Antonio, USA).

**3406** 2:45 Retention of Fluoride-releasing Resins as Pits and Fissure Sealants. 2-year Clinical Trial. F. FORNIELES, M. TOLEDANO, R. OSORIO, E. OSORIO, C. PEREZ-PONS\*, and F. GARCÍA-GODOY (University of Granada, Spain; and UTHSC, San Antonio, TX, USA).

**3407** 3:00 Clinical Evaluation of Adhesive Core Materials. J. PHO DUC\*, M. STIMMELMAYR, P. RAMMELSBURG, D. WEBER, and W. GERNET (Department of Prosthodontics, University of Munich, Germany).

**3408** 3:15 Clinical Evaluation of Metal-free Artglass® Crowns. A. DYLLA\*, I. ASCHL, R. VAN KALDENKERKEN-KULIGK, S. LIMBACH, and P. RAMMELSBURG (Department of Prosthodontics, University of Munich, Germany).

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**Seq#: 338**      **Saturday, March 13, 1:30 pm - 3:30 pm**  
**Oral Session, Room A-3**

**Dental Materials - Direct Placement Metallic Restorations**

**Chairpersons: D. Mahler and F. Eichmiller**

**3409** 1:30 Internal and External Corrosion of a Ga-containing Restorative Material. N.K. SARKAR\*, R. MOISEYEVA, D. BERZINS, and J.W. OSBORNE (LSU School of Dentistry, New Orleans, LA; and University of Colorado HSC, Denver, USA).

**3410** 1:45 Amalgam Bonding Agents Tested in a Tensile-shear Mode. D. MAHLER\* and R. BRYANT (Oregon Health Sciences University, Portland, USA).

**3411** 2:00 Compressive Creep of Consolidated Silver. H.J. MUELLER\* (Paffenbarger Research Center, American Dental Association Health Foundation, National Institute of Standards and Technology, Gaithersburg, MD, USA).

**3412** 2:15 Effect of Time-from-Activation on Strength of Consolidated Silver. A.T. GEORGE\*, F.C. EICHMILLER, and A.A. GIUSEPPETTI (National Naval Dental Center, Bethesda; and ADA Health Foundation, Paffenbarger Research Center, NIST, Gaithersburg, MD, USA).

**3413** 2:30 Contamination of Consolidated Silver with Protein Albumin. J. MEADE\*, A.A. GIUSEPPETTI, K.M. HOFFMAN, and F.C. EICHMILLER (Naval Dental School, National Naval Dental Center, Bethesda; and ADAHF Paffenbarger Research Center, NIST, Gaithersburg, MD, USA).

- 3414** 2:45 An Investigation of Silver-coated Ag<sub>4</sub>Sn Dental Alloy Particles Condensed *in vitro*. J.A.T. MARQUEZ\* (University of Texas at El Paso, USA).
- 3415** 3:00 Biocompatibility of an Amalgam Alternative on Non-exposed Primate Dental Pulp. F.C. EICHMILLER\*, G.E. SCHUMACHER, A.A. GIUSEPPETTI, and H.R. STANLEY (American Dental Association Health Foundation/Paffenbarger Research Center, National Institute of Standards and Technology, Gaithersburg, MD; and University of Florida, Gainesville, USA).
- 3416** 3:15 Variation of Mercury Content within Dental Amalgams. F.A. YOUNG\* and J.S. KNIGHT (Medical University of South Carolina, Charleston, USA).

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**Seq#: 339**      **Saturday, March 13, 1:30 pm - 3:30 pm**  
**Oral Session, Room A-2**

### Dental Materials - Endodontics

**Chairpersons: W. Callahan and R. Kazemi**

- 3417** 1:30 A SEM Study of Surface Aspects of Curved Root Canal Walls Prepared by Three Ni-Ti Endodontic Files. E. MEDIONI\*, M.F. BERTRAND, P. PIZZARDINI, and M. MULLER (Department of Endodontics, D.B.E.O. Laboratory, Nice, France).
- 3418** 1:45 SEM Study on the Quality of Root Canal Treatment with LightSpeed, ProFile, and Quantec. M. ROGGENDORF\*, M.A. BAUMANN, U.A. BAUMANN-GIEDZIELLA, and M. HELLMICH (Universities of Köln and Düsseldorf, Germany).
- 3419** 2:00 Visual and SEM Assessment of Endodontic File Damage. H.M. MAKKAHY and W.S. CALLAHAN\* (College of Dentistry, UNMC, Lincoln, NE, USA).
- 3420** 2:15 Comparison of Stainless-steel and Nickel-Titanium Hedström Type Instruments of Identical Design. R.B. KAZEMI\*, E. STENMAN, and L.S.W. SPÅNGBERG (University of Connecticut, Farmington, USA; and University of Umeå, Sweden).
- 3421** 2:30 Comparison of Strength for Seven Different Post Materials. R.A. HOLLIS\*, G.J. CHRISTENSEN, W. CHRISTENSEN, K. HUNSAKER, T. LARSON, and R.P. CHRISTENSEN (Clinical Research Associates, Provo, UT, USA).
- 3422** 2:45 Preparing Curved Canals: Operator's Influence on Ni-Ti Profile Breakage. E. MANDEL\*, J. AZERAD, and M. JANIAN (Endodontics, Dental Faculty, University of Paris VII, France).
- 3423** 3:00 Apical Leakage of Thermafil vs. Lateral Condensation after Treatment with ProFile .04. C. JUNG\*, M.A. BAUMANN, and R.-D. HILGERS (Department of Operative Dentistry and Periodontology and Medical Statistics, University of Cologne, Germany).
- 3:15 Discussion

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**Seq#: 340**      **Saturday, March 13, 1:30 pm - 3:30 pm**  
**Poster Discussion Session, Room 13**

### Dental Materials - Composite Bond Strength: One-step Systems

**Chairpersons: N. Hofmann and T. Yamada**

- 1:30 Poster Viewing Time
- 3424** 2:00 Efficacy of One-bottle Dentin Adhesives for Bonding Composite Resin to Dentin. N. HOFMANN\*, M.

SARAJALJIA, M. FÖRSTER, B. HUGO, and B. KLAIBER (Department of Operative Dentistry and Periodontology, University of Würzburg, Germany).

- 3425** 2:08 Evaluation of Self-etching Priming Agents for Composite-to-Enamel Bonding. B. BOTT\*, M. HANNIG, and K.-J. REINHARDT (Clinic of Operative Dentistry, University of Kiel; and Institute for Experimental Dentistry, University of Münster, Germany).
- 3426** 2:16 Bond Strength and Microleakage of Resin Adhesive Systems Adopting "One-bottle" Self-etching Primer. T. MASEKI\*, S. SUDA, T. NITTA, Y. NARA, H. TANAKA, and I.L. DOGON (Nippon Dental University, Japan; and Harvard School of Dental Medicine-Forsyth Dental Center, Boston, MA, USA).
- 3427** 2:24 Laboratory Evaluation of One-component Dental Adhesives. M.A. LATTA, R.S. SHADDY\*, and W.W. BARKMEIER (Creighton University School of Dentistry, Omaha, NE, USA).
- 3428** 2:32 Tensile Bond Strength of Newly Designed Self-etching Primer Bonding System. T. YAMADA\*, J. SUGIZAKI, S. HORIGUCHI, and M. OKUDA (Toranomon Hospital Dental Clinic, Tokyo, Japan).
- 3429** 2:40 Shear Bond Strength to Enamel Using Four Etchants. A.H. RIPPS\*, X. XU, and J.O. BURGESS (School of Dentistry, Louisiana State University, New Orleans, USA).
- 3430** 2:48 Shear Bond Strength of Self-etching Dentin Bonding Adhesives. A. ARELLANO\*, L.M. PIRES LOPES, M. BERNARDO, B. LÓPEZ-AREAL, and J. LEITÃO (Department of Odontology, University of the Basque Country, Bilbao, Spain; and Department of Dental Materials, School of Dentistry, University of Lisbon, Portugal).
- 3431** 2:56 *In vitro* Dentin Shear Bond Strength Study of Various Adhesives. P.D. HAMMESFAHR\*, J. SANG, and L.C. HAYES (DENTSPLY/Caulk, Milford, DE, USA).
- 3:04 Poster Discussion Time

