

CURRICULUM VITAE

Simeone Marino, PhD
Assistant Research Scientist

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EDUCATION/TRAINING

1997 B.S. and M.S. Statistical and Economical Sciences, Dept Applied Statistics and Probability. University of Rome I "La Sapienza", Rome, Italy.

2002 Ph.D. Operations Research. University of Rome I "La Sapienza", Rome, Italy.

POSITIONS AND EMPLOYMENT

July 2001 Research Fellow, University of Michigan Medical School, Dept. Microbiology and
Jan 2004 Immunology, Ann Arbor, MI

Feb 2004 Postdoctoral Fellow, Biostatistics, Bioinformatics and Epidemiology, MUSC,
June 2004 Charleston, SC

July 2004 Research Fellow, Microbiology and Immunology, University of Michigan, Ann Arbor, MI
Jan 2005

Feb 2005 Research Faculty, The Wallace H. Coulter Department of Biomedical Engineering at
July 2005 Georgia Tech and Emory University, Atlanta, GA

2005-2011 Research Investigator, University of Michigan Medical School, Dept. Microbiology and
Immunology, Ann Arbor, MI

2011- Assistant Research Scientist, University of Michigan Medical School, Dept.
present Microbiology and Immunology, Ann Arbor, MI

TEACHING

1998-2001 **Lecturer**, Statistics and Probability, Internal Medicine, Catholic University, Rome, Italy
Descriptive statistics and basic inference for Medical Students.

Fall 2003 **Lecturer**, Mathematical Modeling of Infectious Diseases, University of Michigan, Ann
Arbor, MI

July 2006 **Lecturer**: 1st Biodefense Immune Modeling Summer School (Pittsburgh, PA)

July 2007 **Lecturer**: 2nd Biodefense Immune Modeling Summer School (Pittsburgh, PA)

Lecturer at the University of Tennessee, Knoxville on Uncertainty and Sensitivity
June 17- Analysis, Summer Graduate Workshop: Connecting Biological Data with Mathematical
28, 2013 Models NIMBIOS. Title: "Uncertainty and Sensitivity Analysis in Systems Biology: Latin
Hypercube Sampling/PRCC".

RESEARCH INTERESTS

- *Statistics/Probability*: Parameter estimation and statistical techniques for uncertainty and sensitivity analysis in complex mathematical and computational models
 - Sampling schemes (e.g., Latin Hypercube Sampling) to assess uncertainty in the parameter space
 - Sensitivity indexes to apportion and rank variability and correlation to model parameters (e.g., partial rank correlation coefficients-PRCCs)
- *Nonlinear Programming*: Data Mining and Biochemical System Network discovery
 - Data-fitting procedure (Non-Linear Least Squares – NLLS) for extracting structural information from time series of metabolite concentrations, or of gene or protein expression profiles. Biochemical System Theory (BST) is the theoretical framework, but the approach can be applied to general nonlinear systems of differential equations
- *Mathematics*: representing cell populations dynamics and interaction by various mathematical and computational modeling techniques, e.g. deterministic Ordinary Differential Equation (ODE) and Delay Differential Equation (DDE) systems, as well as Stochastic models (Agent Based Models– ABM).
- *Computational and Mathematical Modeling* of host-pathogen interactions
 - Big Data Analysis and mathematical modeling of gut microbiome
 - Computational and Mathematical modeling of *Mycobacterium tuberculosis* infection in human, primate and mouse.
- Extensive work experience with Matlab and working knowledge of Unix, Linux, Mac and PC
- Excellent skill using Excel, PowerPoint, MS Word
- Experience using R, SAS, SPSS and Stata

