

**Yi Jiang**  
Frady Whipple Professor  
Department of Mathematics and Statistics  
College of Arts & Sciences  
Georgia State University, Atlanta, GA 30303  
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## **EDUCATION**

- Ph.D. 1998.    Physics, University of Notre Dame, IN, USA  
Advisor: James A Glazier
- B.S. 1993.    Physics, University of Science and Technology of China, Hefei, China  
Advisors: Chaoshu Shi (Physics) & Dazhi Wang (Materials Science)

## **APPOINTMENTS**

- 2022-        The Inaugural Frady Whipple Professor of Mathematics, Department of  
Mathematics and Statistics, Georgia State University, Atlanta, GA
- 2019-        Professor, Department of Mathematics and Statistics, Georgia State University,  
Atlanta, GA
- 2018-2019    Graduate Director, Department of Mathematics and Statistics, Georgia State  
University, Atlanta, GA
- 2016-2019    Associate Professor (with tenure), Department of Mathematics and Statistics,  
Georgia State University, Atlanta, GA
- 2011-2016    Associate Professor (without tenure), Department of Mathematics and Statistics,  
Georgia State University, Atlanta, GA
- 2000-2012    Technical Staff Member (Scientist III), Theoretical Division, Los Alamos  
National Laboratory, Los Alamos, NM
- 1998-2000    Postdoctoral Research Associate, Theoretical Division, Los Alamos National  
Laboratory, Los Alamos, NM

## **CONCURRENT APPOINTMENTS**

- 2023 -        Visiting Scholar, Isaac Newton Institute for Mathematical Sciences, Cambridge  
University, UK
- 2023 -        Adjunct Professor, Department of Physics and Astronomy, Georgia State  
University, Atlanta GA
- 2017 -        Founder and President, Precision MedCare Inc., a startup company for AI  
biomedical solutions.
- 2010 -        Affiliate Member, Cancer Cell Biology Program, Winship Cancer Institute,  
Emory University, Atlanta GA
- 2008 -        Affiliate Member, Emory Eye Center, Emory University, Atlanta GA
- 2005 -        Adjunct Professor, School of Computer Sciences and Engineering, South China  
University of Technology, Guangzhou, China
- 2011-2018    Affiliate Member, The New Mexico Center for the Spatiotemporal Modeling of  
Cell Signaling, NM
- 2008-2011    Adjunct Associate Professor, Department of Physics, Emory University,

Yi Jiang

Atlanta, GA  
2005-2010 Adjunct Associate Professor, Department of Mathematics, University of Notre Dame, Notre Dame, IN  
2008-2009 Visiting Scientist, Integrative BioSystems Institute, Georgia Institute of Technology, Atlanta, GA  
2001-2011 Affiliate, Center for Nonlinear Studies, Los Alamos National Lab, Los Alamos, NM  
1996-1999 Consultant (part time), IOTA, Inc. Delaware  
1995-1997 (Summers) Graduate Research Assistant, Los Alamos National Laboratory, Los Alamos, NM

## RESEARCH SUPPORT

### Current

- PI, NIH/NEI/1R01EY028450, 2018-2023, \$1,635,722 (MPI: John Nickerson, Yi Jiang, Jeffery Boatright, Hans Grossniklaus, Jun Kong)  
“The RPE and Restoration of the Blood Retina Barrier”
- Co-PI, Alfred P. Sloan Foundation, 2022-2024, \$500,000 (PI: Kyle Frantz)  
“Math Path Program”
- Co-PI, RISE Challenge, Georgia State University, 2022-2023, \$300,000 (PI: Stuart Jefferies)