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**Seq#: 341**      **Saturday, March 13, 1:30 pm - 3:30 pm**  
**Oral Session, Room 9**

### Diagnostic Systems - Radiographic Diagnosis

**Chairpersons: M. Analoui and P. van der Stelt**

- 3432** 1:30 Comparative Study of Cross-sectional Presurgical Implant Imaging Using Five Modalities. H. LIANG\*, D.A. TYNDALL, J.B. LUDLOW, and L.A. LANG (University of North Carolina at Chapel Hill, NC, USA).
- 3433** 1:45 Granulometric Approach for Analysis of Oral Bone Texture. M. ANALOUI\*, L.P. GARETTO, and W.E. ROBERTS (School of Dentistry, Indiana University, Indianapolis, USA).
- 3434** 2:00 Interpretation of Bone Striae on Dental Radiographs. M. CAVALCANTI\*, A. RUPRECHT, W. JOHNSON, T.E. SOUTHARD, and J.R. JAKOBSEN (College of Dentistry, University of Iowa, Iowa City, USA).
- 3435** 2:15 Localized CT in a Clinical Environment: A Feasibility Study. P.F. van der STELT\* and S.M. DUNN (ACTA, Amsterdam, The Netherlands; and Rutgers University, New Jersey, USA).
- 3436** 2:30 Direct Magnification Technique in Dental Radiology. M. WICHMANN\* and A. IRTEL VON BRENNENDORFF (Department of Prosthodontics, Medical University Hannover; and Feinfocus GmbH, Garbsen, Germany).

**3437** 2:45 Robustness of Bone Loss Estimates Using Digital Subtraction Radiography. A. MOL\*, J.-E. BOSSERT, T.J. ROACH, and S.M. DUNN (*University of Rochester Eastman Department of Dentistry, NY; and Rutgers University, Piscataway, NJ, USA*).

**3438** 3:00 A Flexible Reconstruction Program for Use in Digital Subtraction Radiology. L.M. BROCKLEBANK\*, C. MCGOVERN, J. JIN, J.P. SIEBERT, and P.F. van der STELT (*University of Glasgow; Turing/Faraday Partnership; Faraday Partnership, Glasgow, Scotland, UK; and ACTA, Amsterdam, The Netherlands*).

**3439** 3:15 Direct Digital Radiographic Image Subtraction in Measurement of Bone Density Change. P.V. NUMMIKOSKI\* and E.D. KUHL (*University of Texas Health Science Center at San Antonio, USA*).

**Seq#: 342** **Saturday, March 13, 1:30 pm - 3:30 pm**  
**Poster Discussion Session, Room 14**

**Experimental Pathology - Oral Mucosa, Keratinocytes, & Fibroblasts**

**Chairpersons: M.A. Reynolds and S.H. Ashrafi**

**3440** 1:30 Cell Cycle Distribution and Expression of Collagen/Hsp47 in Hereditary Gingival Fibromatosis. R.D. COLETTA\*, C. HEBERT, K. NORRIS, O.P. ALMEIDA, L.R. FERREIRA, and J.J. SAUK (*University of Campinas Dental School, Piracicaba, São Paulo, Brazil; and University of Maryland Dental School, Baltimore, USA*).

**3441** 1:45 Expression of Multidrug Resistance 1 Gene (MDR1) in Oral Keratinocytes. M.A. REYNOLDS\*, C. HEBERT, K. NORRIS, V.A. MURRAH, and J.J. SAUK (*University of Maryland, Baltimore; and University of North Carolina, Chapel Hill, USA*).

**3442** 2:00 Effects of Protease Inhibitors on Desquamation from Buccal Mucosa. D. SQUIRE\*, C.A. SQUIER, and P.W. WERTZ (*Dows Institute for Dental Research, College of Dentistry, University of Iowa, Iowa City, USA*).

**3443** 2:15 *In vitro* Reconstitution of Epidermal and Palatal Stratum Corneum Lipid Lamellae. M. HOWARD\*, D.C. SWARTZENDRUBER, C.A. SQUIER, and P.W. WERTZ (*Dows Institute, College of Dentistry, University of Iowa, Iowa City, USA*).

**3444** 2:30 Keratinocyte Growth Factor Promotes Keratinocyte Cell Attachment and Migration. E.E. PUTNINS\*, J.D. FIRTH, V.-J. UITTO, and H. LARJAVA (*Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).

**3445** 2:45 Staurosporine-induced Keratinocyte Spreading on Fibronectin is Mediated by  $\alpha$ v and  $\beta$ 1 Integrins. K. ALAVIAN\*, L. HÄKKINEN, L. KOIVISTO, and H. LARJAVA (*Oral Biological and Medical Sciences, Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).

**3446** 3:00 Microvasculature in Cyclosporin A-induced Gingival Overgrowth in Rats. S.H. ASHRAFI\*, A. AHMED, and S. JOHNSON (*Department of Oral Medicine and Diagnostic Science, College of Dentistry, University of Illinois at Chicago, USA*).

**3447** 3:15 Bacterial PLC Alters Epithelial Integrin Expression and Localization. J.D. FIRTH\*, E.E. PUTNINS, H. LARJAVA, and V.-J. UITTO (*Faculty of Dentistry, University of British Columbia, Vancouver, Canada*).

**Seq#: 343** **Saturday, March 13, 1:30 pm - 3:30 pm**  
**Oral Session, Ballroom A**

**Implantology - Role of Augmentation and Growth Factor Delivery Systems on Bone Healing**

**Chairpersons: J. Mitchell and P. Passi**

**3448** 1:30 Proliferation of Osteoblasts on an Experimental Bioactive Glass Bone Implant Material. J.C. MITCHELL\*, A. WINNARD, and A.M. MOURSI (*Ohio State University, Columbus, USA*).

**3449** 1:45 Alveolar Ridge Augmentation with rhBMP-2 and Staged Dental Implant Placement. T.J. SIGURDSSON\*, S. NGUYEN, and U.M.E. WIKESJÖ (*Loma Linda University, CA; and Genetics Institute, Inc., Andover, MA, USA*).

**3450** 2:00 Transforming Growth Factor- $\beta$ 1 Released from Calcium Phosphate Cement Affects Bone Cell Differentiation. E.J. BLOM\*, J. KLEIN-NULEND, C.P.A.T. KLEIN, M.A.J. VAN WAAS, and E.H. BURGER (*Department of Oral Function and Department of Oral Cell Biology, ACTA-University of Amsterdam and Vrije Universiteit, The Netherlands*).

**3451** 2:15 Bone-Implant Interface following One-stage Sinus Lift Surgery Using Porous Hydroxyapatite in Sheep. R. HAAS\*, K. DONATH, O. DÖRTBUDAK, and G. WATZEK (*Oral Surgery, University of Vienna, Austria; and Oral Pathology, University of Hamburg, Germany*).

**3452** 2:30 Hydroxylapatite Grafts in Sinus Augmentation. P. PASSI\*, S. ARACCI, G.B. GIRARDELLO, and A. ZADRO (*Dental School, University of Padua, Italy*).

**3453** 2:45 Ridge Augmentation Using Deproteinized Bone Mineral—Evaluation of Functional Loading. L. MAYFIELD\*, A. SKOGLUND, P. HISING, and R. ATTSTRÖM (*Lund University, Malmö, Sweden; and University of Bern, Switzerland*).

**3454** 3:00 Response of Bisphosphonate- and Estrogen-treated Neutrophils to Titanium. A.S. SORDELLI\*, M.A. MOORE, L.P. GARETTO, and M.J. KOWOLIK (*Department of Periodontics and Department of Cranio-facial Development, Indiana University, Indianapolis, USA*).

**3455** 3:15 Titanium Implant Treated with Salmon Calcitonin: Histologic and Histometric Analysis. S. PAPPALARDO\*, A. SCARANO, M. PIATTELLI, L. DI ALBERTI, and A. PIATTELLI (*Dental Schools, University of Catania and University of Chieti, Italy*).

**Seq#: 344** **Saturday, March 13, 1:30 pm - 3:30 pm**  
**Oral Session, Room A-1**

**Microbiology/Immunology - Immune Response to Oral Bacteria and Antigens**

**Chairpersons: C. Cutter and Y. Jiang**

**3456** 1:30 Comparison of Cytokine Production by Pulpal and Gingival Fibroblasts. C.M. AULD\*, H. BECK, M.M. D'ALESSANDRO, J.D. JOHNSON, and G.A. MILLER (*Naval Dental Research Institute; and Geo-Centers, Inc., Bethesda, MD, USA*).