GRANT AWARDS

a) Active

- (1) National Institutes of Health (R01), Role Co-Pi, PI Schloss – Title: “Diversity and stability relationships in the murine microbiome”, 2/1/12-3/31/16
- (2) National Institutes of Health (R01), Role Co-Pi, PI Kirschner, Title “*Predicting immune responses that correlate with protection against tuberculosis*”, 08/13/2012 – 06/30/2017

b) Pending

- (1) National Institutes of Health (R01), Role Co-Pi, PI Kirschner, Title “*A multi-scale systems pharmacology approach to TB therapy*”, 9/2015-08/2020
- (2) National Institutes of Health (R01), Role Co-Pi, PI Kirschner, Title “*Predicting protective T cells responses in Tuberculosis using a systems biology approach*”, 4/2016-3/2021

c) Recent Awards

- (1) Charles Woodson Interdisciplinary Award in Children’s Health, Intramural Research Funding, Department of Pediatrics & Communicable Diseases, University of Michigan. Title: “Mathematical modeling of pulmonary exacerbation in cystic fibrosis” Simeone Marino coPI (PI is John Lipuma, Director of Division of Pediatric Infectious Diseases, UM)
- (2) National Institutes of Health –subcontract grant, NIH-N01AI 50018 “Modeling Immunity for Biodefense”, University of Pittsburgh, PA. Penny Morel, PI, SM is coPI of University of Michigan subcontract. 100% effort. 9/05-9/10

HONORS AND PROFESSIONAL MEMBERSHIP

1997	Scholarship, U.I.S. project (University Information System), University of Rome, , Italy
1998-2000	EU Fellowship, Joint research project: National Research Council, Rome, Italy/Semlalia University, Marrakech, Morocco (CNCRS)
2004-2007	Member, Society for Industrial and Applied Mathematics
2004-present	Member, Society for Mathematical Biology
2001-present	Aspen Junior Fellow, Aspen Institute Italy

SERVICE

- June 1999 **Co-Organizer**, local support, 2nd European Biomathematics Summer School, Termoli (CB-Italy) 7-19 June 1999
- June 23-25, 2009 **Co-Organizer** of the Symposium “Multiscale Modeling of Host-Pathogen Interactions” (Pittsburgh, PA)
- **Editorial Board** Member of Journal of Biomedical Science and Engineer (2012)
- **Editorial Board** Member of Computational and Mathematical Methods in Medicine (2012)
- **Ad Hoc Reviewer** for several peer-reviewed journals (Plos Computational Biology, Plos Pathogen, J. Theor. Biol., Math Biosc and others).

PEER-REVIEWED PUBLICATIONS (IN CHRONOLOGICAL ORDER).

See <https://scholar.google.com/citations?user=6CFSyAIAAAAJ&hl=en> for more details

1. F. Bartolozzi, De Gaetano A., Di Lena E., **Marino S.**, L. Nieddu L., Patrizi G., *Operational Research Techniques in Medical Treatment and Diagnosis: a Review*, **European Journal of Operations Research**, 121, 435-466, 2000
2. Mingrone G., **Marino S.**, De Gaetano A. et al., *Different Limit to the Body's Ability of Increasing Fat-Free Mass*, **Metabolism**, vol 50 (9), 1004-1007, September 2001
3. **Simeone Marino**, De Gaetano A. et al., *Computing DIT from energy expenditure measures in a respiratory chamber: a direct modeling method*, **Computers in Biology and Medicine**, vol. 32/4: pp. 297-309, May 2002
4. **Simeone Marino**, Suman Ganguli, Ian M. P. Joseph, Denise E. Kirschner *The importance of an inter-compartmental delay in a model for human gastric acid secretion*, **Bulletin of Math Biology**, Vol 65/6 pp 963-990, Nov 2003
5. **Simeone Marino** and Denise E. Kirschner, *The Human Immune Response to Mycobacterium tuberculosis in Lung and Lymph Node*, **Journal of Theoretical Biology**, Volume 227, Issue 4, Pages 451-602, 21 April 2004
6. **Simeone Marino**, Santosh Pawar, Craig L. Fuller, Todd A. Reinhart, JoAnne L. Flynn and Denise E. Kirschner, *Dendritic Cell Trafficking and Antigen Presentation in the Human Immune Response to Mycobacterium tuberculosis*, **Journal of Immunology**, 173: 494-506, 2004
7. Voit EO, Marino S, Lall R. *Challenges for the identification of biological systems from in vivo time series data*. **In Silico Biol.**;5(2):83-92, 2005
8. David Gammack, Suman Ganguli, **Simeone Marino**, Jose Segovia-Juarez, Denise E. Kirschner, *Understanding the Immune Response in Tuberculosis Using Different Mathematical Models and Biological Scales*, **Multiscale Modeling and Simulation: A SIAM Interdisciplinary Journal**, 3 (2), pp. 312-345, 2005
9. Kirschner D. and **Marino Simeone**. *Mycobacterium tuberculosis as viewed through a computer*. **Trends Microbiol.** 13(5):206-11, 2005