### Completed

- PI, Georgia Research Alliance Venture Fund, 2018-2022, \$50,000  
“Precision MedCare: Noninvasive detection of liver fibrosis”
- Co-I (Consortium PI), NIH/NCI/R01CA201340, 2015-2020, \$1,700,000 (PI: Adam Marcus & Gilbert-Ross)  
“Defining Early Escape Strategies in LKB1 Mutant Lung Cancer”
- PI, GSU-MBD Seed Grant, 2020, \$25,000  
“Determine the Morphological Signature of Cancer Invasiveness”
- PI, NIH/NCI 1U01CA143069-01A1, 2011-2017, \$1,800,000 (Multiple PI: Alissa Weaver, Yi Jiang & Patricia Keely)  
Multiscale modeling of extracellular matrix-tumor interactions
- PI, Georgia State University Conference Grant, 2015, \$1,000  
SMB2015: Annual Conference for Society for Mathematical Biology
- Co-PI, UGA Teacher Quality:GStateU 1, 2014-2015, \$43,631 (PI: Iman Chahine)  
Scaffolding Mathematics & Science Teachers
- Co-PI, UGA Teacher Quality:GStateU 5, 2013-2014, \$43,748 (PI: Iman Chahine, Yi Jiang, Marianan Montiel)  
Building High School Teachers Capacity to Teach Mathematical Modeling Using Technology-Supported Simulations
- PI, Georgia State University-Research Initiative Grant, 2012-2013, \$10,000  
Understanding the dynamics of invasive tumor growth
- PI, CNSF/61070092, 2011-2014, \$600,000 (Multiple PI: Shoubin Dong, Yi Jiang)  
High Performance Finite Element Method for Tumor Growth
- PI, NIH/NIGMS/2R13GM082162-03, 2011-2013, \$150,000 (Multiple PI: Robert Ecke,

- William Hlavacek, Yi Jiang, Ilya Nemenman, and Michael Wall)  
Information processing in cellular signaling and gene regulation
- Co-PI, DOE/LANL/LDRD/20110189ER, 2010-2013, \$1,050,000 (PI: Charles Reichhardt)  
Modeling Topotaxis: Getting Bacteria and Cells to Do Work with Microfabricated Topologies
  - PI, IAS/Los Alamos, 2009-2010, \$30,000  
Physics of Cancer Seminar and Lecture Series
  - PI, Emory Neuroscience Initiative Interdisciplinary Seed Grant, 2009-2010, \$25,000 (Multiple PI: Yi Jiang, John Nickerson, Hans Grossniklaus)  
From Retina Pigmented Epithelium Morphology to Age-related Macular Degeneration
  - Co-PI, DOE/LANL/LDRD/20100027DR, 2009-2012, \$4,500,000 (PI: Rashi Iyer)  
Transformative Capability for Bioassessment of Engineered Nanomaterials
  - Co-I (Consortium PI), NIH/NCI/2R01CA119232-04, 2009-2013, \$1,800,000 (PI: Bridget Wilson)  
MSM Mapping and Modeling ErbB Receptor Membrane Topography
  - PI, UC-Lab: 09-LR-04-118348-IRU, 2009-2012, \$1,317,646 (Multiple PI: Luisa Iruela-Arispe & Yi Jiang)  
Modeling of Pathological and Developmental Angiogenesis
  - PI, UC-Lab: 09-LR-02-117912-TANG, 2009-2010, \$100,000 (Multiple PI: Chao Tang & Yi Jiang)  
Quantitative study of cell cycle regulation: From yeast to human cancer
  - Co-PI, NSF/DMS-0800612, 2008-2011, \$864,000 (PI: Mark Alber)  
Integrating Multiscale Modeling and in vivo Experiments for Studying Blood Clot Development
  - PI, NIH /NIGMS/R13GM082162-01A1, 2009-2011, \$180,000 (Multiple PI: William Hlavacek, Yi Jiang, Ilya Nemenman, and Michael Wall)  
Information processing in cellular signaling and gene regulation
  - Co-PI (LANL Consortium PI), NIH/NHL/2R01 HL068855-07A1, 2008-2009, \$1,280,000 (PI: Charles Little)  
Computational Biology of Vascular Cell Behavior
  - Co-PI, DOE/LANL/LDRD/20080716ER, 2007-2008, \$330,000 (PI: Hans Ziock)  
Coupling of Genetics and Metabolism and the Origin of Life
  - Co-PI, NSF/CCF/0622940, 2006-2009, \$300,000 (PI: Jesus Izaguirre)  
CompBio: Simulation of self-emerging properties of coupled biochemical and cellular networks in social behavior of Myxobacteria
  - PI, DOE/LANL/LDRD/ 20060322ER, 2006-2009, \$1,020,012  
Understanding a Killer: Predictive Modeling of Tumor Development
  - PI, DOE/LANL/LDRD/PD, 2005-2006, \$10,000  
Program Development for Multiscale Modeling of Immune System
  - Co-PI, DOE, 2005, \$15,000 (PI: Mark Alber)  
Workshop on Applications of Methods of Stochastic Systems and Statistical Physics in Biology
  - Co-PI, NSF/DMS/0517864, 2005, \$25,000 (PI: Mark Alber)  
Workshop on Applications of Methods of Stochastic Systems and Statistical Physics in