**3457** 1:45 Cultured Dendritic Cells Capture the Phagocytosis-resistant Pathogen *Porphyromonas gingivalis* and Undergo Maturation. C.W. CUTLER\*, R. JOTWANI, A.K. PALUCKA, S. BURKEHOLDER, E.T. KRAUS, and J. BANCHEREAU (*Baylor College of Dentistry—Texas A&M*).



University System, Dallas; and Baylor Institute for Immunology Research, Dallas, TX, USA).

**3458** 2:00 Passive Antibody Transfer Prevents Disseminated Infections in RAG-2 SCID Mice. L. HOU\* and P. STASHENKO (Department of Cytokine Biology, Forsyth Dental Center, Boston, MA, USA).

**3459** 2:15 Responses of Murine CD5<sup>+</sup> and Conventional B Cells to Lipopolysaccharide. J.R. PHILIPS\*, W.L.K. MASSEY, and N. HUNTER (Institute of Dental Research, Surry Hills; and Faculty of Dentistry, University of Sydney, Australia).

**3460** 2:30 Mucosal Adjuvanticity of the Serogroup II Heat-labile Enterotoxin B Subunits. M.H. MARTIN\*, T.E. GREENWAY, D. METZGER, T.D. CONNELL, and S.M. MICHALEK (Department of Microbiology, School of Dentistry, University of Alabama at Birmingham; and State University of New York at Buffalo, USA).

**3461** 2:45 Comparative Studies on Cytokine Production in Mice to Periodontal Pathogens. K. SAITO\*, C. KATO, and H. KATSURAGI (The Nippon Dental University at Niigata, Japan).

**3462** 3:00 Bacteria-dependent Induction of Cytokines and Pathologic Consequence *in vivo*. Y. JIANG\*, L. MAGLI, and M. RUSSO (Department of Endodontics, School of Dental Medicine, Boston University, MA, USA).

**3463** 3:15 Immunocytochemical Characterization of Immune Cells in Lesions of Oral Lichen Planus and Oral Mucosa of Healthy Individuals. M. VILLARROEL\*, M. CORRENTI, N.L. DÍAZ, L.V. PONCE, and F.J. TAPIA (Facultad de Odontología, Instituto de Oncología y Hematología, Instituto de Biomedicina, Universidad Central de Venezuela, Caracas, Venezuela).

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**Seq#: 345** **Saturday, March 13, 1:30 pm - 3:30 pm**  
**Oral Session, Ballroom C**

### Mineralized Tissue - Bone & Mineralization

**Chairpersons: H. Goldberg and N. Eidelman**

**3464** 1:30 SM30 and SM50 Protein Detection and Ultrastructural Analysis of Sea Urchin Tooth Biomineralization. P. SATCHEL\*, B. TRAN, and T.G.H. DIEKWISCH (Baylor College of Dentistry, Texas A&M University System, Dallas, USA).

**3465** 1:45 Responses of Human Osteoporotic Bone Cells to Mechanical Strain. B.S. KHANUJA\*, C.M. STANFORD, R. ZAHARIAS, F. WELSCH, and R. BRAND (Dows Institute for Dental Research, University of Iowa, Iowa City, USA). (1998 AADR Student Fellowship Recipient)

**3466** 2:00 Response of Oral-derived Human Bone Cells to Static Stretch. J.L. BORKE\*, J.M. MAILHOT, and S.H. STEIN (Department of Oral Biology and Maxillofacial Pathology and Department of Periodontics, Medical College of Georgia, Augusta, USA).

**3467** 2:15 Does Fluoridated Water Alter the Mechanical and Material Properties of Human Bone? D. CHACHRA\*, H. LIMBACK, A.E. GROSS, C.H. HUTCHISON, D. ZUKOR, M. SCHWARTZ, and M.D. GRYNPAS (Mt. Sinai Hospital, University of Toronto, Canada).

**3468** 2:30 Elastic Properties of Dentin are Not Affected by Tubule Orientation. J.H. KINNEY\*, M. BALOOCH, G.W. MARSHALL, and S.J. MARSHALL (Lawrence Livermore National Laboratory, CA; and University of California, San Francisco, USA).

**3469** 2:45 Regulation of Hydroxyapatite Formation by Bone Sialoprotein and Osteopontin. H.A. GOLDBERG\*, G.K. HUNTER, M.A. MUNDY, and M.D. McKEE (University of Western Ontario, London; and McGill University, Montreal, Canada).

**3470** 3:00 Crystal Structure of Dicalcium Etidronate and Implications on Biological Activity. M. MATHEW\* and N. EIDELMAN (American Dental Association Health Foundation, Paffenbarger Research Center, National Institute of Standards and Technology, Gaithersburg, MD, USA).

**3471** 3:15 Calcified Bovine Pericardium Mapping by Transmission FTIR and X-ray Microscopes. N. EIDELMAN\*, H. COHEN, G. GOLOMB, and C.G. ZIMBA (American Dental Association Health Foundation-Paffenbarger Research Center and Polymer Division, National Institute of Standards and Technology, Gaithersburg, MD, USA; and Hebrew University, Jerusalem, Israel).

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**Seq#: 346** **Saturday, March 13, 1:30 pm - 3:30 pm**  
**Oral Session, Room 17**

### Neuroscience/TMJ - Temporomandibular Joint: Physical Findings, Diagnosis, Management

**Chairpersons: L. Gallo and J. Nickel**

**3472** 1:30 Tumor Necrosis Factor  $\alpha$  in Temporomandibular Joint Synovial Fluid. S. NORDAHL\*, P. ALSTERGREN, and S. KOPP (Department of Clinical Oral Physiology, Karolinska Institutet, Huddinge, Sweden).

**3473** 1:45 Temporomandibular Synovial Fluid Sampling with Vitamin B<sub>12</sub> as External Marker. P. ALSTERGREN\*, S. KOPP, and E. THEODORSSON (Department of Clinical Oral Physiology, Karolinska Institutet, Huddinge, Sweden).

**3474** 2:00 Plasma and Serum Serotonin Levels and Their Relation to Chronic Pain. M. ERNBERG\*, P. ALSTERGREN, T. LUNDEBERG, and S. KOPP (Departments of Clinical Oral Physiology and Physiology and Pharmacology, Karolinska Institutet, Stockholm, Sweden).

**3475** 2:15 Reproducibility of Temporomandibular Joint Clicking. L.M. GALLO\*, A. SVOBODA, and S. PALLA (Center for Dental and Oral Medicine and Maxillofacial Surgery, University of Zürich, Switzerland).

**3476** 2:30 Long-term Pain and Impairment Associated with Temporomandibular Joint Implants: Preliminary Findings. J.O. LOOK\*, J.R. FRICTON, E.L. SCHIFFMAN, P. YU, B.T. LOWRY, and P.L. CARLSON (School of Dentistry, University of Minnesota, Minneapolis, USA).

**3477** 2:45 Long-term Maxillomandibular Skeletal Effects of Alloplastic Temporomandibular Joint Implants. C.C. SEE\*, J.O. LOOK, and J.R. FRICTON (University of Minnesota School of Dentistry, Minneapolis, USA).

**3478** 3:00 Physical Self-regulation Training for the Management of Trigeminal Pain. C.R. CARLSON\*, P.M. BERTRAND, D. EHRlich, A. MAXWELL, and R. BURTON (University of Kentucky, Lexington; and Naval Dental School and National Naval Medical Center, Bethesda, MD, USA).

3:15 Discussion

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**Seq#: 347** **Saturday, March 13, 1:30 pm - 3:30 pm**  
**Oral Session, Room 7**

### Oral & Maxillofacial Surgery - TMJ

**Chairpersons: O. Abubaker and J. Van Sickels**

**3479** 1:30 The Effects of Ramus Orientation after Orthognathic Surgery. W.W. LONEY, J.E. VAN SICKELS\*, B.H. BRITTON, S. SAKAI, and J.D. RUGH (*University of Texas Health Science Center at San Antonio, USA*).

**3480** 1:45 Long-term Analysis of Arthrocentesis in Treatment of Internal Derangements. W.A. CARVAJAL\* and D.M. LASKIN (*Department of Oral and Maxillofacial Surgery, Medical College of Virginia, Richmond, USA*).

