

## SUDIN BHATTACHARYA

Assistant Professor, Biomedical Engineering | Pharmacology & Toxicology  
Institute for Quantitative Health Science & Engineering | Center for Research on Ingredient Safety  
**Michigan State University**

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### EDUCATION

Ph.D., **University of Michigan, Ann Arbor**, Mechanical Engineering, 2006  
Dissertation: "A Computational Study of the Structure and Physical Properties of Sol-Gel derived Porous Silica"  
Advisor: Dr. John Kieffer, *Professor*, Materials Science & Engineering

M.S.M.E., **University of Kentucky**, Mechanical Engineering, 1999  
Thesis: "Numerical and Experimental Modeling of Tool/Chip Interface in Metal Cutting"  
Advisor: Dr. Michael R. Lovell, currently *Chancellor*, University of Wisconsin-Milwaukee

B.M.E., **Jadavpur University**, India, Mechanical Engineering, 1997

Complex Systems Summer School, **Santa Fe Institute**, Santa Fe, NM, 2003

### AWARDS AND FELLOWSHIPS

**Young Investigator Award, Association of Scientists of Indian Origin, Society of Toxicology**, 2018

**Edward Carney Award for Predictive Toxicology, American Society for Cellular and Computational Toxicology**, 2018

**University of Michigan Graduate Fellowship**, 1999-2000

**Presidential Graduate Fellowship, University of Kentucky**, 1998-1999

- Awarded to graduate students "who demonstrate outstanding academic merit and research capabilities in their field of study"

### RESEARCH GRANTS AWARDED

"A Multi-scale Dose-response Model of AHR Toxicity Pathway Activation in the Human Liver"  
**US EPA STAR (Science to Achieve Results) Research Grant: Computational Toxicology: Biologically-Based Multi-Scale Modeling**

**Role:** PI

**Project Period:** June 1, 2011 through May 30, 2015

**Project Amount:** \$750,000

[http://cfpub.epa.gov/ncer\\_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/9500](http://cfpub.epa.gov/ncer_abstracts/index.cfm/fuseaction/display.abstractDetail/abstract/9500)

### RESEARCH EXPERIENCE / EMPLOYMENT HISTORY

Assistant Professor (tenure track), Biomedical Engineering and Pharmacology & Toxicology, **Michigan State University**, East Lansing, MI, Jan 2017 - present

Assistant Professor (non-tenure track), Institute for Integrative Toxicology, **Michigan State University**, East Lansing, MI, Oct 2015 – Dec 2016

Senior Research Investigator, Institute for Chemical Safety Sciences, **The Hamner Institutes for Health Sciences**, Research Triangle Park, NC, May 2013 – Oct 2015

Research Investigator, Institute for Chemical Safety Sciences, **The Hamner Institutes for Health Sciences**, Mar. 2009 – May 2013

Computational modeling of cell fate determination and bioinformatic mapping of transcriptional networks, and the effect of environmental pollutants on these networks.

Postdoctoral Fellow, Division of Computational Biology, **The Hamner Institutes for Health Sciences**, Feb. 2007 – Feb. 2009

Developed deterministic and stochastic computational models of transcriptional networks underlying terminal differentiation of B lymphocytes into plasma cells, focusing on how dioxin-like toxicants perturb these cellular pathways.

Postdoctoral Research Associate, Dept. of Chemical Engineering, **University of Massachusetts**, Amherst, MA, 2005 – 2006

Developed atomistic and coarse-grained lattice-model Monte Carlo simulations of silicate nanoparticle formation and self-assembly of porous zeolite structures.

Graduate Student Research Assistant, **University of Michigan**, Ann Arbor, MI, 2001 – 2005

Developed a molecular dynamics (MD) simulation model of the structural and mechanical properties of fractal nanoporous silica aerogels. Work included optimizing an MD force field to model sol-gel polymerization reactions, characterization of gel structure using the fractal dimension calculated from geometric correlations, and measuring mechanical properties of gels from stress/strain behavior and normal mode analysis.

Research Assistant, **University of Kentucky**, Lexington, KY, 1997 – 1999

Developed an experimental system to measure tool-chip interfacial friction in orthogonal machining processes. Studies were complemented by a finite element model implemented on the ANSYS environment.

