

CURRICULUM VITAE (as of December 2017)

PERSONAL DATA

Name: Marshal Shlafer
Born: May 18, 1947, Stamford, Connecticut
Current Address: 15940 Lavenham Road, Huntersville NC 28078

EDUCATION

Undergraduate: University of Connecticut, 1965 - 1969, B.A. (Zoology)
Graduate: Medical College of Georgia, 1969-1974, Ph.D. (Pharmacology)

POSTDOCTORAL TRAINING

Department of Pharmacology, University of Miami School of Medicine, Miami (Roger F. Palmer, M.D., Chair of the department, supervisor), 1974-1977

ACADEMIC APPOINTMENTS

Instructor, Department of Pharmacology, University of Miami School of Medicine, Miami, Florida, 1976 - 1977

Research Assistant Professor, University of Miami School of Medicine, Miami, Florida, 1977

Assistant Professor, Department of Pharmacology, University of Michigan Medical School, 1977 - 1983

Associate Professor with tenure, Department of Pharmacology, University of Michigan Medical School, 1983 - 1990

Associate Professor of Pharmacology, Department of Surgery, Section of Thoracic Surgery, University of Michigan Medical School, 1985 - 1990

Professor, Department of Pharmacology, University of Michigan Medical School, 1990 - 31 December 2016

Professor. Department of Pharmacology, Department of Surgery, Section of Thoracic Surgery, University of Michigan Medical School, 1990 - 1992

Associate Dean for Student Programs, University of Michigan Medical School, 1992 – 1997

Professor Emeritus, University of Michigan Medical School, 1 January 2017-

CONSULTING POSITIONS (recurrent or ad hoc)

Ad hoc reviewer, pharmacology content area, USMLE Step 1 exam, National Board of Medical Examiners, Philadelphia, PA, 2013

Consultant and/or author for medical and nursing pharmacology book publishers: McGraw-Hill Medical; Little, Brown; Elsevier/Saunders; Lippincott; Mosby

External reviewer, Creighton University School of Medicine, November 2002 (departments of pharmacology, biomedical sciences, and neurology)

Ad hoc consultant/expert witness for medical malpractice/negligence cases involving medication errors or adverse drug effects (including testimony at trial)

Editorial reviewer, Mosby's Dental Drug Reference, 2008 – present

SCIENTIFIC ACTIVITIES

American Heart Association of Michigan

Member, Research Fellowship Committee, 1978-1983

Chairman, Research Fellowship Committee, 1981-1983

Member, Research Peer-Review Committee, 1979-1983

Member, Research Executive Committee, 1981-1984

Member, Research Council, 1981-1984

Chairman, Research Public Relations Committee, 1984 -1985

Member, Research Committee, 1995-1996

NIH ad hoc member, NHLBI program project grant site visit team, 1984

NIH-NHLBI Physician Scientist Award Study Section, 1985

NIH-NHLBI reviewer, Cardiovascular-Renal Study Section (CV "B"), 1986, 1987

Kidney Foundation of Canada, Reviewer, 1987

PREVIOUS GRANTS

National Institutes of Health, Health Careers Opportunity Program (Post-Baccalaureate Premedical Fellowship Program), PI, 1995-1997 (provided stipend, postbaccalaureate/premed curriculum, for underrepresented minority students matriculating in the University of Michigan Medical School, \$650,000

Josiah Macy Foundation, Minorities in Medicine, Co-PI with Dr. Linda Gillum, 1995-1997 (outreach/recruitment activities for high school and college minority students in Detroit, MI, area), \$500,000

DuPont Critical Care, "Evaluation of HESPERAN-Deferoxamine to Reduce Myocardial Damage in Closed-chest Conscious Dogs, 1/1/88 - 12/31/90 for \$23,982, (M. Shlafer, PI)

University of Michigan, Office of the VP for Research, "ATP Turnover in Patients Undergoing Aortic Surgery," \$14,000 for 4/1/87 - 3/31/88 (G. B. Zelenock, PI, M. Shlafer, coinvestigator)

American Heart Association of Michigan, Research Grant, "Heart Ischemia: Altered Chemomechanical Coupling," \$19,600 for 8/15/88 - 9/30/89 (M. Shlafer, PI)

- American Heart Association of Michigan, Research Grant, "Protection of the Neonatal Heart During Ischemia," \$18,623 for 7/1/86 - 6/30/87 (E. Bove, PI, M. Shlafer, coinvestigator)
- American Heart Association of Michigan, Research Grant, "Mechanism of Purine Degradation in Ischemia," \$20,000 for 7/1/86 - 6/30/87 (C.M. Grum, PI, M. Shlafer, coinvestigator)
- American Heart Association of Michigan, Research Grant, "Heart Preservation: Nuclear Magnetic Resonance-Function Studies," \$35,104 for 7/1/86 - 6/30/88 (M. Shlafer, PI)
- National Institutes of Health, HLBI, RO-1 (HL-29499): "Heart Ischemic Damage, Modulating Oxygen Metabolites," 7/1/82 - 9/29/94 (includes funded competing renewal), \$908,716 total direct costs. (M. Shlafer, PI)
- American Heart Association of Michigan, Research Grant, "Ischemia: Mitochondria, SR, and Oxygen Radicals," \$17,281 for 7/1/84 - 6/30/85 (M. Shlafer, PI)
- American Heart Association of Michigan, Research Grant, "Role of Oxygen Free Radicals in Extremity Ischemia," \$16,614 for 7/1/84 - 6/30/85, G. B. Zelenock, PI, M. Shlafer, co-investigator)
- NIH-HLBI, "Pharmacologic Studies on the Ischemic Heart," \$485,886 for 4/1/82 - 3/30/85 (B. Lucchesi, PI, M. Shlafer co-investigator, 15% effort)
- Michigan Heart Association, Research Grant, "Ischemia-Induced Cardiac Membrane Alterations," \$31,908 for 7/1/81 - 6/30/83 (M. Shlafer, PI)
- Michigan Heart Association, Research Grant, "Metabolism and Ion Movements in Ischemic Heart," 7/1/79 - 6/30/81 for \$29,797 (M. Shlafer, PI)
- National Science Foundation, Adenylate Cyclase Activator: Role in Neuropharmacology, 1978-1981 (M. E. Gnegy, PI, M. Shlafer co-investigator, 15% effort)
- Michigan Heart Association, Research Grant, "Myocardial Effects of a Sodium-transporting ionophore," \$12,000 for 7/1/78 - 6/30/79 (M. Shlafer, PI)
- National Science Foundation, "Multiuser Scintillation Counter Request," \$25,970, M. Shlafer, co-PI, 1978
- University of Michigan, Rackham School of Graduate Studies, "Alterations of Cardiac Metabolism During and After Ischemia," M. Shlafer, PI, \$7,034 for 1/1/78 - 12/30/78

REVIEWER FOR MEDICAL BOOKS AND JOURNALS (various years)

American Journal of Physiology (Heart & Circulatory Physiology)
 Basic Research in Cardiology
 Biochemical Pharmacology
 Biochimica et Biophysica Acta
 Cardiovascular Research
 Circulation