**3481** 2:00 Detection of Procollagen II C-Propeptide in TMJ Synovial Fluid. T. SHIBATA\*, K. MURAKAMI, E. KUBOTA, I. YAMAMORI, and N. YOSHIZAWA (*Department of Dentistry & Oral Surgery, School of Medicine, Yamagata University; Kyoto University; and Kanagawa Dental College, Japan*).

**3482** 2:15 New Method of MRI Assessment of Traumatic Disco-ligamental Disorders. A. KOLK\*, A. NEFF, H.H. HORCH, and O. BERNHARD (*Department of Oro-Maxillo-Facial-Surgery, University of Technology, Munich, Germany*).

**3483** 2:30 Differences in Procollagen Types I and III between Male and Female in Rat TMJ Disc. A.O. ABUBAKER\* and Y. DUAN (*Department of OMFS, VCU School of Dentistry, Richmond, VA, USA*).

**3484** 2:45 Culture of Temporomandibular-joint-derived Chondrocytes on Non-absorbable Scaffolds. I.N.G. SPRINGER\*, Y. AÇIL, and B. FLEINER (*Department of Oral and Maxillofacial Surgery, Christian-Albrechts-University, Kiel, Germany*).

**3485** 3:00 An Animal Model for Anterior Disc Displacement of TMJ. X. LONG\*, J.R. LI, and X.M. CHEN (*Hospital of Stomatology, Hubei Medical University, Wuhan, China*).

3:15 Discussion

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**Seq#: 348** **Saturday, March 13, 1:30 pm - 3:30 pm**  
**Oral Session, Room 1**

**Periodontal Research – Diagnosis/Epidemiology - Systemic/Periodontal Diseases: Diabetes, Tobacco Use, Lung Disease, and HIV**

**Chairpersons: S. Grossi and R. McKaig**

**3486** 1:30 Periodontal Disease Increases the Risk for Insulin Resistance. S.G. GROSSI\*, R. DONAHUE, T. QUATTRIN, M. TREVISAN, A.W. HO, and R.J. GENCO (*Department of Oral Biology, School of Dental Medicine; and Departments of Social and Preventive Medicine and Pediatrics, School of Medicine and Biomedical Sciences, State University of New York at Buffalo, USA*).

**3487** 1:45 Prevalence of Periodontitis in a Well-controlled Diabetic Population. S. GUZMAN\*, Z. TOHME, and T.E. VAN DYKE (*Department of Periodontology and Oral Biology, Boston University School of Dental Medicine, MA, USA*).

**3488** 2:00 Association of Tooth Loss and Diabetes Using BRFS. D.L. MOSS\*, J.C. CLEVELAND, and S. GRIFFIN (*Centers for Disease Control and Prevention, Division of Oral Health, Atlanta, GA, USA*).

**3489** 2:15 Assessment of Passive Smoking and Risk for Periodontal Disease. A.W. HO\*, S.G. GROSSI, and R.J. GENCO (*Department of Oral Biology, School of Dental Medicine, SUNY at Buffalo, NY, USA*).

**3490** 2:30 Effects of Smoking and Treatment Status on Periodontal Marker Bacteria. F.-M. EGGERT\*, M.H. McLEOD, and G. FLOWERDEW (*University of Alberta, Edmonton; and Dalhousie University, Halifax, Nova Scotia, Canada*).

**3491** 2:45 Association of Periodontal Disease and Chronic Lung Disease: Analysis of NHANES III. F.A. SCANNAPIECO\* and A.W. HO (*Department of Oral Biology, University at Buffalo, NY, USA*).

**3492** 3:00 Preliminary Evaluation of Periodontal Status of WIHS Women. M. ALVES\*, R. MULLIGAN, S. GANGE, M. REDFORD, and B. CHEIKH (*College of Dentistry, University of Illinois at Chicago; University of Southern California—Los Angeles; WDMAC—Baltimore, MD; NIDCR/NIH, Bethesda, MD; and University of California at San Francisco, USA*).

**3493** 3:15 Risk Factors for Incident Periodontitis in HIV Infection. R.G. McKAIG\*, L.L. PATTON, R.P. STRAUSS, and J.J. ERON, Jr. (*School of Dentistry, University of North Carolina at Chapel Hill, USA*).

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**Seq#: 349** **Saturday, March 13, 1:30 pm - 3:30 pm**  
**Oral Session, Room 8**

**Periodontal Research – Therapy - Systemic Drugs and Oral Rinse**

**Chairpersons: I. Chapple and J. Caton**

**3494** 1:30 Effect of Systemically Administered Metronidazole on Subgingival Plaque Composition. M. FERES\*, A.D. HAFFAJEE, K. ALLARD, S. SOM, and S.S. SOCRANSKY (*Forsyth Dental Center, Boston, MA, USA*).

**3495** 1:45 Systemic Metronidazole Kills Bacteria Found within the Dentinal Tubules. S. PASTERNAK\*, J. STOLL, J. GIORDANO, L. HALL, and W.J. LOESCHE (*University of Michigan, Ann Arbor; and University of Detroit Mercy, MI, USA*).

**(1997 AADR Student Fellowship Recipient)**

**3496** 2:00 The Effects of Scaling, Root Planing, and Systemic Metronidazole in Surgically Treated Refractory Periodontitis in a Five-year Study. P.-Ö. SÖDER\*, B. SÖDER, and L.J. JIN (*Department of Odontology, Karolinska Institute, Stockholm, Sweden*).

**3497** 2:15 Post-treatment Effects of Adjunctive Sub-antimicrobial-dose Doxycycline Therapy. J.G. CATON\*, S.G. CIANCIO, R. CROUT, A.F. HEFTI, and A.M. POLSON (*Eastman Dental Center, Rochester, NY; SUNY Buffalo, NY; West Virginia University, Morgantown; University of Florida, Gainesville; and University of Pennsylvania, Philadelphia, USA*).

**3498** 2:30 LPS-induced Periodontitis in Rats: Response to CMT-8/Bisphosphonate Combination Therapy. A. LLAVANERAS, Y. LIU\*, N.S. RAMAMURTHY, M.E. RYAN, S. RAKHMAN, T. SORSA, O. TERONEN, T. SALO, and L.M. GOLUB (*University of Central Venezuela; State University of New York, Stony Brook, USA; University of Helsinki; and University of Oulu, Finland*).

**3499** 2:45 Anti-oxidant and Anti-inflammatory Effects of Co-enzyme Q10—A Preliminary Study. N. DENNY, I.L.C. CHAPPLE\*, and J.B. MATTHEWS (*School of Dentistry, University of Birmingham, UK*).

**3500** 3:00 Reduction of Intrinsic Oral Malodor with Daily Use of a Zinc/NaClO<sub>2</sub> Mouthwash. H. KAUFMAN\*, M. CODIPILLY, S. SOUTHWORTH, and I. KLEINBERG (*State University of New York, Stony Brook; and Triumph Pharmaceuticals, Naples, FL, USA*).

**3501** 3:15 Efficacy of a Histatin Mouthrinse in an Experimental Gingivitis Phase 1/2 Clinical Trial. N. MICKELS\*, C. McMANUS, S. DIBART, S. KARATZAS, J. MASSARO, P. FRIDEN, and T.E. VAN DYKE (*Boston University School of Dental Medicine, MA, USA*).

**Seq#: 350** **Saturday, March 13, 1:30 pm - 3:30 pm**  
**Oral Session, Room 10**

**Prosthodontics - Implant Therapy: Treatment Planning, Clinical Outcomes, Framework Design/Properties of Titanium Castings**

**Chairpersons: H. Morris and S. Heckmann**

**3502** 1:30 Improvement of Spiral Tomography for Implant Treatment Planning. C.E. BESIMO\*, P. JORDI, J. BEREZOWSKY, and J.S. GUINDY (*School of Dentistry, University of Basel, Switzerland*).

**3503** 1:45 Implant Survival in Smokers and Non-smokers: to 36 Months. H.F. MORRIS\*, S. OCHI, P.M. LAMBERT, H. GILBERT, and R.S. TRUHLAR (*Department of Veterans Affairs, Clinical Dental Research Center, VA Medical Center, Ann Arbor, MI, USA*).