## TEACHING EXPERIENCE

Instructor, *Dynamical Modeling of Biological Systems*, Fall 2018, **Michigan State University**

Developed and taught a semester-long course on signaling motifs, ultrasensitivity, bistability and binary decision-making, MAP kinase cascades, cell cycle, stochasticity, etc., along with exercises on the Tellurium Notebook modeling platform.

Co-Instructor, *Computational Systems Biology and Dose Response Modeling Workshop*, 2008-2017, **The Hamner Institutes for Health Sciences, Michigan State University**

Developed and gave lectures on signaling motifs, bistability and binary decision-making in biological systems, along with exercises on the Berkeley Madonna (deterministic) and BioNetS (stochastic) modeling platforms.

Co-Instructor, *Physiologically-based Pharmacokinetic Modeling Workshop*, 2013-2018, **The Hamner Institutes for Health Sciences, Michigan State University**

Gave lectures on introductory PBPK modeling using the Berkeley Madonna modeling platforms.

Graduate Student Instructor, *Principles of Engineering Materials*, **University of Michigan**, 2005

Led a weekly discussion section of about 30 students, involving problem solving and test preparation.

Graduate Student Instructor, Mechanical Behavior of Materials, University of Michigan, 2000 – 2001

Led weekly discussion sessions for two sections of about 70 students each, elaborating concepts from lecture and solving problems.

Teaching Assistant, Computer-aided Design and Analysis, University of Kentucky, 1997-1998

Assisted students in two weekly lab sessions with use of Pro-E and ANSYS modeling software.

## PUBLICATIONS

**Refereed Journal Articles** [# Citations on Google Scholar as of 1/24/19] (**h-index = 13**)

<http://scholar.google.com/citations?user=woY4znwAAAAJ>

K. Gasior, N. J. Wagner, J. Cores, R. Caspar, A. Wilson, S. Bhattacharya and M. L. Hauck, The role of cellular contact and TGF-beta signaling in the activation of the epithelial mesenchymal transition (EMT). *Cell Adhesion & Migration* (2018). [10.1080/19336918.2018.1526597](https://doi.org/10.1080/19336918.2018.1526597)

Q. Zhang, J. Li, A. Middleton, S. Bhattacharya and R. B. Conolly, Bridging the Data Gap from in vitro Toxicity Testing to Chemical Safety Assessment through Computational Modeling. *Frontiers in Public Health* 6: 261 (2018). doi: <https://doi.org/10.3389/fpubh.2018.00261>

N. Josyula, M.E. Andersen, N. Kaminski, E. Dere, T.R. Zacharewski and S. Bhattacharya, Gene Coregulation and Coexpression in the Aryl Hydrocarbon Receptor-mediated Transcriptional Regulatory Network in the Mouse Liver. *bioRxiv* 260018; doi: <https://doi.org/10.1101/260018> (preprint, 2018).

K. Gasior, M. Hauck, A. Wilson and S. Bhattacharya, A Theoretical Model of the Wnt Signaling Pathway in the Epithelial Mesenchymal Transition. *Theoretical Biology and Medical Modelling* 14 (1): 19 (2017). [2]

<https://tbiomed.biomedcentral.com/articles/10.1186/s12976-017-0064-7>

J. Li, S. Bhattacharya, J. Zhou, A.S. Phadnis-Moghe, R.B. Crawford and N.E. Kaminski, Aryl Hydrocarbon Receptor Activation Suppresses EBF1 and PAX5 and Impairs Human B Lymphopoiesis. *The Journal of Immunology*, j11700289; DOI: <https://doi.org/10.4049/jimmunol.1700289> (2017). [2]

<http://www.jimmunol.org/content/early/2017/10/04/jimmunol.1700289>

L. Jagannathan, C.C. Jose, V.S. Tanwar, S. Bhattacharya and S. Cuddapah, Identification of a unique gene expression signature in mercury and 2,3,7,8-tetrachlorodibenzo-p-dioxin co-exposed cells. *Toxicology Research* 6 (3): 312 (2017). [1]

<http://pubs.rsc.org/-/content/articlelanding/2017/tx/c6tx00432f/#!divAbstract>

Q. Zhang, S. Bhattacharya, J. Pi, R.A. Clewell, P.L. Carmichael, and M.E. Andersen, Adaptive Posttranslational Control in Cellular Stress Response Pathways and Its Relationship to Toxicity Testing and Safety Assessment. *Toxicological Sciences* 147(2): 302 (2015). [21]