Circulation Research
 Cryobiology, the International Journal of Low Temperature Biology and
 Medicine
 Journal of Molecular and Cellular Cardiology
 Journal of Pharmacology and Experimental Therapeutics
 Life Sciences
 Mosby's Dental Drug Reference, 8th Edition (2008) and 9th Edition (2012),
 monograph contributor and editorial reviewer
 The Medical Letter
 Proceedings of the Society for Experimental Biology and Medicine
 Science

HONORS AND AWARDS

Postdoctoral Fellow of the American Heart Association, Florida Affiliate, in the
 Department of Pharmacology, University of Miami School of Medicine, Miami,
 Florida, 1975 - 1977

Recipient, Excellence in Teaching Award for preclinical faculty, presented April 1988 by
 U of M Medical School Class of 1990; April 1989 by Class of 1991; April 1990
 by Class of 1992, April 1991 by Class of 1992

Recipient, Kaiser Permanente Teaching Excellence Award (Preclinical Sciences), 1990
 (top teaching award given by the University of Michigan Medical School, faculty
 member can receive award only once)

Honorable Mention, American Medical Writers Association AMWA Medical Book
 Awards Competition, Allied Health Category, for *The Nurse, Pharmacology, and
 Drug Therapy*, M. Shlafer, editor and primary author, 1990.

Recipient, Elizabeth Crosby Award for outstanding teaching in the basic sciences,
 University of Michigan Medical School, 1991 (top teaching award given by
 Galen's [student] Medical Society, University of Michigan Medical School;
 faculty can receive this award only once)

Honorary Faculty Member, Galen's (Student) Medical Society, University of Michigan
 Medical School, 1991 – 1997; 1999-2001

Prefect (head faculty leader), Galen's Medical Society, University of Michigan Medical
 School, 1992-1993

Outstanding M2 Teacher Award (presented by medical school classes, 1995-2009)

Endowment for the Basic Sciences Teaching Award (Pharmacology), 2009

Instructor of the Year Award, presented by the Dental School Class of 2013, University
 of Michigan, March 2010

Chosen by U Michigan Medical School Class of 2016 graduating class to have photo
 included on class composite photo (one of only 18 faculty so chosen)

MEMBERSHIPS IN PROFESSIONAL SOCIETIES (past or current)

American Heart Association, Basic Science Council
 American Society for Pharmacology and Experimental Therapeutics
 Federation of American Societies for Experimental Biology
 International Society for Heart Research
 Michigan Heart Association

TEACHING ACTIVITIES at the University of Michigan — 146 (average annual) hours of formal lecture during 2014-2016 academic year to various medical and other health professions student classes

Director, M1 (1st year medical students) Pharmacology course (1997-2003; course discontinued with “new curriculum” -- approx 15 hours of lecture/year; lectures still given but in other courses in M1 year

Cardiovascular Sequence (course) to 2nd year medical students (course co-director 1999 - 2012) and sole lecturer on virtually all cardiovascular drugs; includes about 14 hours of lectures per year on drugs for hypertension, dyslipidemias, heart failure, arrhythmias, angina, anticoagulants, thrombolytics, antiplatelet drugs

Lectures to M1 students in cardiovascular sequence, autonomic pharmacology; histamine and its antagonists; small group leader. Approx 14 hours per year.

Lectures to M1 students in Human Growth & Development sequence on age-related factors affecting rational drug therapy; basic mechanisms of drug-drug interactions; and magnitude, scope, basic causes and prevention of medication errors; Musculoskeletal Sequence (“fused;” new for 2015), NSAIDs

Lectures to M2 students on subjects in addition to those above: renal sequence (diuretics), respiratory sequence (asthma), neurosciences sequence (local anesthetics, general anesthetics, opioids), musculoskeletal sequence (NSAIDs, acetaminophen), acid-peptic disorders (avg. 14 hr/yr total)

Director and primary lecturer, Pharmacology 210 (undergraduate pharmacology and therapeutics for students in BSN/RN program, 1980 – 2013; LNursing, literature, Science & Arts, Kinesiology students, 2013 - 2015) -- approx. 50 hours of lecture/yr

Lectures to 1st and 2nd year dental students on all of autonomic pharmacology, cardiovascular (except anticoagulants, antiplatelet drugs), renal, respiratory pharmacology, approx. 20 hours/yr

Lectures to PharmD and Acute Care Nurse Practitioner students (Pharm 659-660, now various PharmD/medicinal chemistry courses), approx 10 hrs/yr (various topics including asthma, diabetes, antiinflammatory drugs, gout/hyperuricemia, drugs for acid-peptic disorders); ended Fall 2015

Lectures to PharmD/medicinal chemistry students on antibiotics, antiviral drugs, antifungals, antiparasitic drugs; asthma; diabetes; acid-peptic disease; NSAIDs; various and changing course numbers; approx.. 25 hours/yr; ended Fall 2015

Lectures to 2nd Degree Nursing Program prospective enrollees, others, Pharm 410 and 411, pathophysiology/pharmacology, 2013-2015, on all of cardiovascular pathophysiology and pharmacology except antiarrhythmic drugs; respiratory (asthma, allergies); renal (diuretics); GI (acid-peptic and motility disorders/drugs); rheumatology (arthritis, gout, NSAIDs) (approx. 24 hr of total lecture per year)

THESIS MENTOR (ALL AT UNIVERSITY OF MICHIGAN MEDICAL SCHOOL)

Larry R. Bush, Ph.D., 1981. (co-mentor with Dr. B. R. Lucchesi). Thesis: The Beneficial Effects of Diltiazem, a New Calcium Antagonist, during Global and Regional Myocardial Ischemia.

Paula F. Kane, M.S., 1981. Thesis: Alternatives for or Supplements to Hypothermic Cardioplegia for Intraoperative Protection of the Ischemic Heart.

Christina L. Myers, Ph.D., 1985. Thesis: Involvement of Intrinsically Generated Reactive Oxygen Species in Reoxygenation- and Reperfusion-Mediated Cardiac Damage.

John R. Forder, Ph.D., 1990. Thesis: Myocardial Energetics and the Recovery of Contractile Function Following Ischemia and Reperfusion in the Isolated Perfused Rabbit Heart.

Christopher P. Mack, Ph.D., 1995. Thesis: Oxidative Injury in the Reperfused Rabbit Heart and the Protective Effects of Flavin Reductase Substrates.