Biology

- PI, DOE/LANL/LDRD-Supplemental Fund, 2005-2006, \$41,000  
Harvey Mudd Math Clinic on Modeling Cancer Chemotherapy
- Co-PI, DOE/LANL/LDRD/DR, 2005-2008, \$4,500,000 (PI: Steen Rasmussen)  
Protocell Assembly
- Co-PI, DOE/LANL/LDRD/DR, 2003-2006, \$3,600,000 (PI: Andrew Shreve)  
Interfacial Energy and Charge Transfer in Multifunctional Bio-Inspired Nano-Assemblies
- Co-PI, DOE/LANL/LDRD/ER, 2001-2004, \$750,000 (PI: Antonio Redondo)  
Bone Morphogenesis and Regulation by External Fields

**HONORS AND AWARDS**

- 2022 The Inaugural Frady Whipple Chaired Professor, Georgia State University,
- 2022 Plenary Speaker, SIAM (Society of Industrial and Applied Mathematics)-Life Sciences, Pittsburgh, PA
- 2020 Outstanding Math & Stat Service Award, Georgia State University
- 2019 Outstanding Math & Stat Research Award, Georgia State University
- 2016 Dissertation Award, Georgia State University (Mentee: Xiuxiu He)
- 2015 Outstanding Math & Stat Research Award, Georgia State University
- 2014 Keynote Speaker, Scientific Computing Around Louisiana, Louisiana State University, Baton Rouge, LA.
- 2009 Plenary Speaker, Mathematical Modeling in the Medical Sciences, Annual Shanks Conference and Lecture, Vanderbilt University, TN.
- 2006 Topical Speaker, SIAM (Society of Industrial and Applied Math) Annual Meeting, Boston, MA
- 2004 Outstanding Mentor Award, Los Alamos National Laboratory
- 1994 Gordon Travel Award, University of Notre Dame
- 1992 The People's Scholarship, University of Science and Technology of China
- 1991 The People's Scholarship, University of Science and Technology of China

**PUBLICATIONS**

**Patents** (*mentees in italic*)

1. “Noninvasive Methods for Detecting Liver Fibrosis” Yi Jiang, *Hao Chen, Sergey Klimov, Bin Zhang*, U.S. Patent No. 11,576,609. CN Patent No. ZL201880030162.6.
2. “Predicting DCIS Recurrence Risk Using Machine Learning-Based High Content Image Analysis Approach” *Sergey Klimov*, Yi Jiang, Arkadiusz Gertych, PCT/US 17/415,260, Pending

**Refereed Journals** (*mentee in italic*)

1. Haoran Ni, Qin Ni, Garegin A. Papoian, Andreea Trache, **Yi Jiang**. Myosin and  $\alpha$ -actinin regulation of stress fiber contractility under tensile stress. *Scientific Reports*, 13, 8662. <https://doi.org/10.1038/s41598-023-35675-7> (2023)
2. Darquenne C, Borojeni AAT, Colebank MJ, Forest MG, Madas BG, Tawhai M, **Jiang Y**. Aerosol Transport Modeling: The Key Link Between Lung Infections of Individuals and Populations. *Front Physiol.* 13:923945. doi: 10.3389/fphys.2022.923945 (2022).
3. *Qiang Li*, Fusheng Wang, Yaobing Chen, *Hao Chen*, Shengdi Wu, Alton B. Farris, **Yi**