2:00 Discussion

**3504** 2:15 Implant- and Prosthesis-bearing Area Loading via Different Connecting Elements. S. HECKMANN\* and W. WINTER (*Departments of Prosthodontics and Mechanics, University of Erlangen-Nuremberg, Germany*).

**3505** 2:30 Accuracy of Implant Upper Structure with Four Different Fabrication Methods. M. OKAMURA\*, H. KAKIGAWA, and Y. KOZONO (*Kyushu Dental College, Kitakyushu, Japan*).

**3506** 2:45 Castability of Non-precious Dental Alloy for Fixed Implant Bridge. M. KIM\* and S. CHO (*Kyung Pook National University, Tae-Ku, Korea*).

**3507** 3:00 Radiographic Assessment of cpTitanium Dental Castings. A.H. FENTON\* and G. LINDBERG (*Faculty of Dentistry, University of Toronto, ON, Canada*).

**3508** 3:15 Evaluation of a Solution-treated Ti-Co Alloy for Dental Castings. R.R. WANG\*, G.E. WELSCH, M. CASTRO-CEDENO, and D.R. HULL (*Case Western Reserve University School of Dentistry, Cleveland, OH; and NASA Lewis Research Center, Cleveland, OH, USA*).

**Seq#: 351** **Saturday, March 13, 1:30 pm - 3:30 pm**  
**Oral Session, Room 16**

**Salivary Research - Salivary Proteins/Molecules/Disease**

**Chairpersons: R. Rykke and A. Hand**

**3509** 1:30 Expression of Secretory Proteins in Juvenile Saliva. T.P. SIVAKUMAR\*, L.L. OTIS, A. HAND, J.J. BURKE, and M.I. MEDNIEKS (*School of Dental Medicine, University of Connecticut, Farmington; and College of Dentistry, University of Illinois, Chicago, USA*).

**3510** 1:45 Secretory Protein Expression in Diabetic Rat Submandibular Glands. C.B. CLARK\*, M.I. MEDNIEKS, and A. HAND (*University of Connecticut Health Center, Farmington; and College of Dentistry, University of Illinois, Chicago, USA*).

**3511** 2:00 Evaluation of Tyrosine Sulfation Activity in Saliva of Caries-free and Caries-active Children. G.R. SINGH\*, P. RAMAPRASAD, C. KASINATHAN, B. MACÉDO, S. VON

HAGEN, and M. RAMOS (*Department of Pediatric Dentistry, NJ Dental School, Newark, USA*).

**3512** 2:15 Salivary Protein Content in Patients Exhibiting Tooth Wear. M. RYKKE\* (*Dental Faculty, University of Oslo, Norway*).

**3513** 2:30 Effects of Smoking on DMFS Levels, Salivary Immunoglobulins, and Parotid Gland Flow Rates. J. GOLDSTEIN\*, D. MIJARES, A.R. LeGEROS, J.P. LeGEROS, F. RESILLEZ, and D.J. SMITH (*New York University College of Dentistry, New York; and Forsyth Dental Center, Boston, MA, USA*).

**3514** 2:45 Conservation of Salivary IgAs Integrity and Antibody Function after Contact with Antiseptic Agents and Corresponding Mouthrinses. C. ROQUES\*, L. HADDIOUI, H. BELKHELFA, and M. FEDERLIN (*UFR de Pharmacie, Toulouse; and Institut de Recherche P. Fabre, Castres, France*).

**3515** 3:00 Identification and Characterization of Transglutaminase Crosslinked Pellicle Precursor Proteins. Y. YAO\*, M.S. LAMKIN, U. LENDENMANN, and F.G. OPPENHEIM (*Department of Periodontology and Oral Biology, School of Dental Medicine, Boston University, MA, USA*).

3:15 Discussion

**Seq#: 352** **Saturday, March 13, 3:30 pm - 5:30 pm**  
**Oral Session, Room 11**

**Behavioral Sciences & Health Services Research - Tooth Loss**

**Chairpersons: M. Rohlin and N. Mehta**

**3516** 3:30 Stability of Taste and Smell Ratings at Six Years in Healthy Volunteers. M.W. HEFT\*, N. BOYETT, and N.P. CLARK (*Claude D. Pepper Center, University of Florida, Gainesville, USA*).

**3517** 3:45 Self-evaluation of Oral Malodor and Its Relation to Physiologic Measurements and Body Image Characteristics. H. KORAIAT\*, R. BAHT, and I. ELI (*School of Dental Medicine, Tel Aviv University, Israel*).

**3518** 4:00 Treatment Decision on Prophylactic Removal of Mandibular Third Molars: A Comparison between Sweden and Wales. K. KNUTSSON, L. LYSELL, M. ROHLIN\*, M.R. BRICKLEY, and J.P. SHEPHERD (*Faculty of Odontology, Malmö, Sweden; and College of Medicine, University of Wales, Cardiff, UK*).

**3519** 4:15 Risk Factors for Early Loss of First Permanent Molar in Children. A. CASANOVA\* and M.P. GUTIÉRREZ (*University of Campeche, México*).

**3520** 4:30 Reasons for Tooth Loss in the Eastern States of Germany. E. GLOCKMANN\*, J. KÖHLER, and B. SIGUSCH (*Department of Conservative Dentistry, University of Jena, Germany*).

**3521** 4:45 A Survey of Main Reasons for Extraction of Permanent Teeth in China. S.N. ZHANG\* and Y. HU (*The Stomatological Hospital of Guang Dong Province, Guang Zhou, China*).

**3522** 5:00 An Analysis of Reasons for Extraction of Permanent Teeth in Guangzhou City, China. Y. HU\*, S.N. ZHANG, and X.S. ZHENG (*The Stomatological Hospital of Guang Dong Province, Guang Zhou, China*).

**3523** 5:15 Cost-effectiveness Analysis of Extraction Strategies in Patients on Coumadin Therapy. T.E. THIERER\* (*Eastman Department of Dentistry, University of Rochester, NY, USA*).

**Seq#: 353**      **Saturday, March 13, 3:30 pm - 5:30 pm**  
**Poster Discussion Session, Room 13**

**Craniofacial Biology - Growth and Transcription Factors**

**Chairpersons: M. Mina and J. Moiseiwitsch**

3:30    Poster Viewing Time

**3524**    4:00    Localization of p21/waf-1/cip-1 and p27/kip-1 at Differentiation in Oral Tissues. J. MITAMURA\*, Y. ABIKO, M. NISHIMURA, and T. KAKU (*Oral Pathology, Health Sciences University of Hokkaido; and Pathology, Tokyo Dental College, Japan*).

**3525**    4:08    FGFs Regulate Proliferation and *Msx-1* Expression in Chick Mandibular Mesenchyme. Y.-H. WANG, B. RODGERS, A.M. IVANISEVIC, and M. MINA\* (*School of Dental Medicine, University of Connecticut Health Center, Farmington, USA*).

**3526**    4:16    Serotonergic Receptor Expression during Mouse Mandibular Development. J.R.D. MOISEWITSCH\* (*School of Dentistry, University of North Carolina at Chapel Hill, USA*).

**3527**    4:24    Signaling from G-protein-coupled Receptors to the *c-jun* Promoter Involves Multiple MAP Kinase Cascades. D. STEINBACHER\*, M.J. MARINISSEN, M. CHIARIELLO, and J.S. GUTKIND (*Oral and Pharyngeal Cancer Branch, National Institute of Dental and Craniofacial Research, Bethesda, MD, USA*).

**3528**    4:32    Interruptions in *Sonic hedgehog* Signaling Produce the Range of Holoprosencephaly Defects. E. HATTA\*, D. HU, and J.A. HELMS (*University of California, San Francisco, USA*).

**3529**    4:40    The Role of MSX1 in the Etiology of Congenital Hypodontia. B. REISING\* and A. LIDRAL (*Ohio State University, Columbus, USA*).

**3530**    4:48    Distribution of *Desert hedgehog* mRNA in Embryonic Mouse Craniofacial Tissues. J. KRONMILLER\* and T. NGUYEN (*School of Dentistry, Oregon Health Sciences University, Portland, USA*).