Other Thesis Committees

Walter Mark Vogel, Ph.D., 1979. Effects of Methylprednisolone and Dimethylpropranolol on Myocardial Viability during Ischemia. Department of Pharmacology, University of Michigan Medical School

Eugene Patterson, Ph.D., 1981. Antiarrhythmic and Antifibrillatory Actions of Bretylium Tosylate. Department of Pharmacology, University of Michigan Medical School

Joseph L. Romson, Ph.D., 1982. Cardioprotective Effects of Ibuprofen in Experimental Models of Ischemic Heart Disease. Department of Pharmacology, University of Michigan Medical School

Brian T. Eller, M.S., 1982. Lack of Electrophysiologic or Antithrombotic Actions of Sulfapyrazone. Department of Pharmacology, University of Michigan Medical School

Pilarp Sinhasheni, Ph.D., 1983. Toxic effects of hexachlorocyclopentadiene on rainbow trout (*S. gairdneri*). School of Public Health, University of Michigan

David Combs, Ph.D., 1985. Preservation of Function after Cerebral Ischemia using Fasting and 1,3 Butanediol. Department of Physiology (and

Pharmacological Sciences Training Program), University of Michigan Medical School

Christian Harker, Ph.D., 1985. Temperature Effects on the 13-Lined Ground Squirrel (*C. tridecemlineatus*), Department of Physiology, University of Michigan Medical School

Edward Lundy, M.D., Ph.D., 1985. Butanediol-Induced Cerebral Protection in the Levine Rat. Department of Physiology, University of Michigan Medical School

Stephanie Mitsos, Ph.D., 1985. Myocardial Reperfusion Injury: Protection by a Free Radical Scavenger, Mercaptopropionyl Glycine. Department of Pharmacology, University of Michigan Medical School

Ronald Weishaar, Ph.D., 1987. The Involvement of Vitamin D3 in Regulating Cardiovascular Function. Department of Pharmacology, University of Michigan Medical School

Jo Anne Natale, Ph.D., 1988. Neurologic Dysfunction and Mortality Following Cardiac Arrest-Induced Cerebral Ischemia: The Role of Lactate Accumulation. Department of Physiology, University of Michigan Medical School

Laura DeForge, Ph.D. 1989. Radioiodinated Cholesteryl Ester Analogs as Residualizing Tracers of Lipoprotein Disposition. Department of Pharmacology, University of Michigan Medical School

Brad Martin, Ph.D. 1994. Department of Physiology, University of Michigan Medical School

Jonathan Homeister, Ph.D., 1994, Department of Pharmacology, University of Michigan Medical School

Ken Kilgore, Ph.D., 1995, Department of Pharmacology, University of Michigan Medical School

Jennifer Vuletich, Ph.D., 2000, Department of Pharmacology, University of Michigan Medical School

Ryan Brandt, DDS. M.S. degree in endodontics, University of Michigan Dental School, 2008-2010

Brandon Rogers, DDS. M.S. degree in endodontics, University of Michigan Dental School, 2010-2013

Michael Shapiro, DDS. M.S. degree in endodontics, M.S. degree conferred May 2016

COMMITTEE AND ADMINISTRATIVE SERVICES

Departmental

Member, Educational Programs Committee, Department of Pharmacology, University of Michigan Medical School, 1978 - 1981 and 1982 - 1986

Member, Pharmacological Sciences Training Grant Committee, Department of Pharmacology, 1982 - 1990

Member, Advisory Committee, Department of Pharmacology, June 1990 – 1991; 1999-2002

Member, Appointments and Promotions Committee, 1999 — 2013

Medical School

Departmental Representative and Member, Committee on Medical Student Research, University of Michigan Medical School, 1983 - 1992.

Member, Kaiser Permanente Teaching Award selection committee, University of Michigan Medical School, 1983, 1984, 1992

Chair, Awards Committee, Medical School (Kaiser Permanente Teaching Awards, other teaching awards), University of Michigan Medical School, 1992 - 1997

Member, Basic Sciences/Clinical Integration Task Force for new curriculum, 1991-1992

Director, Component I (Year 1) of medical school curriculum, 1992 (ended upon appointment as medical school Associate Dean)

Associate Dean for Student Programs, October 1992 – December 1997

Chair, Basic Science Academic Review Board, 1996 – 1998

Chair, Clinical Academic Review Board, 1996 – 1998

Member, Inteflex Academic Review Board, 1999 - 2001

Elected Member, Basic Science Academic Review Board, August 1999 – 2002

Elected Member, Medical School Curriculum Policy Committee, 2002 - 2005

Member, Medical School Component I (M1) Committee (1998-2012) and Component II (M2) Committee (1999-2012)

University

Member (appointed), Graduate Academic Integrity Committee, Horace H. Rackham School of Graduate Studies, The University of Michigan, and co-author of published guidelines, 1989 - 1990

Member (appointed), Governing Board, The International Institute, University of Michigan, 1994 - 1996

Member (appointed), University of Michigan Judicial Board, 1994 - 1996

Member (invited), Internal Advisory Committee for the (NIH) Tissue Engineering and Regeneration Training Grant, School of Dentistry, University of Michigan (2001-2006)

Member (appointed), Medical Affairs Advisory Committee of the University of Michigan Faculty Senate, Sept 2008 – August 2011

COMMUNITY SERVICE

Firefighter/emergency first responder (paid volunteer), Superior Township (MI), 1983-1993

State of Michigan Certified Phase I firefighter, State of Michigan, effective 1985

Licensed Emergency Medical First Responder, State of Michigan, effective 1991

Judge, Michigan Society for Medical Research annual student essay contest (1999-2009)

Owner/manager of registered on-line weather station KMIANNAR29

SKYWARN (weather) spotter, #8113-243, Washtenaw County Sheriff Department/Office of Emergency Preparedness and National Weather Service, effective 2011, and operating as licensed radio amateur (K8AAM; general class license from Federal Communications Commission)

BIBLIOGRAPHY

Publications in Scientific Journals

Peer-Reviewed

1. Shlafer, M and Karow, AM, Jr: Ultrastructure-function correlative studies for cardiac cryopreservation. I. Hearts perfused with various concentrations of dimethyl sulfoxide. *Cryobiology* 1971; 8:280-289.
2. Karow, AM, Jr. and Shlafer, M: Ultrastructure-function correlative studies for cardiac cryopreservation. II. Hearts frozen to various temperatures without a cryoprotectant. *Cryobiology* 1971; 8:350-360.
3. Karow, AM, Jr. and Shlafer, M: Ultrastructural and functional effects of freezing rat hearts to -10^o and -20^oC without a cryoprotectant. *Trans. Amer. Soc. Artif. Intl. Organs* 1971; 17:53-57.
4. Karow, AM, Jr, Shlafer, M and Sims, R: Contractile and ultrastructural effects of hypothermia and of high pressure on rat hearts during ischemia. *J. Surg. Res.* 1971; 11:571-583.
5. Shlafer, M and Karow, AM, Jr: Ultrastructure-function correlative studies for cardiac cryopreservation. III. Hearts frozen to -10^o or -17^oC with and without dimethyl sulfoxide. *Cryobiology* 1972; 9:38-50.
6. Shlafer, M, Matheny, JL and Karow, AM, Jr: Cardiac inotropism of dimethyl sulphoxide: osmotic effects and interactions with calcium ion. *Europ. J. Pharmacol.* 1974; 28:276-287.
7. Matheny, JL, Weisman, C, Karow, AM, Jr and Shlafer, M: Myocardial function during hypoxia: protective effect of dimethyl sulfoxide. *Res. Commun. Chem. Pathol. Pharmacol.* 1975; 10:77-92.
8. Shlafer, M and Karow, AM, Jr: Pharmacological effects of dimethyl sulfoxide on the mammalian myocardium. *Ann. N.Y. Acad. Sci.* 1975; 243:110-121.
9. Karow, AM, Jr and Shlafer, M: Ultrastructure-function correlative studies for cardiac cryopreservation. IV. Prethaw ultrastructure of myocardium cooled slowly (<2^oC/min) or rapidly (>70^oC/sec) with and without dimethyl sulfoxide. *Cryobiology* 1975; 12:130-143.
10. Shlafer, M, Matheny, JL and Karow, AM, Jr: Cardiac chronotropic mechanisms of dimethyl sulfoxide: inhibition of acetylcholinesterase and antagonism of negative chronotropy by atropine. *Arch. Int. Pharmacodyn. Therap.* 1976; 221:21-31.
11. Shlafer, M: Drugs that modify cellular responses to low temperature (cryoprotectants): A pharmacological perspective of preserving biological systems by freezing. *Fed. Proc.* 1977; 36:2590-2594.