10. Voit EO, Almeida J, **Marino S**, Lall R, Goel G, Neves AR, Santos H. *Regulation of glycolysis in Lactococcus lactis: an unfinished systems biological case study*. **Syst Biol** (Stevenage). 153(4):286-98, 2006
11. **Marino S**, Voit EO. *An automated procedure for the extraction of metabolic network information from time series data*. **J Bioinform Comput Biol**. 4(3):665-91, 2006
12. E. Beretta, M. Carletti, D. Kirschner and **Marino S.**, Stability analysis of a mathematical model of immune response with delays. **Springer Book Vol. 2: Mathematics for Life Science and Medicine**, eds. Takeuchi, Sato and Iwasa, Chapter 8, pp. 177-206, 2006
13. **S. Marino**, E. Beretta and D. E. Kirschner. *The role of delays in innate and adaptive immunity to intracellular bacterial infection*. **Math. Biosc. Eng.** 4(2), pp. 261-286, 2007
14. **Marino, S.**, Sud, D., Plessner, H., Lin PL, Chan J., Flynn, JL, Kirschner, D. Differences in reactivation of tuberculosis induced from anti-TNF treatments are based on bioavailability in granulomatous tissue **PLOS Computational Biology**. Vol. 3 (10) e194. pp. 1909-24. Oct 2007
15. Chakravarty, S. D., Zhu, G., Tsai, M. C., Mohan, V. P., **Marino, S.**, Kirschner, D. E., Huang, L., Flynn, J. & Chan, J.. Tumor necrosis factor blockade in chronic murine tuberculosis enhances granulomatous inflammation and disorganizes granulomas in the lungs. **Infect Immun** 76(3), 916-26, 2008
16. **Marino, S.**, Hogue, I. B., Ray, C. J. & Kirschner, D. E. A methodology for performing global uncertainty and sensitivity analysis in systems biology. **J Theor Biol** 254(1), 178-96, 2008
TOP 3 PUBLICATION IN JOURNAL OF THEORETICAL BIOLOGY FOR THE PAST 5 YEARS
17. Amy L. Bauer, Ian B. Hogue, **Simeone Marino** and Denise E. Kirschner. The Effects of HIV-1 Infection on Latent Tuberculosis. **Mathematical Modeling of Natural Phenomena**, Vol. 3 No. 7: 229, 2008
18. Roshan D'Souza, Mikola Lysenko, **Simeone Marino** and Denise Kirschner. Data-parallel algorithms for agent-based model simulations of tuberculosis on graphics processing units. Accepted in the **Proceedings of SpringSim'09 - Agent-Directed Simulation (ADS09)**. San Diego San Diego, CA, March 22 - 27, 2009
19. Jennifer J. Linderman, Thomas Riggs, Manjusha Pande, **Simeone Marino** and Denise E. Kirschner, Characterizing the dynamics of CD4+ T cell priming within a lymph node. **Journal of Immunology** 2010, 184: pp 2873-2885
20. **Simeone Marino**, Amy Myers, JoAnne Flynn and Denise Kirschner, TNF and IL-10 are major factors in modulation of the phagocytic cell environment in lung and lymph node in tuberculosis: a next generation two compartmental model, **Journal of Theoretical Biology**, 265 (2010) 586–598
21. **Simeone Marino**, Jennifer Linderman, Denise E. Kirschner. A Multi-Faceted Approach to Modeling the immune response in Tuberculosis (invited focused article in **Wiley Multidisciplinary Reviews, Systems Biology and Medicine**). 2010
22. R. Lall, T. J. Donohue, **S. Marino** and J. C. Mitchell. Optimizing Ethanol Production Selectivity. **Mathematical and Computer Modeling**, 53: pp. 1363-1373, 2011.
23. Fallahi-Sichani, M., El-Kebir, M., **Marino, S.**, Kirschner, D.E., and Linderman, J.J., 2011. Multiscale computational modeling reveals a critical role for TNF-alpha receptor 1 dynamics in tuberculosis granuloma formation. **J Immunol** 186, 3472-83.
24. **Marino S.**, Mohammed El-Kebir, Denise Kirschner. 2011. A hybrid multi-compartment model of granuloma formation and T cell priming in Tuberculosis. **J Theor Biol** 280:50-62
25. Fallahi-Sichani, M., **S. Marino**, J. L. Flynn, J. J. Linderman, and D. E. Kirschner. 2012. A systems biology approach for understanding granuloma formation and function in tuberculosis. In **Systems biology of tuberculosis**. D. B. a. A. K. J. McFadden, ed. Springer.