4:56    Poster Discussion Time

**Seq#: 354**      **Saturday, March 13, 3:30 pm - 5:30 pm**  
**Oral Session, Room A-5**

**Dental Materials - Orthodontic/Endodontic Post Adhesion/ Resin Cement Adhesion**

**Chairpersons: R. Hobson and P. Triolo**

**3531**    3:30    Orthodontic Bond Strengths on Different Teeth. R.S. HOBSON\*, J.F. McCABE, and S.D. HOGG (*Dental School, University of Newcastle upon Tyne, UK*).

**3532**    3:45    Glass Ionomers in Orthodontic Bonding: Acceptable Bond Strengths? P.E. ROSSOUW\*, K.S. COUPS SMITH, K.C. TITLEY, and C. YAMIN (*Department of Orthodontics, University of Toronto, ON, Canada*).

**3533**    4:00    Effect of Recycled Teeth on Orthodontic Bracket Bond Strength. K.T. KAPUS\* and A.A. LUGASSY (*University of the Pacific School of Dentistry, San Francisco, CA, USA*).

**3534**    4:15    Antibacterial Activity of Dentin Bonding Agents and Cavity Conditioners. P.R. KANDOLA, L.E. TAM\*, E.D. FILLERY, and D. McCOMB (*Faculty of Dentistry, University of Toronto, Canada*).

**3535**    4:30    Influence of Silane Concentration on the Tensile Bond Strength of Ceramic to Resin. A. KESHVAD\*, T. HOOSHMAND, and R. VAN NOORT (*Department of Restorative Dentistry, School of Clinical Dentistry, University of Sheffield, UK*).

**3536**    4:45    Bond Strength of Dual-cure Resin Luting Cements with a Laboratory Composite to Dentin and Enamel. J.D. LAFUENTE\*, A. CHAVES, and R. CARMOL (*School of Dentistry, University of Costa Rica, San José*).

**3537**    5:00    Wettability and Bonding Strength of Indirect Inlays to Enamel and Dentin. W.M. AL-OMARI\*, J.L. CUNNINGHAM, and C.A. MITCHELL (*Division of Restorative Dentistry, The Queen's University of Belfast, Northern Ireland*).

**3538**    5:15    Flexural Properties and Bond Strength of an Esthetic Post. P.T. TRIOLO\*, C. TRAJTENBERG, and J.M. POWERS (*Houston Biomaterials Research Center, University of Texas-Houston Dental Branch, USA*).

**Seq#: 355**      **Saturday, March 13, 3:30 pm - 5:30 pm**  
**Oral Session, Room A-4**

**Dental Materials - Composite Bond Strength: Composition and Polymerization Stress Effects**

**Chairpersons: P. Monaghan and W. de Rijk**

**3539**    3:30    Dentin and Enamel Shear Bond Strengths Using Fluorinated, bis-EMA Resins. P. MONAGHAN\*, A. LEE, R. SEGHI, and R. RASHID (*Ohio State University College of Dentistry, Columbus, USA*).

**3540**    3:45    CQ/Amine and Lucerin 8728 Photoinitiators: A Bond Strength Study. N. BARGHI and R. NGUYEN\* (*Department of Restorative Dentistry, University of Texas Health Science Center at San Antonio, USA*).

**3541**    4:00    Comparison of Shear and Fracture Toughness Tests for Composite-Dentin Adhesion. D. TANTBIROJN\*, Y.-S. CHENG, A. VERSLUIS, J. HODGES, and W.H. DOUGLAS (*Department of Oral Science, University of Minnesota, Minneapolis, USA*).

**3542**    4:15    Two-component Properties-complex for Interfacial Tooth-restoration Stresses. A. VERSLUIS\*, D. TANTBIROJN, and W.H. DOUGLAS (*Minnesota Dental Research Center for Biomaterials and Biomechanics, University of Minnesota, Minneapolis, USA*).

**3543**    4:30    Direction and Magnitude of the Linear Polymerization Shrinkage by Changing the Bonded Surface Area. B.I. SUH, Y. WANG, and W.G. DE RIJK\* (*BISCO Inc., Schaumburg, IL, USA*).

**3544**    4:45    Location and Magnitude of Polymerization Shrinkage-induced Stress in Composites, by the Finite Element Method. R.L. THOMAS\*, W.G. DE RIJK, and B.I. SUH (*University of Illinois at Chicago College of Dentistry; and BISCO Inc., Schaumburg, IL, USA*).

**3545**    5:00    The Influence of Soft-start Polymerization on Margin Integrity of Class V Fillings. U. FROMMATOR\*, C.-P. ERNST, and B. WILLERSHAUSEN (*Department of Restorative Dentistry, Johannes Gutenberg University, Mainz, Germany*).

**3546**    5:15    3D FEM Model to Study Stress Distribution in Adhesive Restorations. P. AUSIELLO\*, A. APICELLA, S. RADDI, S. RENGO, and C.L. DAVIDSON (*University of Naples, Italy; and ACTA, Amsterdam, The Netherlands*).

**Seq#: 356**      **Saturday, March 13, 3:30 pm - 5:30 pm**  
**Oral Session, Room A-3**

**Dental Materials - Composite Properties – Experimental Formulations**

**Chairpersons: R. Sakaguchi and R. Seghi**

**3547** 3:30 Effect of Silane Coupling Agent and Filler on Composite Durability. H. TAKAHASHI\*, J.M. ANTONUCCI, and J.W. STANSBURY (*Tokyo Medical and Dental University, Japan; and NIST, Gaithersburg, MD, USA*).

**3548** 3:45 Effect of a Homogeneous Radiopaque Agent on Cure of Restorative Resins. B.T. FARRELL\*, Y.J. PARK, and H.R. RAWLS (*University of Texas Health Science Center, San Antonio, USA; and Chonnam National University, Republic of Korea*).

**3549** 4:00 Flexural Strength Degradation Resistance of Experimental Composite Resins. S. VILLARROEL, S. UPPITURI, J. YANICH, and R. SEGHI\* (*College of Dentistry, Ohio State University, Columbus, USA*).

**3550** 4:15 Polymer-pre-impregnated E-glass Fiber Reinforcement for Methacrylate Polymers. P.K. VALLITTU\* (*Institute of Dentistry and Biomaterials Project, University of Turku, Finland*).

**3551** 4:30 A Transplant Radiopaque Nanoparticle Filler for Restorative Resins. H.R. RAWLS\*, H. DIXON, Y.J. PARK, D. NICOLELLA, and S.T. WELLINGHOFF (*University of Texas Health Science Center, San Antonio; and Southwest Research Institute, San Antonio, TX, USA*).

**3552** 4:45 Single-crystalline Ceramic Whisker Reinforced Carboxylic Acid-resin Composites with Fluoride Release. H.H.K. XU, G.E. SCHUMACHER\*, F.C. EICHMILLER, J.M. ANTONUCCI, G.M. FLAIM, and A.A. GIUSEPPETTI (*American Dental Association Health Foundation-Paffenbarger Research Center, National Institute of Standards and Technology, Gaithersburg, MD, USA*).

**3553** 5:00 Effect of Particle Interface Mechanics on Elastic Modulus of Composites. R.L. SAKAGUCHI\* and J.L. FERRACANE (*Oregon Health Sciences University, Portland, USA*).

5:15 Discussion

**Seq#: 357**      **Saturday, March 13, 3:30 pm - 5:30 pm**  
**Oral Session, Room A-2**

**Dental Materials - Cavity Preparation, Impression Materials**

**Chairpersons: A. Lugassy and J. Vickery**

**3554** 3:30 Effects of Sonoabrasive vs. Rotary Cavity Preparation. M.J. WICHT\*, U.B. FRITZ, R. HAAK, and M.J. NOACK (*Department of Operative Dentistry and Periodontology, University of Cologne, Germany*).

**3555** 3:45 The Cutting Efficiency of Air Abrasion on Tooth Enamel, Glass, and Lucite. N. DAYANI\* and M.S. WOLFF (*Department of General Dentistry, State University of New York at Stony Brook, USA*).

**3556** 4:00 An Improved Method for the Anatomical Design of CAD/CAM Inlays. P. SCHEUFELE\*, K.-H. KUNZELMANN, and R. HICKEL (*Department of Operative Dentistry, Ludwig-Maximilians-University of Munich, Germany*).

**3557** 4:15 Occlusal Clearance Assessment of Crown Preparations Using Three Techniques. A.A. LUGASSY\*

(*University of the Pacific School of Dentistry, San Francisco, CA, USA*).