12. Shlafer, M, Somani, P, Pressman, BC and Palmer, RF: Effects of the carboxylic ionophore monensin on atrial contractility and Ca^{2+} regulation by isolated cardiac microsomes. *J. Mol. Cell. Cardiol.* 1978; 10:333-346.
13. Shlafer, M, Gelband, H, Sung, RJ, Palmer, RF and Bassett, AL: Time-dependent alterations of microsomal yield and calcium accumulating activity in experimentally-induced chronic right ventricular hypertrophy and failure. *J. Mol. Cell. Cardiol.* 1978; 10:395-407.
14. Warren, S, Lucchesi, BR and Shlafer, M: Effects of N-dimethyl propranolol (UM-272) on isolated cardiac mitochondria and microsomes. *Res. Commun. Chem. Pathol. Pharmacol.* 1979; 25:227-239.
15. Vogel, WM, Romson, JL, Bush, LR, Shlafer, M and Lucchesi, BR: Protective effects of dimethyl propranolol (UM-272) during global ischemia of isolated feline hearts. *J. Pharmacol. Exp. Therap.* 1980; 212:560-568.
16. Bush, LR, Shlafer, M, Haack, DW and Lucchesi, BR: Time-dependent changes in canine cardiac mitochondrial function and ultrastructure resulting from coronary occlusion and reperfusion. *Basic Res. Cardiol.* 1980; 75:555-571.
17. Shlafer, M and Kane, P: Subcellular actions and potential adverse cardiac effects of the cardiotoxic ionophore monensin. *J. Pharmacol. Exp. Therap.* 1980; 214:567-573.
18. Bush, LR, Haack, DW, Shlafer, M and Lucchesi, BR: Protective effects of beta-adrenergic blockade in isolated ischemic hearts. *Europ. J. Pharmacol.* 1980; 67:209-217.
19. Shlafer, M, Kirsh, MM, Lucchesi, BR, Slater, AD and Warren, S: Mitochondrial function after global cardiac ischemia and reperfusion: Influences of organelle isolation protocols. *Basic Res. Cardiol.* 1981; 76:250-266.
20. Haack, DW, Bush, LR, Shlafer, M and Lucchesi, BR: Lanthanum staining of coronary microvascular endothelium: Effects of ischemia- reperfusion, propranolol and atenolol. *Microvasc. Res.* 1981; 21:362- 376.
21. Bush, LR, Li, Y-P, Shlafer, M, Jolly, SR and Lucchesi, BR: Protective effects of diltiazem during myocardial ischemia in isolated cat hearts. *J. Pharmacol. Exp. Therap.* 1981; 281:653-661.
22. Shlafer, M and Kane, P: Effects of dimethylsulfoxide on the globally ischemic heart: Possible general relevance to hypothermic organ preservation. *Cryobiology* 1982; 19:61-69.
23. Shlafer, M, Kane, P and Kirsh, MM: Superoxide dismutase plus catalase enhances the efficacy of hypothermic cardioplegia to protect the globally ischemic heart. *J. Thorac. Cardiovasc. Surg.* 1982; 83:830-839.
24. Shlafer, M, Kane, PF, Wiggins, VY and Kirsh, MM: Possible role for cytotoxic oxygen metabolites in the pathogenesis of cardiac ischemic injury. *Circulation* 1982; 66:I-85 - I-92.

25. Sinhaseni, P, D'Alecy, LG, Hartung, R and Shlafer, M: Respiratory effects of hexachlorocyclopentadiene on intact rainbow trout (*S. gairdneri*) and on oxidative phosphorylation of isolated trout heart mitochondria. *Toxicol. Appl. Pharmacol.* 1983; 67:215-223.
26. Shlafer, M: Cardiac pharmacology of dimethyl sulfoxide and its postulated relevance to organ preservation in hypoxic and ischemic states. *Ann. N.Y. Acad. Sci.* 1983; 411:170-179.
27. Shlafer, M and Shepard, BM: A method to reduce interference by sucrose in the assay of thiobarbituric acid-reactive substances. *Analytical Biochem.* 1984; 137:269-276.
28. Turla, MB, Gnegy, ME, Epps, S and Shlafer, M: Loss of calmodulin activity in cardiac sarcoplasmic reticulum after ischemia. *Biochem. Biophys. Res. Commun.* 1985; 130:617-620.
29. Myers, CL, Weiss, SJ, Kirsh, MM and Shlafer, M: Involvement of hydrogen peroxide and hydroxyl radical in the "oxygen paradox": Reduction of creatine kinase leakage by catalase, allopurinol or deferoxamine, but not by superoxide dismutase. *J. Mol. Cell. Cardiol.* 1985; 17:675-684.
30. Myers, CL, Weiss, SJ, Kirsh, MM, Shepard, BM and Shlafer, M: Effects of supplementing hypothermic crystalloid cardioplegic solution with catalase, superoxide dismutase, allopurinol or deferoxamine on functional recovery of globally-ischemic and reperfused isolated hearts. *J. Thorac. Cardiovasc. Surg.* 1986; 91:281-289.
31. D'Alecy, LG, Myers, CL, Brewer, M, Rising, C and Shlafer, M: Substrate-specific stimulation by glucagon of isolated murine brain mitochondrial oxidative phosphorylation. *Stroke* 1986; 17:305-312.
32. Gallagher, KP, Buda, AJ, Pace, D, Gerren, RA and Shlafer M: Superoxide dismutase or catalase fail to alter infarct size in conscious dogs reperfused after 3 hours of regional ischemia. *Circulation* 1986; 73:1065-1076.
33. Grum, CM, Ragsdale, RA, Ketai, LH and Shlafer, M: Absence of xanthine oxidase or xanthine dehydrogenase in the rabbit myocardium. *Biochem. Biophys. Res. Commun.* 1986; 141:1104-1108.
34. Lee, KR, Cronenwett, JL, Shlafer, M, Corpron, C and Zelenock, GB: Effect of superoxide dismutase plus catalase on calcium transport in ischemic and reperfused skeletal muscle. *J. Surg. Res.* 1987; 42:24-32.
35. Grum, CM, Ketai, L, Myers, CL and Shlafer, M: Species-dependency of purine efflux patterns following isolated heart ischemia: Relationship to xanthine oxidase activity and mechanisms of allopurinol cardioprotection. *Am. J. Physiol.* 1987; 252 (Heart Circ. Physiol. 21):H368-H373.
36. Patterson, E, Shlafer, M, Walden, KM, Khazaeli MB, Montgomery, DG and Lucchesi, BR: Changes in cardiac muscle function and biochemistry produced by long-term amiodarone administration in the rabbit: Reversal by the concomitant administration of triiodothyronine. *Pharmacology* 1987; 35:130-140.