<http://toxsci.oxfordjournals.org/content/147/2/302.abstract>

Q. Zhang, S. Bhattacharya, R.B. Conolly, H.J. Clewell III, N.E. Kaminski and M.E. Andersen, Molecular Signaling Network Motifs Provide a Mechanistic Basis for Cellular Threshold Responses. *Environmental Health Perspectives* 122(12): 1261 (2014). [39]

<http://ehp.niehs.nih.gov/1408244/>

P. D. McMullen, S. Bhattacharya, C. G. Woods, B. Sun, K. Yarborough, S. M. Ross, M. E. Miller, M. T. McBride, E. L. LeCluyse, R. A. Clewell and M. E. Andersen, A map of the PPAR $\alpha$  transcription regulatory network for primary human hepatocytes. ***Chemico-Biological Interactions*** 209:14 (2014). [69]

<http://www.sciencedirect.com/science/article/pii/S0009279713002895>

P. Godoy, N. J. Hewitt, U. Albrecht, M.E. Andersen, N. Ansari, S. Bhattacharya et al, Recent advances in 2D and 3D in vitro systems using primary hepatocytes, alternative hepatocyte sources and non-parenchymal liver cells and their use in investigating mechanisms of hepatotoxicity, cell signaling and ADME, ***Archives of Toxicology*** 87(8): 1315 (2013). [643]

<http://link.springer.com/article/10.1007/s00204-013-1078-5>

Q. Zhang, S. Bhattacharya and M. E. Andersen, Ultrasensitive response motifs: basic amplifiers in molecular signalling networks, ***Open Biology*** 3(4): 130031 (2013). [110]

<http://rsob.royalsocietypublishing.org/content/3/4/130031.short>

Q. Zhang, D. E. Kline, S. Bhattacharya, R. B. Crawford, R. B. Conolly, R. S. Thomas, M. E. Andersen and N. E. Kaminski, All-or-none suppression of B cell terminal differentiation by environmental contaminant 2, 3, 7, 8-tetrachlorodibenzo-p-dioxin, ***Toxicology and Applied Pharmacology*** 268(1): 17 (2013). [12]

<http://www.sciencedirect.com/science/article/pii/S0041008X13000367>

M. E. Andersen, P. McMullen and S. Bhattacharya, Toxicogenomics for transcription factor-governed molecular pathways: moving on to roles beyond classification and prediction. ***Archives of Toxicology*** 87(1):7 (2013). [13]

<http://link.springer.com/article/10.1007%2Fs00204-012-0980-6>

S. Bhattacharya, L. K. M. Shoda, Q. Zhang, C. Woods, B. A. Howell, S. Q. Siler, J. L. Woodhead, Y. Yang, P. McMullen, P. B. Watkins and M. E. Andersen, Modeling drug- and chemical- induced hepatotoxicity with systems biology approaches. ***Frontiers in Physiology*** 3:462 (2012). [48]

<http://journal.frontiersin.org/Journal/10.3389/fphys.2012.00462/abstract>

S. Bhattacharya, Q. Zhang and M. E. Andersen, A deterministic map of Waddington's epigenetic landscape for cell fate specification. ***BMC Systems Biology*** 5:85 (2011). [93]

<http://www.biomedcentral.com/1752-0509/5/85>

S. Bhattacharya, Q. Zhang, P. L. Carmichael, K. Boekelheide and M. E. Andersen, Toxicity Testing in the 21st Century: Defining New Risk Assessment Approaches Based on Perturbation of Intracellular Toxicity Pathways. ***PLoS ONE*** 6(6): e20887 (2011). [152]

<http://www.plosone.org/article/info:doi/10.1371/journal.pone.0020887>

S. Bhattacharya, Q. Zhang and M. E. Andersen, Double-negative feedback loops as a common design motif in the transcriptional networks regulating cell fate. ***International Journal of Design Engineering*** 4(1):41-57 (2011).