**3558** 4:30 Effect of Filler on the Strength of Hydrosilanized Silicones. D.M. MARTIN\*, S. PARKER, P.D. RIGGS, and M. BRADEN (*Biomaterials in Relation to Dentistry, IRC in Biomedical Materials, QMW, University of London, UK*).

**3559** 4:45 X-ray Diffraction and SEM Studies of Elastomeric Impression Materials. J.M. VICKERY\*, J.C. MITCHELL, and W.A. BRANTLEY (*Ohio State University, Columbus, USA*).

5:00 Discussion

**Seq#: 358**      **Saturday, March 13, 3:30 pm - 5:30 pm**  
**Oral Session, Room 15**

**Experimental Pathology - Wound Healing, Apoptosis, and Oral Mucosa**

**Chairpersons: D. Messadi and M. Thornhill**

**3560** 3:30 Mercury Increases ICAM-1 Expression and T Cell Binding by Oral Keratinocytes. M.C. LITTLE, C.E.M. GRIFFITHS, M. PEMBERTON, and M.H. THORNHILL\* (*Unit of Oral Medicine and Department of Dermatology, University of Manchester, UK*).

**3561** 3:45 Corticotrophin Stimulates Keratinocyte Proliferation via Cyclic AMP. P. FARTHING\*, E. HAGI-PAVLI, D. BROWN, and S. KAPAS (*Oral Pathology, Saint Bartholomew's and Royal London School of Medicine and Dentistry, UK*).

**3562** 4:00 Epidermal Cytokine Gene Expression during Early Wound Healing in Mice. A.M. MERCADO\*, P.T. MARUCHA, D.A. PADGETT, and J.F. SHERIDAN (*Departments of Oral Biology and Periodontology, Ohio State University, Columbus, USA*).

**3563** 4:15 Delayed Wound Healing and Altered MMP Expression in the Skin of Ovariectomized (OVX) Rats is Normalized by Chemically Modified Tetracycline-8 (CMT-8). A. KUCINE\*, S. McCLAIN, E. PIRILÄ, P. MAISI, T. SALO, T. SORSA, L.M. GOLUB, and N.S. RAMAMURTHY (*SUNY at Stony Brook, NY, USA; and University of Helsinki and University of Oulu, Finland*).

**3564** 4:30 Mechanism Mediating Cryptic Motogenic Activity of Fibronectin's Gelatin-binding Domain. S.L. SCHOR\*, I.R. ELLIS, and A.M. SCHOR (*Oral Diseases Group, The Dental School, University of Dundee, Scotland*).

**3565** 4:45 Trefoil Factors Produced by Human Salivary Glands. A. HIGH\*, D. DEVINE, P. OWEN, and W. BONASS (*Leeds Dental Institute, UK*).

**3566** 5:00 NF- $\kappa$ B Activation in Keloid Fibroblasts. D.V. MESSADI\*, A. JEWETT, A.D. LE, S. BERG, Z. WEN, L. ROSENGREN, and C.N. BERTOLAMI (*University of California, Los Angeles and San Francisco Schools of Dentistry, CA, USA*).

**3567** 5:15 TNF-mediated Apoptosis in OSCC by Inhibiting NF- $\kappa$ B. C.-Y. WANG\* (*Department of Endodontics, School of Dentistry, University of North Carolina, Chapel Hill, USA*).

**Seq#: 359**      **Saturday, March 13, 3:30 pm - 5:30 pm**  
**Poster Discussion Session, Room 14**

**Experimental Pathology - Bony Changes and Disease**

**Chairpersons: S.B. Tarquinio and C.-F. Hildebolt**

3:30 Poster Viewing Time

**3568** 4:00 Oral and Post-cranial Bone Gain in Postmenopausal Women: 2-year Recall. C.F. HILDEBOLT\*, T.K. PILGRAM, N. YOKOYAMA, M. DOTSON, J. MUCKERMAN, J. HAUSER, S. COHEN, E. KARDARIS, M. VANNIER, R. CIVITELLI, J. HANES, and M. SHROUT (*Washington University, St. Louis, MO; and Medical College of Georgia, Augusta, USA*).

**3569** 4:08 Tenascin Expression in OKCs as an Aid in Histopathological Diagnosis. M. CHELURY\* and J. BURKES (*University of North Carolina, Chapel Hill, USA*).

**3570** 4:16 OPN Isoforms Promote Selective Adhesion of Bone and Prostate Cancer Cells. D.C. MALLORY\*, J. KIEFFER, J. SAFRAN, W.T. BUTLER, and M.C. FARACH-CARSON (*University of Texas Dental Branch, Houston; and University of Delaware, Newark, USA*).

**3571** 4:24 Proliferative Markers in Two Fibro-osseous Lesions. S.B.C. TARQUINIO\*, A.L.L. COSTA, M.G. DOMINGUES, and V.C. ARAÚJO (*Oral Pathology Department, University of São Paulo, Brazil*).

**3572** 4:32 Effects of Chemically-modified Doxycycline and Bisphosphonate Administration on Bone Loss in Osteoporotic Rats. A. ISHIHARA\*, T. SASAKI, K. DEBARI, R. FURUYA, T. KAWAWA, A. LLAVANERAS, H.M. LEE, N.S. RAMAMURTHY, T.F. McNAMARA, and L.M. GOLUB (*Showa University Dental School, Tokyo, Japan; State University of New York, Stony Brook, USA; and University of Central Venezuela*).

**3573** 4:40 Effects of Diabetes on Rat Skull and Mandible Growth. M.J. GIGLIO, M.A. LAMA\*, and A. FRID (*Department of Pathology and Clinic I, Faculty of Dentistry, University of Buenos Aires, Argentina*).

**3574** 4:48 The Effects of Cyclosporin A on the Alveolar Bone in Rats. S. PREMARAJ\*, H. TANAKA, S. KONISHI, K. KUBO, H. MAEDA, S. GOTO, and Y. KAMEYAMA (*School of Dentistry and Research Institute of Advanced Oral Science, Aichi-Gakuin University, Nagoya, Japan*).

**3575** 4:56 Immunohistochemical Analysis of Functional Activation of Human Enamel and Dentin-stimulated Macrophages. V.S. LARA\*, F. FIGUEIREDO, and F.Q. CUNHA (*Department of Pathology, FOB—University of São Paulo; and Department of Pharmacology, FMRP—University of São Paulo, Brazil*).

5:04 Poster Discussion Time

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**Seq#: 360** **Saturday, March 13, 3:30 pm - 5:30 pm**  
**Oral Session, Room 12**

**Geriatric Oral Research - Aging and Saliva, Oral Health and General Health in Old Age**

**Chairpersons: J. Meurman and E. Ghezzi**

**3576** 3:30 Effect of Glycopyrrolate on Salivary Gland Function in Healthy Young and Older Adults. E.M. GHEZZI\*, M.P. BEYRAMIAN, C.C. COTCA, P.S. DIXIT, M.L. GOODSON, S.C.S. PAI, E.M. ROSIER, K. SHIMOYAMA, and J.A. SHIP (*University of Michigan, Ann Arbor, USA; University of Newcastle, UK; and Tokyo Medical and Dental University, Japan*).

**3577** 3:45 One-year Results of Parotid-sparing Radiotherapy on Salivary Output and Xerostomia. J.A. SHIP\*, B.S. HENSON, and A. EISBRUCH (*School of Dentistry and*

*Department of Radiation Oncology, University of Michigan, Ann Arbor, USA*).

**3578** 4:00 Saliva in Coronary By-pass Surgery Patients and Controls. J.H. MEURMAN\*, M. QVARNSTRÖM, S. REHNBERG, and P. NUUTINEN (*Institute of Dentistry, University of Helsinki; and Kuopio University Hospital, Finland*).

**3579** 4:15 Periodontal Pathogens and Coronary Heart Disease in United States Veterans. G.W. TAYLOR\*, D.E. LOPATIN, W.J. LOESCHE, M. TERPENNING, N. VAN POPERIN, J. YU, W. BAO, J. STOLL, and L. DOMINGUEZ (*University of Michigan, Ann Arbor, USA*).

**3580** 4:30 Periodontal Pathogens and Congestive Heart Failure in United States Veterans. D.E. LOPATIN\*, G.W. TAYLOR, W.J. LOESCHE, M. TERPENNING, N. VAN POPERIN, W. BAO, J. YU, J. STOLL, and L. DOMINGUEZ (*University of Michigan, Ann Arbor, USA*).