37. Gallagher, KP, Gerren, RA, Ning, X-H, McManimon, SP, Stirling, MC, Shlafer, M and Buda, AJ: The functional border zone in conscious dogs. *Circulation* 1987; 76:929-942.
38. Shlafer, M, Myers, CL and Adkins, S: Mitochondrial hydrogen peroxide generation and activities of glutathione peroxidase and superoxide dismutase following global ischemia. *J. Mol. Cell. Cardiol.* 1987; 19:1195-1206.
39. Bove, EL, Gallagher, KP, Drake, DH, Lynch, MJ, Fox, M, Forder, J, Bolling, SF and Shlafer, M: The effect of hypothermic ischemia on recovery of left ventricular function and preload reserve in the neonatal heart. *J. Thorac. Cardiovasc. Surg.* 1988; 95:814-818.
40. Grum, CM, Gallagher, KP, Kirsh, MM, and Shlafer, M: Absence of detectable xanthine oxidase in human myocardium. *J. Mol. Cell. Cardiol.* 1989; 21:263-267.
41. Buda, AJ, Shlafer, M, and Gallagher, KP: Spatial and temporal characteristics of circumferential flow-function relations during acute ischemia in the conscious dog. *Am. Heart J.* 1989; 116:1514-1523.
42. Cronenwett, JL, Lee, KR, Shlafer, M, and Zelenock, GB. The effect of ischemia-reperfusion derived oxygen free radicals on skeletal muscle calcium metabolism. *Microcirc. Endoth. Lymphatics* 1989; 5:171-187.
43. Shlafer, M, Brosamer, K, Forder, JR, Simon, RH, Ward, PA, and Grum, CM: Cerium chloride as a histochemical marker of oxidants in reperfused ischemic hearts. *J. Mol. Cell. Cardiol.* 1990; 22:83-97.
44. D'Alecy, LG, Lundy, EF, Kluger, MJ, Harker, CT, LeMay, DR, and Shlafer, M: Beta-hydroxybutyrate and response to hypoxia in the ground squirrel, *Spermophilus tridecemlineatus*. *Comp. Biochem. Physiol.* 1990; 96B:189-193.
45. Dean, EN, Shlafer, M, and Nicklas JM: The oxygen consumption paradox of 'stunned myocardium' in dogs. *Basic Res. Cardiol.* 1990; 85:120-131.
46. Shlafer, M, Gallagher, KP, and Adkins, S: Hydrogen peroxide generation by mitochondria isolated from regionally ischemic and nonischemic dog myocardium. *Basic Res. Cardiol.* 1990; 85:318-329.
47. Forder, JR, McClanahan, TB, Gallagher, KP, Hedlund, BE, Hallaway, PE, and Shlafer, M: Hemodynamic effects following administration of deferoxamine or a deferoxamine-pentastarch conjugate in conscious dogs. *J. Cardiovasc. Pharmacol.* 1990; 16:742-749.
48. Macha, M, Shlafer, M, and Kluger, MJ: Human neutrophil hydrogen peroxide generation after physical exercise. *J. Sports Med. Phys. Fit.* 1990; 30:412-419.
49. Hultquist, DE, Xu, F, Quandt, KS, Shlafer, M, Mack, CP, Till, GO, Seekamp, A, Betz, AL, Ennis, SR: Evidence that NADPH-dependent methemoglobin reductase and administered riboflavin protect tissues from oxidative injury. *Am. J. Hematol.* 1993; 42:13-18.

50. Mack, CP, Brosamer, KM, Schlafer M: Ultrastructural demonstration of peroxidative activity and attack in ischemic and ischemic-reperfused rabbit hearts. *Cardiovasc. Res.* 1993; 27:371-376.
51. Xu, F, Mack, CP, Quandt, KS, Tang, C, Schlafer, M, Massey, V, Hultquist, DE: Pyrroloquinoline quinone acts with flavin reductase to reduce ferryl myoglobin in vitro and protects isolated rabbit heart from reoxygenation injury. *Biochem. Biophys. Res. Commun.* 1993; 193(1):434-439.
52. Hultquist, DE, Mack, CP, Quandt, KS, Schlafer, M, Xu, F: Studies of the mechanism by which riboflavin and pyrroloquinoline quinone protect tissues from reoxygenation injury. In: *Oxygen '93, Proc. Oxygen Soc.*
53. Robins, LS, Fantone, JC, Oh, MS, Alexander, GL, Schlafer, M, Davis, WK: The effect of pass/fail grading and weekly quizzes on first-year students' performances and satisfaction. *Acad. Med.* 1995; 70(4):327-329.
54. Mack, CP, Hultquist, DE, Quandt, KS, Schlafer, M: Myocardial flavin reductase and flavins: a potential role in decreasing reoxygenation injury. *Biochem. Biophys. Res. Commun.* 1995; 213(1): 35-40.

Non-Peer-Reviewed

1. Schlafer, M: Functional and ultrastructural effects of dimethyl sulfoxide on nonfrozen, frozen, and frozen-thawed mammalian myocardium. Ph.D. dissertation, Medical College of Georgia, 1974, 266 pp.
2. Carrier, GO, and Schlafer, M: Obituary: Raymond P. Ahlquist. *Trends Pharmacol. Sci.* 1984; 5:1-4.

Books

- Schlafer M: *The Nurse, Pharmacology, and Drug Therapy: A Prototype Approach*. Addison-Wesley Publishing Company, Health Sciences Division, Redwood City, CA, 1989 (1st edition) and 1993 (2nd edition). (Recipient of Honorable Mention, Allied Health Category, for the 1990 American Medical Writers Association Medical Book Awards Competition)
- Schlafer M: *Instructor's Manual for The Nurse, Pharmacology, and Drug Therapy: A Prototype Approach*. Addison-Wesley Publishing Company, Health Sciences Division, Redwood City, CA, 1989 (1st edition) and 1993 (2nd edition).
- Schlafer, M. *Test Bank for The Nurse, Pharmacology, and Drug Therapy: A Prototype Approach*. Addison-Wesley Publishing Company, Health Sciences Division, Redwood City, CA, 1989 (1st edition) and 1993 (2nd edition).
- Schlafer, M. *Study Guide to Accompany Pharmacology for Nursing Care*, 5th ed., Elsevier/Saunders, (322 pgs bound, plus web-based supplement, 106 chapters). 2004.
- Schlafer, M. *PreTest—Pharmacology*, (USMLE Step 1 exam prep) 11th ed., McGraw-Hill Medical, 2005

Shlafer, M. *PreTest—Pharmacology*, (USMLE Step 1 exam prep), 12th ed., McGraw-Hill Medical, 2007

Shlafer, M. *PreTest—Pharmacology*, (USMLE Step 1 exam prep), 13th ed., McGraw-Hill Medical, 2010

Shlafer, M. *PreTest—Pharmacology*, (USMLE Step 1 exam prep), 14th ed., McGraw-Hill Medical, 2013

Chapters in Books

Shlafer, M. "Cryopreservation: Pharmacological Considerations" In: *Organ Preservation for Transplantation*, edited by AM Karow, Jr. and DE Pegg, Marcel Dekker, Inc., 2nd Edition, New York, pp. 177-212, 1981.