26. **Marino, S.**, M. Fallahi-Sichani, J. J. Linderman, and D. E. Kirschner. 2012. Mathematical Models of Anti-TNF Therapies and their Correlation with Tuberculosis. In **Antibody-Mediated Drug Delivery Systems**. John Wiley & Sons, Inc., Hoboken, New Jersey. 83-104.
27. Tsygvintsev A., **S. Marino** and Denise Kirschner. A mathematical model of Gene Therapy for the Treatment of Cancer, (with D. Kirschner, S. Marino), in the book "Mathematical Models and Methods in Biomedicine" (eds. U. Ledzewicz, Friedman, E. Kashdan, H. Schaettler), 2012, Springer-Verlag, Berlin
28. Mattila, J. T., O. O. Ojo, D. Kepka-Lenhart, **S. Marino**, J. H. Kim, S. Y. Eum, L. E. Via, C. E. Barry, 3rd, E. Klein, D. E. Kirschner, S. M. Morris, Jr., P. L. Lin, and J. L. Flynn. 2013. Microenvironments in tuberculous granulomas are delineated by distinct populations of macrophage subsets and expression of nitric oxide synthase and arginase isoforms. **J Immunol** 191:773-784.
29. Myers, A. J., **S. Marino**, D. E. Kirschner, and J. L. Flynn. 2013. Inoculation dose of Mycobacterium tuberculosis does not influence priming of T cell responses in lymph nodes. **J Immunol** 190:4707-4716.
30. Repasy, T., J. Lee, **S. Marino**, N. Martinez, D. E. Kirschner, G. Hendricks, S. Baker, A. A. Wilson, D. N. Kotton, and H. Kornfeld. 2013. Intracellular bacillary burden reflects a burst size for Mycobacterium tuberculosis in vivo. **PLoS Pathog** 9:e1003190.
31. Marino, S., N. T. Baxter, G. B. Huffnagle, J. F. Petrosino, and P. D. Schloss. 2014. Mathematical modeling of primary succession of murine intestinal microbiota. **Proc Natl Acad Sci U S A** 111:439-444.
32. Denise E. Kirschner, C. Anthony Hunt, **Simeone Marino**, Mohammad Fallahi-Sichani, Jennifer J. Linderman. Tuneable resolution as a systems biology method for multi-scale, multi-compartment computational models. **WIREs Syst Biol Med** 2014, 6:289-309, DOI: 10.1002/wsbm.1270, PMID: 24810243, PMCID: 4102180
33. Gregg S Davis, **Simeone Marino**, Carl F Marrs, Janet R Gilsdorf, Suzanne Dawid, Denise K Kirschner. Phase Variation and Host Immunity Against High Molecular Weight (HMW) Adhesins Shape Population Dynamics of Nontypeable Haemophilus influenzae Within Human Hosts. **J. of Theor. Biology** 2014 Aug 21;355:208-18. doi: 10.1016/j.jtbi.2014.04.010. Epub 2014 Apr 18.
34. Gideon HP, Phuah J, Myers AJ, Bryson BD, Rodgers MA, Coleman MT, Maiello P, Rutledge T, Marino S, Fortune SM, Kirschner DE, Lin PL, Flynn JL. Variability among T cell responses in lung granulomas exists, but a balance of pro- and anti-inflammatory cytokines is associated with granuloma sterilization. **Plos Pathogen** 2015 Jan 22;11(1):e1004603. doi: 10.1371/journal.ppat.1004603. eCollection 2015 Jan. PMID:25611466
35. Nicholas A. Cilfone, Christopher B. Ford, **Simeone Marino**, Joshua T. Mattila, Hannah P. Gideon, JoAnne L. Flynn, Denise E. Kirschner, and Jennifer J. Linderman. Computational Modeling Predicts IL-10 Control of Lesion Sterilization by Balancing Early Host Immunity-Mediated Antimicrobial Responses with Caseation during Mycobacterium tuberculosis Infection. **J Immunol** 2015 194:664-677
36. Ashley Hazel, Simeone Marino, Carl Simon. An anthropologically based model of the impact of asymptomatic cases on the spread of Neisseria gonorrhoeae. **J. R. Soc. Interface** 2015 12 20150067; DOI: 10.1098/rsif.2015.0067. Published 25 March 2015
37. **Simeone Marino**, N. A. Cilfone, J. T. Mattila, J. J. Linderman, J. L. Flynn, D. E. Kirschner, Macrophage Polarization Drives Granuloma Outcome during Mycobacterium tuberculosis Infection. **Infect Immun** 83, 324-338 (2015)
38. **Simeone Marino** et al. Pairing computational modeling with macaque studies predicts Mycobacterium tuberculosis-specific effector T cells as a biomarker for tuberculosis infection outcome (submitted Plos Comp Bio)