[http://www.inderscience.com/search/index.php?action=record&rec\\_id=41408](http://www.inderscience.com/search/index.php?action=record&rec_id=41408)

S. Bhattacharya, R. B. Conolly, N. E. Kaminski, R. S. Thomas, M. E. Andersen and Q. Zhang, A Bistable Switch Underlying B Cell Differentiation and Its Disruption by the Environmental Contaminant 2,3,7,8-tetrachlorodibenzo-p-dioxin. ***Toxicological Sciences*** 115(1):51-65 (2010). [30]

<http://toxsci.oxfordjournals.org/cgi/content/short/115/1/51>

Q. Zhang, S. Bhattacharya, D. E. Kline, R. B. Crawford, R. B. Conolly, R. S. Thomas, N. E. Kaminski and M. E. Andersen, Stochastic Modeling of B Lymphocyte Terminal Differentiation and Its Suppression by Dioxin. ***BMC Systems Biology*** 4:40 (2010). [25]

<http://www.biomedcentral.com/1752-0509/4/40>

Q. Zhang, S. Bhattacharya, M. E. Andersen and R. B. Conolly, Computational Systems Biology and Dose-Response Modeling in Relation to New Directions in Toxicity Testing. **Journal of Toxicology and Environmental Health Part B** 13(2):253 (2010). [51]  
<http://www.informaworld.com/smpp/content~db=all~content=a923252202>

S. Bhattacharya and J. Kieffer, Molecular Dynamics Simulation Study of Growth Regimes during Polycondensation of Silicic Acid: from Silica Nanoparticles to Porous Gels, **Journal of Physical Chemistry C** 112 (6), 1764 -1771 (2008). [37]  
<http://pubs.acs.org/doi/abs/10.1021/jp073808f>

S. Bhattacharya and J. Kieffer, Fractal dimensions of silica gels generated using reactive molecular dynamics simulations, **Journal of Chemical Physics** 122, 094715 (2005). [42]  
<http://scitation.aip.org/content/aip/journal/jcp/122/9/10.1063/1.1857522>

### **Invited Book Chapters (Peer-reviewed)**

S. Bhattacharya, Q. Zhang, R. A. Roth and M.E. Andersen, The Role of Computational Systems Biology Models in Toxicity Testing in the 21st Century: an Example with Predictive Multi-Scale Models of the Liver, in **New Horizons in Predictive Toxicology: Current Status and Application**, Wilson A.G.E. (ed.), Royal Society of Chemistry (2012).  
<http://pubs.rsc.org/en/content/chapter/bk9781849730518-00619/978-1-84973-051-8>

S. Bhattacharya, Q. Zhang and M.E. Andersen, The Role of Core Biological Motifs in Dose-Response Modeling: An Example with Switch-Like Circuits, in **Systems Biology in Drug Discovery and Development**, Young D.L. and Michelson S. (ed.), John Wiley & Sons (2011).  
[http://www.wiley.com/WileyCDA/WileyTitle/productCd-0470261234\\_descCd-tableOfContents.html](http://www.wiley.com/WileyCDA/WileyTitle/productCd-0470261234_descCd-tableOfContents.html)

S. Bhattacharya, Q. Zhang and M.E. Andersen, Bistable Signaling Motifs and Cell Fate Decisions, in **Quantitative Modeling in Toxicology**, Krishnan K. and Andersen M.E. (ed.), John Wiley & Sons (2010).  
[http://www.wiley.com/WileyCDA/WileyTitle/productCd-0470998091\\_descCd-tableOfContents.html](http://www.wiley.com/WileyCDA/WileyTitle/productCd-0470998091_descCd-tableOfContents.html)

Q. Zhang, S. Bhattacharya, C.G. Woods and M.E. Andersen, Ultrasensitive Response Motifs in Biochemical Networks, in **Quantitative Modeling in Toxicology**, Krishnan K. and Andersen M.E. (ed.), John Wiley & Sons (2010).  
[http://www.wiley.com/WileyCDA/WileyTitle/productCd-0470998091\\_descCd-tableOfContents.html](http://www.wiley.com/WileyCDA/WileyTitle/productCd-0470998091_descCd-tableOfContents.html)

M.E. Andersen, S. Bhattacharya and W. Hanneman, Molecular Toxicology – A Risk Assessment Perspective, in **Comprehensive Toxicology**, 2<sup>nd</sup> edition, Vol. 2, McQueen C. (ed.), Elsevier Science, Oxford (2010).  
<http://www.elsevierdirect.com/brochures/tox2/content.html>