Shea, MJ, Forder, JR, Shlafer, M. "The Heart." In: *Clinical Ischemic Syndromes: Mechanisms and Consequences of Tissue Injury*, GB Zelenock, LG D'Alecy, JC Fantone, M Shlafer, and JC Stanley, eds. C. V. Mosby, pp. 375-409, 1989.

Shea, M.J. and Shlafer, M: Cardiovascular Drugs. In: *Practical Cardiology: Evaluation and Treatment of Common Cardiovascular Disorders*, pp. 612 - 636. KA Eagle, RR Baliga, eds., Lippincott Williams & Wilkins, 2003.

Springer, N.S. and Shlafer, M.: Medication-Nutrient Interactions. In: *Pediatric Nutrition in Chronic Diseases and Developmental Disorders*. SW Ekvall, ed., New York: Oxford University Press, 2004

Shlafer, M. *Drugs for Dyslipidemias and Prophylaxis of Coronary Heart Disease*, Chapter 49 in 7th and 8th Editions, *Pharmacology for Nursing Care*, R. A. Lehne, ed., Saunders-Elsevier, 2012

Shlafer, M: Drug-Nutrient Interactions. In: *Pediatric Nutrition in Chronic Diseases and Developmental Disorders*, 2nd Edition. SW Ekvall, ed., New York: Oxford University Press, 2011.

Shlafer, M. *Drugs for Diabetes Mellitus*, Chapter 56 in 7th and 8th Editions, *Pharmacology for Nursing Care*, R. A. Lehne, ed., Saunders-Elsevier, 2012.

Shlafer, M. and Shlafer R. J.: Drug-Nutrient Interactions. In: *Pediatric Nutrition in Chronic Diseases and Developmental Disorders*, 3rd Edition. SW Ekvall, ed., New York: Oxford University Press, 2017.

Books Edited

Zelenock, GB, D'Alecy, LG, Fantone, JC, Shlafer, M and Stanley, JC, eds. *Clinical Ischemic Syndromes: Mechanisms and Consequences of Tissue Injury*, C. V. Mosby, 1989 (682 pgs).

Shlafer M: *The Nurse, Pharmacology, and Drug Therapy: A Prototype Approach*. Addison-Wesley Publishing Company, Health Sciences Division, Redwood City, CA, Author and editor of the book; 1989 (1st edition) and 1993 (2nd edition)

Web

Contributor (to questions for United States Medical Licensure Exam, National Board of Medical Examiners, Step 1 questions), USMLEasy®, McGraw-Hill

Undergraduate Nursing Pharmacology at the University of Michigan, invited presentation at 2011 ASPET meeting symposium, Washington, DC, accessible at http://www.aspet.org/uploadedFiles/Divisions_and_Chapters/ASPET_Divisions/Pharmacology_Education/Content/3_Shlaferl.pdf

Abstracts

1. Shlafer, M and Karow, AM, Jr: Physiological and ultrastructural effects of cardiac perfusion with dimethyl sulfoxide. Fed. Proc. 1971; 30:260a.
2. Shlafer, M and Karow, AM, Jr: Ultrastructure-function of hearts frozen after perfusion with dimethyl sulfoxide. Fed. Proc. 1971; 30:376a.
3. Shlafer, M, Matheny, JL and Karow, AM, Jr: Effect of dimethyl sulfoxide on myocardial contractility and response to anoxia. Cryobiology 1973; 10:509-510.
4. Shlafer, M: Possible two-fold mechanism of dimethyl sulfoxide-induced cardiac inotropy. Fed. Proc. 1974; 33:302a.
5. Shlafer, M, Matheny, JL and Karow, AM, Jr: Inotropic and chronotropic actions of dimethyl sulfoxide on mammalian myocardium. The Pharmacologist 1974; 16:443.
6. Shlafer, M: Dimethyl sulfoxide effects on calcium uptake and release by isolated cardiac sarcoplasmic reticulum. Fed. Proc. 1975; 34:793.
7. Shlafer, M, Pressman, BC, Somani, P and Palmer, RF: Inotropic and chronotropic effects of monensin, a carboxylic ionophore, in isolated rabbit atria. Circulation 1976; 52(Suppl.):II-42.
8. Shlafer, M, McDermott, T, Palmer, RF, Pressman, BC and Somani, P: Effects of the ionophore monensin on calcium ion regulation by isolated cardiac sarcoplasmic reticulum. The Pharmacologist 1976; 18:122.
9. Shlafer, M, Gelband, H, Sung, RJ, Palmer, RF and Bassett, AL: Role of sarcoplasmic reticulum in early and late stages of chronic right ventricular hypertrophy in cats. Fed. Proc. 1977; 36:601.
10. Shlafer, M, Romson, JL and Kane, P: Potential adverse cardiac actions of the ionophore monensin. Fed. Proc. 1979; 38:694.
11. Warren, S, Kirsh, M, Lucchesi, BR, Mhyre, JG, Slater, D and Shlafer, M: Comparison of mitochondrial function and contractility of globally ischemic canine hearts. Fed. Proc. 1979; 38:694.
12. Bush LR, Vogel, WM, Warren, S, Shlafer, M and Lucchesi, BR: Prevention of ischemia-induced loss of ventricular compliance, contractility and microsomal

calcium accumulation by propranolol and its dimethyl analog. Fed. Proc. 1979; 38:530.