- Jiang, Jun Kong.** Virtual liver needle biopsy from reconstructed three-dimensional histopathological images: Quantification of sampling error. *Computers in Biology and Medicine.* 147, 105764, doi:10.1016/j.combiomed.2022.105764 (2022).
4. *Xiuxiu He, Byoungkoo Lee, and Jiang, Yi.* Extracellular matrix in cancer progression and therapy. *Medical Review*, 2: 125-139. doi: 10.1515/mr-2021-0028 (2022).
  5. *Anthony Morciglio, Bin Zhang, Gerardo Chowell-Punte, James M Hyman, Yi Jiang.* Mask-matics: Modeling the Effects of Masks in COVID-19 Transmission in High-Risk Environments. *Epidemiologia.* 2 207-226. doi: 10.3390/epidemiologia2020016 (2021).
  6. *Vedula P, Kurosaka S, MacTaggart B, Ni Q, Papoian G, Jiang Y, Dong DW, Kashina A.* Different translation dynamics of  $\beta$ - and  $\gamma$ -actin regulates cell migration. *elife.* 24;10:e68712. doi: 10.7554/eLife.68712. (2021).
  7. *Karina I Mazzitello, Yi Jiang, Constancio M Arizmendi.* Optimising SARS-CoV-2 pooled testing strategies on social networks for low-resource settings. *J Phys A.: Math. Theor.* 54, 294002 (2021).
  8. *Hongxiao Li; Hanyi Yu; Yong-Kyu Kim; Fusheng Wang; George Teodoro; Yi Jiang; John M. Nickerson; Jun Kong.* Computational Model-Based Estimation of Mouse Eyeball Structure From Two-Dimensional Flatmount Microscopy Images. *Translational Vision Science & Technology.* Vol.10, 25. doi:10.1167/tvst.10.4.25 (2021).
  9. *Yong-Kyu Kim; Hanyi Yu; Vivian R. Summers; Kevin J. Donaldson; Salma Ferdous; Debresha Shelton; Nan Zhang; Micah A. Chrenek; Yi Jiang; Hans E. Grossniklaus; Jeffrey H. Boatright; Jun Kong; John M. Nickerson.* Morphometric Analysis of Retinal Pigment Epithelial Cells From C57BL/6J Mice During Aging. *Investigative Ophthalmology & Visual Science (IOVS)* Vol.62, 32. Doi:10.1167/iovs.62.2.32 (2021).
  10. *Sergey Klimov, Yue Xue, Arkadiusz Gertych, Rondell P. Graham, Yi Jiang, Shristi Bhattarai, Stephen J. Pandol, Emad A. Rakha, Michelle D. Reid and Ritu Aneja.* Predicting Metastasis Risk in Pancreatic Neuroendocrine Tumors Using Deep Learning Image Analysis. *Front. Oncol.* doi: 10.3389/fonc.2020.593211 (2021).
  11. *Xiaona Li, Qin Ni, Xiuxiu He, Jun Kong, Soon-Mi Lim, Garegin A. Papoian, Jerome P. Trzeciakowski, Andreea Trache and Yi Jiang.* Tensile Force-Induced Cytoskeletal Remodeling: Mechanics Before Chemistry. *PLoS Computational Biology.* doi.org/10.1371/journal.pcbi.1007693 (2020).
  12. *Yuke Wang, Christine L. Moe, Shanta Dutta, Ashutosh Wadhwa, Suman Kanungo, Wolfgang Mairinger, Yichuan Zhao, Yi Jiang, and Peter FM. Teunis.* Designing a typhoid environmental surveillance study: A simulation model for optimum sampling site allocation. *Epidemics.* 31: 100391. doi:10.1016/j.epidem.2020.100391 (2020).
  13. *Suzanne Bock, Douglas G. Hoffmann, Yi Jiang, Hao Chen, Dora Il'yasova.* Increasing Incidence of Liposarcoma: A population-based study of national surveillance databases, 2001-2016. *International Journal of Environmental Research and Public Health.* 17(8): E2710. DOI: 10.3390/ijerph17082710 (2020)
  14. *Du Pont V, Jiang Y, Plemper RK.* Bipartite interface of the measles virus phosphoprotein X domain with the large polymerase protein regulates viral polymerase dynamics. *PLoS Pathog* 15(8): e1007995. doi: 10.1371/journal.ppat.1007995 (2019).
  15. *Ling Xu and Yi Jiang.* Mathematical Modeling of Mucociliary Clearance: A Mini-Review. *Cells.* 8(7), 736. doi:10.3390/cells8070736 (2019).
  16. *Sergey Klimov, Islam M. Miligy, Arkadiusz Gertych, Yi Jiang, Michael S. Toss, Padmashree Rida, Ian O. Ellis, Andrew Green, Uma Krishnamurti, Emad A. Rakha and*