M.E. Andersen, Q. Zhang and S. Bhattacharya, Gene and Protein Expression – Modeling Nested Motifs in Cellular and Tissue Response Networks, in **Quantitative Modeling in Toxicology**, Krishnan K. and Andersen M.E. (ed.), John Wiley & Sons (2010).  
[http://www.wiley.com/WileyCDA/WileyTitle/productCd-0470998091\\_descCd-tableOfContents.html](http://www.wiley.com/WileyCDA/WileyTitle/productCd-0470998091_descCd-tableOfContents.html)

Q. Zhang, Y.M. Tan, S. Bhattacharya and M.E. Andersen, Computational Systems Biology Modeling of Dosimetry and Cellular Response Pathways, in **Drug Efficacy, Safety, and Biologics Discovery: Emerging Technologies and Tools**, Ekins S. and Xu J.J. (ed.), John Wiley & Sons, Hoboken, New Jersey (2009).  
<http://www3.interscience.wiley.com/cgi-bin/summary/122212402/SUMMARY>

### **Publications in Conference Proceedings**

M. J. McConnell, V. Rao and S. Bhattacharya, Wired by Fire: Preliminary Models to Study Diversity during Neural Development, *Student Papers, Complex Systems Summer School*, Santa Fe, New Mexico, June 8 – July 5, **2003**.

S. Bhattacharya and M. R. Lovell, Comparison between Asperity Deformation and Seizure-Based Friction Models with Application to Machining, *Transactions of NAMRC/SME*, Vol. 28, pp.107-112, May **2000**.

M.R. Lovell, S. Bhattacharya and R. Zeng, Modeling of Orthogonal Machining Processes for Variable Tool-chip Interfacial Friction using Explicit Dynamic Finite Element Methods, *Proceedings of the CIRP International Workshop on Modeling of Machining Operations*, Atlanta, GA, May **1998**.

### **CONFERENCE POSTER PRESENTATIONS**

S. Bhattacharya, Integrating Genomics and Epigenomics into Predictive Toxicology of the Aryl Hydrocarbon Receptor, *American Society for Cellular and Computational Toxicology 7<sup>th</sup> Annual Meeting*, Bethesda, MD, Sep 11, **2018**.

D. Filipovic and S. Bhattacharya, PyPK: A free, open-source cross-platform program for physiologically-based pharmacokinetic (PBPK) modeling, *SOT Annual Meeting*, San Antonio, TX, Mar. 11-15, **2018**.

S. Bhattacharya, N. Shilpa, M. E. Andersen, J. C. Rowlands, R. A. Budinsky and N. E. Kaminski, Beyond the AHRE: the role of epigenomics in gene regulation by the AHR, *SOT Annual Meeting*, Baltimore, MD, Mar. 12-16, **2017**.

S. Bhattacharya, M. E. Andersen, J. C. Rowlands, R. A. Budinsky and N. E. Kaminski, Beyond the AHRE: the role of epigenomics in gene regulation by the AHR, *AHR Conference*, Rochester, NY, Aug. 3-6, **2016**.

S. Bhattacharya, N. Shilpa and M. E. Andersen, A Multi-scale Network Perspective on the Aryl Hydrocarbon Receptor Toxicity Pathway, *SOT Annual Meeting*, New Orleans, LA, Mar. 13-17, **2016**.

S. Bhattacharya, N. Shilpa, R. Kumari, M. Harlacher, P. D. McMullen, M. Black and M. E. Andersen, A Multi-scale Virtual Tissue Model of the Liver Lobule to Assess Zonal Heterogeneity in AhR Adverse Outcome Pathway-induced Biological Responses, *SOT Annual Meeting*, San Diego, CA, Mar. 22-26, **2015**.

S. Bhattacharya, P.D. McMullen, S. Pendse and M. E. Andersen, A multi-scale mechanistic model of TCDD-induced toxicity for assessing expected dose-responses for adverse outcome pathways in liver, *SOT Annual Meeting*, Phoenix, AZ, Mar. 24-27, **2014**.

P. D. McMullen, M. E. Andersen and S. Bhattacharya, A multi-scale dose-response model of AhR toxicity pathway activation in the human liver, *SOT Annual Meeting*, San Antonio, TX, Mar. 10-14, **2013**.