TALKS

- 1) Marino, S*, June 2001 Necessary and sufficient condition for the local convergence of Gauss-Newton and Levenberg-Marquardt algorithms: parameter estimation of ODEs systems, 2nd ESMTB Euro Summer School, Siguenza: Biology and Mathematics of Cells: Physiology, Kinetics and Evolution
- 2) Marino S*, "A Constrained Non Linear Least Squares approach for statistically correct estimates". Math Biology Group Seminars, Feb 2002 Dept. Of Mathematics, University of Michigan, Ann Arbor, MI-USA
- 3) Marino, S*, March 2002 Mathematical modeling of the intravenous glucose tolerance test (IVGTT) by a delay differential equations system American Mathematical Society Central Sectional Meeting, Ann Arbor, MI. Biological Applications of Dynamical Systems
- 4) Marino, S*, July 2002 The role of dendritic cells in the immune response to Mycobacterium tuberculosis: a 2-compartment model , 5th ESMTB tri-annual Conference (ECMTB2002), Milan (Italy): Mathematical Modeling & Computing in Biology and Medicine
- 5) Marino, S*, March 2003 Parameter Estimation for Ordinary Differential Equations systems using a Least Squares algorithm: a tentative application to S-Systems. MUSC, Biometry and Epidemiology Dept, Charleston , SC
- 6) Marino S*, JoAnne Flynn, Kirschner, D. "The role of dendritic cells in the immune response to Mycobacterium tuberculosis. American Association of Immunologists (AAI) 2003, May 6-10, 2003 Denver, Colorado.
- 7) Marino, S and Kirschner, D. The role of Dendritic cells in TB infection. Workshop on host-pathogen interactions, Columbus, Ohio June 21-24, 2004.
- 8) Marino*, S and Kirschner, D. "Role of delays in the immune response to intracellular pathogens", The Annual Meeting of the Society for Mathematical Biology, Ann Arbor, MI July 27, 2004.
- 9) Marino, S* and Kirschner, D. "*The importance of an inter-compartmental delay in a model for human gastric acid secretion*", SIAM Conference on the Life Sciences, July 11-14, 2004, Oregon Convention Center, Portland, OR (Oral)
- 10) Marino S*, *M. tuberculosis infection viewed through a computer*. Departmental Seminar. Nov 21 2004 Dept. of Microbiology and Immunology, University of Michigan Med. School, Ann Arbor, MI-USA
- 11) Marino, S*, Sud, D, Flynn, J Kirschner, D. Differences in reactivation of tuberculosis induced from anti-TNF treatments are based on bioavailability in granulomatous tissue . . *Contributions of Bioinformatics, Systems Biology and Biosensors to Vaccine Development*. Pittsburgh, PA Sept 28-30, 2008
- 12) Marino*, S and Kirschner, D. A Methodology for Performing Global Uncertainty And Sensitivity Analysis In Systems Biology. Joint Meeting Special Session on Recent Advances in Mathematical Modeling in Medicine, American Mathematics Society. January 5th, 2009, Washington, DC.
- 13) Marino, S and Kirschner, D. Roles of Dendritic Cells in The Immune Response To Bacterial And Viral Infections Keystone Conference, "Dendritic Cells", March 29 - April 3, 2009 • Fairmont Banff Springs • Banff, Alberta
- 14) Marino, S and Kirschner, D. "A multi-compartmental model of *Mycobacterium tuberculosis* infection in mice: the role of antigen dose in T cell priming". International Conference on Mathematical Biology and the annual meeting of the Society for Mathematical Biology, July 27-30, 2009 University of British Columbia, Vancouver, BC, Canada.
- 15) Marino, S*, Dhruv Sud, Hillarie Plessner, Philana Ling Lin, John Chan, JoAnne L. Flynn, Denise E. Kirschner. "Virtual Clinical Trials: a Way to Assess Differences in Reactivation of Tuberculosis Induced from Anti-TNF Treatments". AAPS 2010 National Biotechnology Conference May 16-19, 2010, San Francisco, California
- 16) Marino, S.(*), A. Myers, J. L. Flynn, and D. E. Kirschner. A two-compartmental model of Mycobacterium tuberculosis infection. SIAM Conference on Applications of Dynamical Systems, Snowbird, Utah May 22-26, 2011
- 17) Marino, S.(*), J. J. Linderman, and D. E. Kirschner. A Multi-faceted Approach to Modeling the Immune Response in Tuberculosis. Rochester Conference on Oral Biology: Post-Genomics for the Oral MicroBiome, June 16-18, 2011