**3581** 4:45 Mortality Following Periodontal Attachment Loss. J.R. ELTER\*, J.D. BECK, and S. OFFENBACHER (*University of North Carolina Center for Oral and Systemic Diseases, Chapel Hill, USA*).

**3582** 5:00 Root Caries Incidence as a Risk Predictor for Mortality. S.M. MAURIELLO\*, J.D. BECK, and J.R. ELTER (*University of North Carolina, Chapel Hill, USA*).

**3583** 5:15 Risk Factors for Functional Dependence among Nursing Home Dental Patients. R. HANSEN\*, M. STRAYER, and F.M. BECK (*Ohio State University, Columbus, USA*).

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**Seq#: 361** **Saturday, March 13, 3:30 pm - 5:30 pm**  
**Oral Session, Room A-1**

**Microbiology/Immunology - Monocytes and Macrophages/ Cytokines and Cytokine Receptors**

**Chairpersons: J. Katancik and M. Bickel**

**3584** 3:30 Point Mutagenesis Studies of the Human Neutrophil CXC Chemokine Receptor-2. J.A. KATANCIK\*, A. SHARMA, and E. De NARDIN (*State University of New York at Buffalo, USA*).

**3585** 3:45 Relationship of Gingival Inflammation and Bleeding to Gingival Epithelium Cytokine Concentrations. A.R. BIESBROCK\*, M.A. PERKINS, S.K. FIEDLER, and C.H. YEH (*Procter & Gamble, Cincinnati, OH, USA*).

**3586** 4:00 Effect of Phenytol on Macrophage Phenotype *in vitro*. S. NARES\*, B. PARK, C. DeLEON, and A.M. IACOPINO (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**3587** 4:15 Effect of Culture Surface on Monocyte to Macrophage Differentiation/Maturation. B. PARK\*, S. NARES, C. DeLEON, and A.M. IACOPINO (*Baylor College of Dentistry, Texas A&M University System, Dallas, USA*).

**3588** 4:30 Soluble IL-6 Receptors as Agonists on Human Dermal Fibroblasts. B. SPÖRRI, K.M. MÜLLER, U.N. WIESMANN, and M. BICKEL\* (*Laboratories of Oral Cell Biology and of Metabolic Diseases, University of Bern, Switzerland*).

**3589** 4:45 Doxycycline Alters Production of TNF-alpha. J. JANDINSKI, X. SHEN, E. MILLWARD\*, A. LEE, and R. CHEN (*UMDNJ, Newark, NJ, USA*).

**3590** 5:00 Mature Dermal Dendritic Cells Predominate in the Connective Tissue of the Diseased Periodontium. R. JOTWANI\*, D. BELL, J. BANCHEREAU, and C.W. CUTLER

(Baylor College of Dentistry, TAMUS, and Baylor Institute for Immunology Research, Dallas, TX, USA).

5:15 Discussion

**Seq#: 362** **Saturday, March 13, 3:30 pm - 5:30 pm**  
**Oral Session, Room 17**

**Neuroscience/TMJ - Muscle Pain: Fatigue, Gender, and Other Factors**

**Chairpersons: C. Widmer and K. Tsuga**

**3591** 3:30 Evaluation of Masticatory Muscle Fatigue by Electromyographic and Hemodynamic Changes. Y. TSUKIYAMA\*, S. AIZAWA, K. KOYANO, and G.T. CLARK (Removable Prosthodontics, Kyushu University, Japan; and Orofacial Pain and Oral Medicine, UCLA School of Dentistry, Los Angeles, CA, USA).

**3592** 3:45 Masseter Blood Flow and Fatigue during Human Masseter Contractions. B. WENNEBERG\*, D. STRÖM, and M. KÖNÖNEN (Department of Stomatognathic Physiology, Faculty of Odontology, Göteborg, Sweden; and Department of Prosthetic Dentistry, Royal Dental College, Aarhus, Denmark).

**3593** 4:00 Simulation of Delayed-onset Pain in Human Masticatory Muscles. J. YAMAUCHI, K. TSUGA\*, H. OKANE, Y. SATO, and Y. AKAGAWA (Department of Removable Prosthodontics, Hiroshima University, Japan).

**3594** 4:15 Extracorporeal Shock Waves for Pain Therapy of the Masticatory Muscles. M. KRAUS\* and J.F. REUTHER (Bayerische Julius-Maximilians-University, Würzburg, Germany).

**3595** 4:30 Sex Differences Exist for Central Sensitization in the Human Trigeminal System. A.M. MOOPEN and C.G. WIDMER\* (Department of Oral and Maxillofacial Surgery and Diagnostic Sciences, University of Florida, Gainesville, USA).

**3596** 4:45 Pressure-Pain Thresholds during Menstrual Cycle in Myofascial Pain Patients. H. ISSELEE\*, A. DE LAAT, K. BOGAERTS, B. DE MOT, and R. LYSSENS (Catholic University of Leuven and St. Jan Hospital Bruges, Belgium).

**3597** 5:00 Psychological Factors Distinguishing Neuropathic and Myofascial Pain Patients. J. STUDTS\* and C.R. CARLSON (Orofacial Pain Center and Department of Psychology, University of Kentucky, Lexington, USA).

5:15 Discussion

**Seq#: 363** **Saturday, March 13, 3:30 pm - 5:30 pm**  
**Oral Session, Room 1**

**Periodontal Research – Diagnosis/Epidemiology - Genetic and Host Markers for Periodontal Diseases**

**Chairpersons: N. Lang and T. Van Dyke**

**3598** 3:30 IL-1 Genotype and Bleeding on Probing in Periodontal Patients during Supportive Therapy. N.P. LANG\* and M.S. TONETTI (School of Dental Medicine, University of Bern, Switzerland).

**3599** 3:45 Linkage Disequilibrium of IL-1b Genotype in African American LJP Patients. T.E. VAN DYKE\*, S. WALKER, K. KORNMAN, F. diGIOVINE, S. RICH, and T. HART (Boston University School of Dental Medicine, MA; Medical Science Systems; and Wake Forest University School of Medicine, USA).

**3600** 4:00 Microbiological Parameters Associated with IL-1 Gene Polymorphisms in Periodontitis Patients. S.S.

SOCRANSKY\*, A.D. HAFFAJEE, and C. SMITH (Forsyth Dental Center, Boston, MA, USA).

**3601** 4:15 Sequence Analysis of the Interleukin-8 (IL-8) Receptor in Localized Juvenile Periodontitis. M.R. GWINN, S.N. LEWINS\*, A. SHARMA, and E. De NARDIN (Department of Oral Biology, State University of New York at Buffalo, USA).

**3602** 4:30 Restriction Fragment Length Polymorphisms in the Promoter Region of b-fibrinogen Gene in Adult Periodontitis Patients and Healthy Subjects. S.E. SAHINGUR\*, M.R. GWINN, A. SHARMA, and E. De NARDIN (Department of Oral Biology, State University of New York at Buffalo, USA).

**3603** 4:45 Differential GCF Host Responses in Chronic Adult and Destructive Periodontal Disease. R. BUCHMANN\*, A. HASILIK, A. HEINECKE, and D.E. LANGE (Universities of Münster and Marburg, Germany).

**3604** 5:00 Relationship between Crevicular Aspartate Aminotransferase Levels and Periodontal Disease Progression. R.J. ORINGER\*, J.P. FIORELLINI, M.L. NEVINS, D.S. REASNER, G. DAVIS, J. SEKLER, and T.H. HOWELL (SUNY at Stony Brook, NY; and Harvard School of Dental Medicine, Boston, MA, USA).

**3605** 5:15 A Cross-sectional Analysis of Aspartate Aminotransferase Levels in Periodontal Patients. H. WATANABE\*, K. NOGUCHI, I. ISHIKAWA, A. OSANAI, Y. NUMABE, K. KAMOI, Y. MATSUYAMA, Y. OHASI, and A. MISHIMA (Tokyo Medical and Dental University, The Nippon Dental University, University of Tokyo, and Shofu, Inc., Japan).

## Author/Co-author Index

Program Number in bold is presenter, and asterisk indicates AADR Hatton Award competitors.

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