S. Bhattacharya, P. McMullen, C. G. Woods, K. M. Yarborough, A. Efremenko, L. Pluta, P. Lu, J. Dong, J. Pi, R. S. Thomas and M. E. Andersen, A provisional regulatory network of PPAR-mediated transcription in primary human hepatocytes, *Xenobiotic Receptors: 31<sup>st</sup> Summer Symposium in Molecular Biology*, Penn State University, State College, PA, Jul. 22-24, **2012**.

S. Bhattacharya, C. G. Woods, K.M. Yarborough, A. Efremenko, L. Pluta, P. Lu, J. Dong, J. Pi and M. E. Andersen, A provisional regulatory network of PPAR $\alpha$ -mediated transcription in primary human hepatocytes, **Wellcome Trust Functional Genomics and Systems Biology Conference**, Hinxton, UK, Nov. 29 - Dec. 1, **2011**.

Q. Zhang, D. E. Kline, S. Bhattacharya, R. B. Crawford, R. B. Conolly, R. S. Thomas, M. E. Andersen and N. E. Kaminski, Binary Suppression of B Lymphocyte Terminal Differentiation by 2,3,7,8-Tetrachlorodibenzo-p-dioxin, **NIEHS Superfund Research Program Annual Meeting**, Lexington, KY, Oct. 24, **2011**.

Q. Zhang, S. Bhattacharya and M.E. Andersen, A Model of the Transcriptional Network Underlying Hierarchical Cell Lineage Specification and Differentiation, **Keystone Symposium on Stem Cell Differentiation and Dedifferentiation**, Keystone, CO, Feb. 15-20, **2010**.

S. Bhattacharya, D. E. Kline, Q. Zhang, R. B. Crawford, M.E. Andersen, R.B. Conolly and N. E. Kaminski, A Bistable Switch Underlies B Cell Differentiation and Its Disruption by 2,3,7,8-tetrachlorodibenzo-p-dioxin, **NIEHS Superfund Research Program Annual Meeting**, New York, NY, Nov. 2-4, **2009**.

Q. Zhang, S. Bhattacharya, C. Woods, R.B. Conolly and M.E. Andersen, Computational Systems Biology and Dose Response Modeling Workshop, **NIEHS Superfund Basic Research Program Annual Meeting**, Pacific Grove, CA, Dec. 7-9, **2008**.

S. Bhattacharya, R.B. Conolly, M.E. Andersen, N.E. Kaminski, and Q. Zhang, A transcriptional regulatory switch underlying B-cell terminal differentiation and its disruption by dioxin, **9th International Conference on Systems Biology**, Gothenburg, Sweden, August 22-28, **2008**.

Q. Zhang, S. Bhattacharya, D. Schneider, N.E. Kaminski, R. Thomas, M.E. Andersen and R.B. Conolly, A Computational Model of the Impairment of B-cell Terminal Differentiation by 2,3,7,8-tetrachlorodibenzo-p-dioxin, **NIEHS Superfund Basic Research Program Annual Meeting**, Durham, NC, Dec. 3-5, **2007**.

## INVITED & CONFERENCE TALKS

S. Bhattacharya, From near and far: the genomics and epigenomics of AHR-mediated gene regulation, **Genomics@Wayne Seminar**, Wayne State University, Detroit, MI, Oct 9, **2018** (invited).

W. Qi, D. Filipovic and S. Bhattacharya, From near and far: the genomics and epigenomics of AHR-mediated gene regulation, **AHR Meeting**, Paris, France, Aug 30, **2018**.

S. Bhattacharya, Gene Coregulation and Coexpression in the Aryl Hydrocarbon Receptor-mediated Transcriptional Regulatory Network in the Mouse Liver, **Midwest Chromatin & Epigenetics Meeting**, West Lafayette, IN, June 11, **2018**.

S. Bhattacharya, Data science approaches to unravel aryl hydrocarbon receptor signaling, **2018 Northeast Superfund Research Program Meeting**, Woods Hole, MA, Mar 26, **2018** (invited).

S. Bhattacharya, Critical State Transitions: Towards Predictive Systems Toxicology, **Michigan State University Physiology Seminar**, Feb 8, **2018** (invited).

S. Bhattacharya, Integrative Modeling of the Aryl Hydrocarbon Receptor Pathway, **Pharmacology & Toxicology Seminar Series, Boonshoft School of Medicine, Wright State University**, Jan 31, **2018** (invited).