- 18) Marino, S. (*), Department of Medicine Research Seminar, UMass Medical School, Worcester, MA, 2/8/12
- 19) Marino, S. (*), SystemTb Workshop on Hypoxia, Stresa, Italy, March 6-7, 2012 (<http://www.systemtb.org/>)
- 20) Marino, S. (invited speaker*), A Systems Biology Approach to Modeling the Immune Response in Tuberculosis. NIAID Modeling Immunity for Biodefense Program - Symposium on Immune Modeling, Center for Biodefense and Immune Modeling (CBIM), Rochester (NY), June 11-14, 2012
- 21) Marino, S. (invited speaker*), A Systems Biology Approach to Understanding the Immune Response in Tuberculosis. Department of Computational Medicine and Informatics, University of Michigan, January 30 2013
- 22) Marino, S. (*), Lectures on Uncertainty and Sensitivity Analysis at the Joint 2013 MBI-NIMBioS-CAMBAM Summer Graduate Workshop: Connecting Biological Data with Mathematical Models NIMBIOS. June 17-28, University of Tennessee, Knoxville. Title: "Latin Hypercube Sampling/PRCC".
- 23) Marino, S. (*), Invited Speaker at the International Centre for Mathematical Sciences (ICMS), Edinburgh, UK, July 22-26, 2013. Edinburgh. Stochastic, statistical and computational approaches to Immunology. Title: "Hybrid Computational Models of Granuloma formation during Tuberculosis Infection".