13. Bush, LR, Vogel, WM, Shlafer, M and Lucchesi, BR: Dimethyl propranolol prevents ischemia-induced loss of ventricular compliance and microsomal Ca-accumulation. J. Mol. Cell. Cardiol. 1979; 11(Suppl.):12.
14. Bush, LR, Haack, DW, Shlafer, M and Lucchesi, BR: Prevention by propranolol or atenolol of ischemia-induced ultrastructural damage in isolated blood-perfused hearts. Fed. Proc. 1980; 39:531.
15. Shlafer, M, Bush, LR and Lucchesi, BR: Prevention by propranolol or atenolol of ischemia-induced losses of contractile and subcellular function in isolated blood-perfused hearts. Fed. Proc. 1980; 39:1002.
16. Haack, DW, Bush, LR, Shlafer, M and Lucchesi, BR: Lanthanum staining of coronary microvascular endothelium. Effects of ischemia, propranolol, and atenolol. Fed. Proc. 1980; 39:774.
17. Shlafer, M, Kane, P, Wiggins, V and Kirsh, MM: Superoxide dismutase plus catalase enhance protective effects of cold cardioplegia in globally ischemic isolated hearts. Circulation 1981; 64(Suppl.):IV- 148.
18. Bush, LR, Shlafer, M, Jolly, SR and Lucchesi, BR: Preservation of contractile and subcellular function by diltiazem after global ischemia in isolated blood-perfused hearts. Circulation 1981; 64(Suppl.):IV-99.
19. Sinhaseni, P, D'Alecy, LG, Hartung, R and Shlafer, M: Hexachlorocyclopentadiene increases oxygen consumption by intact rainbow trout and isolated heart mitochondria. Fed. Proc. 1982; 41:1580.
20. Shlafer, M, Kane, P, Wiggins, V and Kirsh, MM: Cytotoxic oxygen metabolites in pathogenesis of ischemic cardiac damage: Oxygen radical-metabolizing enzymes improve hypothermic cardioplegia. Fed. Proc. 1982; 41:1765.
21. D'Alecy, LG, Myers, CL, Brewer, M and Shlafer, M: Substrate-specific stimulation by glucagon of oxidative phosphorylation in isolated murine brain mitochondria. Fed. Proc. 1982; 41:973.
22. McKenney, P, Sestak, D, D'Alecy, LG and Shlafer, M: Comparative substrate-specific effects of glucagon on murine heart and brain mitochondrial respiration. Clin. Res. 1983; 31:815A.
23. Shlafer, M, Myers, CL, Kirsh, MM, Turla, M, Mervis, M, and Weiss, SJ: Evidence that hydrogen peroxide, not superoxide anion, is the primary cytotoxic oxygen metabolite in the pathogenesis of cardiac anoxia/reoxygenation- and ischemia/reperfusion-mediated damage. J. Mol. Cell. Cardiol. 1983; 15(Suppl. 4):39.
24. Patterson, E, Shlafer, M, Walden, KM, Montgomery, DG, and Lucchesi, BR: Depression of mitochondrial respiratory activity by chronic amiodarone treatment: Reversal by T3. Circulation 1983; 68:III-66.

25. Lundy, E, D'Alecy, LG, Kluger, MJ, Harker, CT, Sachdev, N, and Shlafer, M: Suggested role of blood ketones in hypoxic tolerance in hibernators. Fed. Proc. 1984; 43:890.
26. Myers, CL, Weiss, SJ, Kirsh, MM, Shepard, BM, and Shlafer, M: Hydrogen peroxide, not superoxide anion, may be the primary cytotoxic oxygen metabolite in the pathogenesis of cardiac ischemia and reperfusion-mediated damage. Fed. Proc. 1984; 43:701.
27. Shlafer, M, Myers, CL, Kirsh, MM, Shepard, BM, and Weiss, SJ: Effects of agents that alter oxygen radical metabolism on cardiac damage due to the "oxygen paradox". Fed. Proc. 1984; 43:294.
28. Strainer, JC, McCarthy, DO, Shlafer, M, and Kluger, MJ: Enhanced hydrogen peroxide generation by human neutrophils following exercise. Fed. Proc. 1985; 44:1546.
29. Myers, CL, Weiss, SJ, Shepard, BM, Kirsh, MM, and Shlafer, M: Oxygen radical defenses in cardiac ischemia. Fed. Proc. 1985; 44:1124.
30. Shlafer, M, Gallagher, KP, and Adkins, S: Effects of regional cardiac ischemia on mitochondrial oxygen consumption and hydrogen peroxide generation. Fed. Proc. 1985; 44:1275.
31. Gallagher, KP, Gerren, RA, Stirling, MC, Choy, M, Shlafer, M, and Buda, AJ: Systolic wall thickening at the lateral margins of ischemic myocardium in conscious dogs. Circulation 1985; 72 (Suppl. III):67.
32. Buda, AJ, Gallagher, KP, Zotz, RJ, Shlafer, M, Pace, DP, and Krause LC: Circumferential flow-function relations in the conscious dog during regional myocardial ischemia. Circulation 1985; 72 (Suppl. III):68.
33. Gallagher, KP, Buda, AJ, and Shlafer, M: Failure of superoxide dismutase or catalase to alter infarct size, coronary blood flow or hemodynamics in closed-chest conscious dogs. Circulation 1985; 72 (Suppl. III):351.
34. Ketai, L, Grum, CM, Myers, CL, and Shlafer, M: Purine washout from ischemic rabbit heart: lack of xanthine oxidase activity, relevance to allopurinol cardioprotection. Circulation 1985; 72 (Suppl. III):357.
35. Forder, JR, Drake, DH, Gallagher, KP, Dunham, WR, and Shlafer, M: Myocardial viability during global ischemia and reperfusion: Assessment with ³¹P nuclear magnetic resonance spectroscopy, effects of a 5'-nucleotidase inhibitor. Circulation 1986; 73 (Suppl. III):353.
36. Gallagher, KP, Dunham, WR, Gerren, RA, Ning, XH, Shlafer, M, and Buda, AJ: The distribution of functional impairment across the lateral margin of ischemic myocardium in conscious dogs. Fed. Proc. 1987; 46:497.
37. Shlafer, M, Brosamer, K, Kunkel, RG, Simon, RH, Ward, PA, and Grum, CM: Electron microscopic-histochemical demonstration of hydrogen peroxide at endothelium of isolated ischemic-reperfused hearts. Circulation 1987; 76(Suppl IV):535.

38. Forder, JR, and Shlafer, M: Inhibition of 5'-nucleotidase improves myocardial recovery following ischemia without increasing ATP concentration. *The Pharmacologist* 1988; 30:A62.
39. Grum, CM, Shlafer, M, Brosamer, K, Finch, J, and Morganroth, ML: Histochemical demonstration of hydrogen peroxide in ischemic-reperfused isolated rat lungs. *Am. Rev. Resp. Dis.* 1989; 139(4):A413
40. Forder, JR, Gallagher, KP, McClanahan, T, and Shlafer, M: Hemodynamic effects of deferoxamine and its pentastarch conjugate. *J. Mol. Cell. Cardiol.* 1989; 21(Suppl. II):S-122.
41. Scherrer, LC, and Shlafer, M: Aldehyde oxidase, a potential source of oxidants in rabbit heart. *J. Mol. Cell. Cardiol.* 1989; 21(Suppl. II): S-125.
42. Buckmaster, MJ, Werns, SW, Shlafer, M, Lucchesi, BR, and Fantone, JC: Inhibition of sarcoplasmic reticulum $\text{Ca}^{2+}/\text{Mg}^{2+}$ -dependent ATPase by myoglobin-hydrogen peroxide. *Fed. Proc.* 1990; 4(4): A1217.
43. Mack, CP, Hultquist, DE, Quandt, KS, and Shlafer, M: Myocardial flavin reductase and flavins: Potential role in decreasing reoxygenation injury. *Circulation* 1992; 86(4): I-561.
44. Hultquist, DE, Mack, CP, Quandt, KS, Shlafer, M, Xu, F: Studies of the mechanism by which riboflavin and pyrroloquinoline quinone protect tissues from reoxygenation injury. *Free Rad. Biol. Med.* 1993; 15(5):489.
45. Brandt R, McDonald NJ, Anderson PF, MacEachern M, Shlafer M, Sohn W, Peters MC. Efficacy of Local Infiltration Anesthesia in Dentistry: A Systematic Review. *J Dent Res* 89 (Special Issue A): 715, 2010

OTHER — Symposia, Seminars and Other Invited Presentations (selected)

Pharmacologic Actions of Dimethyl Sulfoxide on the Mammalian Myocardium, presented at the New York Academy of Sciences Symposium on "Biological Actions of Dimethyl Sulfoxide, January 1974, New York City.