- Ritu Aneja. A whole slide image-based machine learning approach to predict ductal carcinoma in situ (DCIS) recurrence risk. *Breast Cancer Research* 21:83 doi:10.1186/s13058-019-1165-5 (2019)
17. KJ Donaldson, Wu WF, Skelton H, Markand S, Ferdous S, Sellers J, Chrenek MA, Gefke I, Kim SM, Rha J, Liao KL, Grossniklaus HE, **Jiang Y**, Kong J, Boatright JH, Nickerson JM. Analysis of Damage and Wound Healing in the Retinal Pigmented Epithelium. *Adv Exp Med Biol.* 2019;1185:425-430. doi: 10.1007/978-3-030-27378-1\_70 (2019)
  18. Karina I Mazzitello, Jose L Iguain, **Yi Jiang**, Fereydoon Family, and C Miguel Arizmendi, A new formulation of heat dissipation in a rocking Buttiker-Landauer ratchet model. *Journal of Physics: Conf. Series* 1290: 012022. doi:10.1088/1742-6596/1290/1/012022 (2019)
  19. Qing Zhang, Micah A. Chrenek, Shagun Bhatia, Alia Rashid, Salma Ferdous, Kevin Donaldson, Henry Skelton, Wenfei Wu, Thonnie Rose O. See, **Yi Jiang**, Nupur Dalal, John M. Nickerson, Hans E. Grossniklaus. Comparison of histologic findings in age-related macular degeneration with RPE flatmount images. *Molecular Vision.* 25: 70-78 (2019).
  20. *Eszter Szalai*, **Yi Jiang**, Natasha M. van Poppelen, Martine J. Jager, Annelies de Klein, Emine Kilic, Hans E. Grossniklaus. Uveal Melanoma Metastatic Rate is Relative to Stochastic Mutation Rate and Type of Mutation. *JAMA Ophthalmology.* doi:10.1001/jamaophthalmol.2018.2986 (2018)
  21. *Xiuxiu He*, and **Yi Jiang**. Substrate Curvature Regulates Cell Migration. *Physical Biology* 14: 035006 (2017).
  22. Semir Sarajlic, Nieranjan Edirisinghe, Yubao Wu, **Yi Jiang**, and Gregori Faroux. Training-based Workforce Development in Advanced Computing for Research and Education (ACoRE). In *Proceedings of the Practice and Experience in Advanced Research Computing 2017 on Sustainability, Success and Impact (PEARC17)*. ACM, New York, 71. DOI: <https://doi.org/10.1145/3093338.3104178> (2017)
  23. *Byoungkoo Lee*, Jessica Konen, Scott Wilkinson, Adam I Marcus, and **Yi Jiang**. Local alignment vectors reveal cancer cell-induced ECM fiber remodeling dynamics. *Scientific Reports* 7: 39498 (2017).
  24. Shoubin Dong, *Zetao Huang*, Liqun Tang, Xiaoyang Zhang, Yongrou Zhang, and **Yi Jiang**. A three-dimensional collagen-fiber network model of the extracellular matrix for the simulation of the mechanical behaviors and micro structures. *Computer Methods in Biomechanics and Biomedical Engineering.* 20: 991-1003 (2017)
  25. Jessica Konen, Scott Wilkinson, *Byoungkoo Lee*, Wei Zhou, **Yi Jiang**, Adam I. Marcus. LKB1 kinase-dependent and -independent defects disrupt polarity and adhesion signaling to drive collagen remodeling during invasion. *Molecular Biology of the Cell.* mbc.E15-08-0569 (2016).
  26. SK Bhatia, *A Rashid*, MA Chrenek, Q Zhang, BB Bruce, M Klein, JH Boatright, **Y Jiang**, HE Grossniklaus, JM Nickerson. Analysis of RPE morphometry in human eyes. *Molecular Vision.* 22:898-916 (2016).
  27. *Xiuxiu He*, *Byoungkoo Lee*, and **Yi Jiang**. Cell-ECM Interactions in Tumor Invasion. *Advances in Experimental Medicine and Biology.* 936:73-91 (2016).
  28. *A Rashid*, SK Bhatia, KI Mazzitello, MA Chrenek, Q Zhang, JH Boatright, HE Grossniklaus, **Y Jiang**, JM Nickerson. RPE Cell and Sheet Properties in Normal and Diseased Eyes. *Advances in Experimental Medicine and Biology.* 854:757-63.