POSTERS, ABSTRACTS, PRELIMINARY COMMUNICATIONS, PANEL DISCUSSIONS

- 1) Marino S*, JoAnne Flynn, Kirschner, D. "Math modeling in the human immune response to *Mycobacterium tuberculosis* in the Lung and Lymph node". Biocomplexity Workshop V: Multiscale Modeling in Biology, Notre Dame, Indiana, August 14-17, 2003.
- 2) Segovia-Juarez*, J., Ganguli, S., Marino, S., and Kirschner, D. "Studying inhibitory mechanisms across hierarchies: the cases of hypernetwork learning and TB granuloma formation". Biocomplexity V: Multiscale Modeling in Biology, August 13-18, 2003. Notre Dame, IN.
- 3) Marino S*, JoAnne Flynn and Kirschner, D., The Role of Dendritic Cells in the Human Immune Response to *Mycobacterium tuberculosis* in Lung and Lymph Node. The Center for Biological Modeling at Michigan State University, Annual Symposium on Biological Networks, Lansing, MI, October 17, 2003.
- 4) Marino S*, *A two-delay differential equation system for innate and adaptive immunity*. Digital Biology: The Emerging Paradigm, Natcher Conference Center, NIH, Bethesda, MD November 6-7, 2003
- 5) Marino, S* and Kirschner, D. "Dendritic Cell Trafficking and Antigen Presentation in the Human Immune Response to *Mycobacterium tuberculosis*, Keystone Symposia, "The Pathogen-Host Standoff: Persistent and Latent Infection", Taos, NM, March 25-30, 2004
- 6) Aug. 21-25, 2004 *An Automated Procedure for Information Extraction with S-System* (Oral) and *Modeling the Glycolytic Pathway in Lactococcus lactis from Experimental Time Series Data using S-systems and a Generalized Least Squares Method* (Poster). Int. Conf. Molecular and System Biology – ICMSB04, Lake Tahoe (CA)
- 7) Marino*, S and Kirschner, D. A Methodology for Performing Global Uncertainty and Sensitivity Analysis In Systems Biology. Microbiology and Immunology Annual Retreat, Kalamazoo, MI Oct 12-14, 2008.
- 8) Fallahi-Sichani, M*. Schaller, M, Kirschner, D. Kunkel, S. Linderman, J. "Model-Based Analysis and Quantitative Measurement of Key Components of Tumor Necrosis Factor Trafficking in a Tuberculosis Granuloma", AIChE Annual Meeting, Nashville, TN November 2009
- 9) Marino, S*, Linderman, J and Kirschner, D. "Systems Biology Approaches toward understanding Immunity in Disease". Systems Biology Symposia: Celebrating the Diversity of Contemporary Integrative Biology, Ann Arbor, Michigan, Dec 1, 2009.
- 10) Marino, S. (*), M. El-Kebir, and D. E. Kirschner. Immunotherapy and Vaccination Strategies for latently Tuberculosis infection: a hybrid multi-organ modeling approach. Chaos and Complexity Conference, Ann Arbor, June 16-18, 2012
- 11) Marino, S. (*), Poster at the Workshop: Biomarkers for Tuberculosis: New Questions, New Tools. Sept 8-10, 2013. Marriott Westfields Washington Dulles, Chantilly, VA 20151. Title: "A two-pronged approach in TB biomarker discovery".

- 12) Marino, S. (*), Poster at AAI National Meeting, Pittsburgh April1-4, 2014, Convention Center, Title: "Macrophage polarization drives granuloma outcome during *Mycobacterium tuberculosis* infection".
 - 13) Kirschner, D*, C Anthony Hunt, Simeone Marino, Mohammad Fallahi-Sichani, Linderman, J. Tuneable Resolution as a systems biology approach for multi-scale, multi-compartment models. IMAG Multiscale Modeling Consortium Meeting, Bethesda, MD, Sept 7, 2014.
 - 14) Marino S.*, D Kirschner, J Linderman, J Flynn, N Cilfone, J Mattila Macrophage polarization drives granuloma outcome during Mycobacterium tuberculosis infection. Keystone Symposium: Host Response in Tuberculosis. Santa Fe, NM Jan 22-27 2015
 - 15) Marino S.*, D Kirschner, J Linderman, J Flynn, N Cilfone, J Mattila Macrophage polarization drives granuloma outcome during Mycobacterium tuberculosis infection. Computational Discovery in Complex Systems Biology. University of Michigan, Ann Arbor, MI Sept 23 2015
- NOTE: asterisk (*) implies presenter of poster or contributed talk