Cryoprotectants: Drugs that Affect the Cellular Response to Low Temperatures, presented at the ASPET Symposium "Drugs and Hypothermia," April 1977, Chicago.

Invited Seminar, The Ohio State University, School of Medicine, Department of Pharmacology, February 1977, Columbus, OH.

Invited Seminar, The University of Michigan Medical School, Department of Pharmacology, March 1977, Ann Arbor, MI.

Invited Seminar, University of Louisville School of Medicine, Department of Pharmacology, March 1977, Louisville, KY.

Invited Speaker, Workshop on Organ Preservation for Transplantation, joint meeting of Society for Cryobiology and Southeast Organ Procurement Fdn., October 1979, Atlanta.

Invited Seminar, Medical College of Georgia, Department of Pharmacology, October 1979, Augusta, GA.

Invited Speaker, "Pharmacology of Drugs Used for Treating Allergic Respiratory Diseases," presented at the Towsley Center for Continuing Medical Education, "Current Topics in Allergy and Clinical Immunology," Univ. Mich. Medical School, May 1979, Ann Arbor.

Invited Speaker, Pharmacological Management of Asthma and Obstructive Lung Disease, presented to faculty and house-staff, Division of Allergy, Department of Internal Medicine, University of Michigan Medical School, December 1979, Ann Arbor, MI.

Invited Speaker, Pharmacology of Diuretic Drugs, presented at "Seminars in Clinical Pharmacology," McLaren General Hospital, July 1980, Flint, MI.

Invited Speaker, Cardiotonic and Cardiotoxic Actions of the Sodium-transporting Ionophore Monensin, Department of Physiology, Univ. Michigan Medical School, September 1980.

Keynote Speaker, Sophomore (Nursing) Striping Ceremony, University of Michigan, School of Nursing, Class of 1983, April 1981, Ann Arbor, MI.

Invited Speaker, "Strategies for Intraoperative Pharmacological Protection of the Globally Ischemic Heart," presented to the Pharmacology Research Group, Revlon Health Care Group, Revlon, Inc., September 1981, Tuckahoe, NY.

Invited Speaker, "Oxygen Metabolism in Cardiac Ischemic Damage," Cardiology Division, Department of Internal Medicine, University of Michigan Medical School, May 1982, Ann Arbor, MI.

Invited Speaker, "Role of Cytotoxic Oxygen Metabolites in the Pathogenesis and Prevention of Cardiac Damage from Global Ischemia," presented to the Upstate New York Thoracic Surgery Society, annual meeting, held at the Division of Thoracic Surgery, Department of Surgery, University of Michigan Medical School, July 1982, Ann Arbor, MI.

Invited Speaker, "Role of Dimethyl Sulfoxide in Hypothermic and Ischemic Organ Preservation," presented at the Third International Conference on the Biological Actions and Medical Applications of Dimethyl Sulfoxide, New York Academy of Sciences, New York, 1983.

Invited presentation, Role of Oxygen Radical Scavengers in the Management of Cardiac Ischemic Injury," presented at the Second Annual McNeil/University of Michigan Symposium on Drug Development, May 1983, Spring House, PA.

Invited Speaker, "Oxygen Radicals in Cardiac Ischemic Injury," presented at Nephrology Research Conference, Department of Internal Medicine, Division of Nephrology, University of Michigan Medical School, June 1983, Ann Arbor, MI.

Invited Speaker, "Drug Intervention for Cardiac Ischemic Injury: Role of Oxygen Radical Scavengers," presented to Department of Pharmacology & Toxicology, Michigan State University, February 1986.

Invited Lecturer in medical student pharmacology course, State University of New York (Buffalo), Department of Pharmacology and Therapeutics, "Pharmacology and therapeutics of digitalis and other drugs for heart failure," March 13, 1986.

Invited Speaker, "Theophylline and Adrenergic Bronchodilator Therapy for Asthma," presented to residents, St. John's Hospital, Detroit, March 31, 1986.

Invited Speaker, "Free radicals as contributors to cell damage," part of graduate colloquium on "Mediators of Cell Damage," Loyola University, Stritch College of Medicine, Chicago, April 11, 1986.

Invited Speaker, "Failure of superoxide dismutase to reduce infarct size in conscious dogs," Point Clear (Alabama) Symposium on Oxygen Radicals and Tissue Damage, International Society for Heart Research, March, 1988.

Invited Speaker, "Heart-Derived Oxidants and Ischemic/Hypoxic Myocardial Injury," seminar at Medical College of Georgia, Augusta, May 1989

Invited Speaker, "Pharmacology and Toxicology of Drugs of Abuse," presented to residents and house-staff, St. John's Hospital, Detroit, May 1989.

Invited Lecturer in Cardiac Mechanics and Metabolism, graduate course PSL 919, "Coronary Ischemia and Reperfusion: Mechanisms of Tissue Injury," Interdepartmental Cardiovascular Training Grant Program, Michigan State University, November 30, 1989 (2 hrs)

Invited Panelist, Association of American Medical Colleges workshop entitled Integrating Basic and Clinical Science: Conceptual and Educational Issues, at 1992 annual meeting of the AAMC, New Orleans, LA.

Invited Speaker, Third Annual Conference on "Perspectives in Cardiothoracic Nursing:" Cardiovascular Medications: New Drugs and New Uses, Ann Arbor, October 1995

Invited Speaker/Presenter: Association for American Medical Colleges — Central Group on Educational Affairs, Annual Meeting 1998, Kansas City: *Use of the Internet in Medical Education: Web Sites in Support of Teaching*

Invited speaker, *Pharmacology for Undergraduate Nursing Programs*, in the symposium *Pharmacology for Healthcare Professionals: A Thirst for Knowledge*, at the American Society for Pharmacology and Experimental Therapeutics/Experimental Biology 2011 meeting, April 10, Washington, DC.

Invited speaker for Nurses' Day, October 2013, organized by the University of Michigan Health Systems Department of Nursing, Continuing Education; Presentation title: *Syndrome X: The Good, The Bad, and The Ugly*

Marshal Shlafer