S. Bhattacharya, Regulatory Network Models of Chemical-Induced Gene Perturbation, **Association of Scientists of Indian Origin (ASIO) -SIG SOT Webinar**, Dec. 15, 2017.

S. Bhattacharya, Assembling transcriptional regulatory networks: a case study with the Aryl Hydrocarbon Receptor, **Bioinformatics Research Center and Center for Human Health and the Environment Seminar**, North Carolina State University, Raleigh, NC, Dec. 16, 2016.

S. Bhattacharya, Beyond the AHRE: the role of epigenomics in gene regulation by the AHR, **CRIS Annual Meeting**, Michigan State University, East Lansing, MI, Oct. 5, 2016 (invited).

S. Bhattacharya, A Multi-scale Network Perspective on the Aryl Hydrocarbon Receptor Toxicity Pathway, **The Role of Systems Biology for the Exposome: A Workshop at Georgia Tech**, Atlanta, GA, May 28, 2015 (invited).

S. Bhattacharya, Cellular Differentiation and its Disruption by Toxicants – A Computational Perspective, **Faculty Candidate Seminar, Department of Pharmacology and Toxicology**, Michigan State University, East Lansing, MI, Jun. 19, 2014.

S. Bhattacharya, P. D. McMullen and M. E. Andersen, Mapping nuclear receptor-mediated toxicity pathways in the liver, **One-Day Symposium on “Novel Strategies for Toxicological Risk Assessments”**, Bangalore, India, Sep. 4, 2013 (invited).

S. Bhattacharya, Computational Modeling of Cellular Response to Perturbation, **Biomathematics Seminar Series**, NC State University, Raleigh, NC, Apr 18, 2013.

S. Bhattacharya, P. McMullen, C. G. Woods, K.M. Yarborough, A. Efremenko, L. Pluta, P. Lu, J. Dong, J. Pi and M. E. Andersen, A provisional regulatory network of PPAR $\alpha$ -mediated toxicity pathways in primary human hepatocytes, **North Carolina Society of Toxicology Spring Meeting**, Research Triangle Park, NC, February 23, 2012 (invited).

S. Bhattacharya, Q. Zhang and M. E. Andersen, Stochasticity in Gene Expression and its Implication for Dose Response, **Continuing Education Course on Applications of Computational Systems Biology for Toxicology, SOT Annual Meeting**, Washington DC, Mar. 6, 2011.

S. Bhattacharya and J. Kieffer, Growth, structure, and fractal scaling in silica gels produced by polymerization of aqueous silicic acid, **American Institute of Chemical Engineers Annual Meeting**, San Francisco, CA, Nov. 12-17, 2006.

S. Bhattacharya and J. Kieffer, The Effect of Solvent and Precursor Functionalization on the Fractal Dimension and Physical Properties of Sol-Gel derived Silica, **American Physical Society March Meeting**, Los Angeles, CA, Mar. 21-25, 2005.

S. Bhattacharya, F. Qi, J. Zhou and J. Kieffer, Effect of Precursor Functionalization on Sol-Gel derived Silica Network Structures, **Materials Research Society Fall Meeting**, Boston, MA, Nov. 29 - Dec. 3, 2004.

S. Bhattacharya and J. Kieffer, Multi-Scale Simulation of Sol-Gel Condensation Reactions, **American Institute of Chemical Engineers Annual Meeting**, Austin, TX, Nov. 7-12, 2004.

S. Bhattacharya, L. Huang and J. Kieffer, Structure and Dynamics of Fractal Silica Networks, **American Physical Society March Meeting**, Montreal, Canada, Mar. 22-26, 2004.

S. Bhattacharya, L. Huang and J. Kieffer, Pore Structure and Physical Properties of Simulated Silica Gels, **Materials Research Society Fall Meeting**, Boston, MA, Dec. 1-5, 2003.



## PROFESSIONAL MEMBERSHIPS

Member, Society of Toxicology, International Society for Computational Biology, American Association for the Study of Liver Diseases (*Current*).

Member, American Physical Society, Materials Research Society (*Past*).

President, Michigan-Society of Toxicology, 2018-2019.

## REFERENCES

### **Dr. Christopher H. Contag**

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