- doi:10.1007/978-3-319-17121-0\_101 (2016).
29. *Kimberly Kanigel Winner*, Mara P. Steinkamp, Rebecca Lee, Maciej Swat, Carolyn Muller, Melanie Moses, **Yi Jiang** and Bridget S. Wilson. Spatial model of drug delivery route for treatment of disseminated ovarian cancer. *Cancer Research*. doi: 10.1158/0008-5472.CAN-15-1620 (2015).
  30. Deyu Tang, Shoubin Dong, **Yi Jiang**, Huan Li, Yishuan Huang. ITGO: Invasive tumor growth optimization algorithm. *Applied Soft Computing*, 36: 670-698 (2015).
  31. Shun Xu, Xin Zhou, **Yi Jiang**, and Yanting Wang. Fast Adaptive Flat-histogram Ensemble to Enhance the Sampling in Large Systems. *Science China Physics, Mechanics & Astronomy*. 58:590501. DOI: 10.1007/s11433-015-5690-7 (2015).
  32. Shoubin Dong, Yannan Yan, Liqun Tang, *Junping Meng*, and **Yi Jiang**. Simulation of 3D tumor cell growth by using nonlinear finite element method. *Computer Methods in Biomechanics and Biomedical Engineering*. 19: 807-818 DOI: 10.1080/10255842.2015.1065319 (2015).
  33. *Ling Xu* and **Yi Jiang**, Cilium Height Difference Between Strokes is More Effective in Driving Fluid Transport in Mucociliary Clearance: A Numerical Study, *Mathematical Biology and Engineering*. DOI:10.3934/mbe.2015.12.1107 (2015).
  34. Deyu Tang, Shoubin Dong, Lifang He, and **Yi Jiang**, Intrusive tumor growth inspired optimization algorithm for data clustering, *Neural Computing and Applications*, DOI:10.1007/s00521-015-1849-4 (2015).
  35. Jeffrey H. Boatright, Nupur Dalal, Micah A. Chrenek, Christopher Gardner, Alison Ziesel, **Yi Jiang**, Hans E. Grossniklaus, and John M. Nickerson, Methodologies for analysis of patterning in the mouse RPE sheet. *Molecular Vision*. 21: 40-60 (2015).
  36. Kristin M. Riching, Benjamin Cox, Max Salick, Carolyn Pehlke, Benjamin R. Bass, Kevin Eliceiri, Wendy Crone, **Yi Jiang**, Alissa Weaver, and Patricia J. Keely, 3D Collagen Alignment Limits Protrusions to Enhance Breast Cancer Cell Persistence, *Biophysical Journal*. 107: 2546-2558 (2014).
  37. *Byoungkoo Lee*, Xin Zhou, Kristin Riching, Kevin W Eliceiri, Patricia J. Keely, Alissa Weaver, **Yi Jiang**, A three-dimensional computational model of collagen network mechanics, *PLoS One*. 9: e111896 (2014).
  38. Shoubin Dong, Zhou Long, Liqun Tang, **Yi Jiang**, Yannan Yan. Simulation of Growth and Division of 3D Cells Based on Finite Element Method. *International Journal of Applied Mechanics*. DOI: 10.1142/S1758825114500410 (2014).
  39. *Junping Meng*, Shoubin Dong, Liqun Tang, **Yi Jiang**, A Hybrid Mathematical Model of Tumor-induced Angiogenesis with Blood Perfusion, *Tsinghua Science and Technology*, 19: 648-657 (2014).
  40. **Yi Jiang**, Xin Qi, Hans E. Grossniklaus, Micah A. Chrenek, John M. Nickerson, Christopher Gardner, Nupur Dalal, Jeffrey H. Boatright. Analysis of Mouse RPE Sheet Morphology Gives Discriminatory Categories. *Advances in Experimental Medicine and Biology*. *Advances in Experimental Medicine and Biology*. 801: 601-7 (2014).
  41. **Yi Jiang**, Xin Qi, Micah Chrenek, Christopher Gardner, Jeffrey Boatright, Hans Grossniklaus, and John Nickerson, Functional Principal Component Analysis Reveals Discriminating Categories of Retinal Pigment Epithelial Morphology in Mice. *Investigative Ophthalmology & Visual Science (IOVS)* 54:7274-7283 (2013).
  42. Mara P. Steinkamp, *Kimberly Kanigel Winner*, Suzy Davies, Carolyn Muller, Yong Zhang, Robert M. Hoffman, Abbas Shirinifard, Melanie Moses, **Yi Jiang** and Bridget S.

- Wilson, Ovarian tumor attachment, invasion, and vascularization reflect unique microenvironments in the peritoneum: insights from xenograft and mathematical models. *Frontiers in Oncology*. 3:97. DOI:10.3389/fonc.2013.00097 (2013).
43. Abbas Shirinifard, James Alexander Glazier, Maciej Swat, J. Scott Gens, Fereydoon Family, **Yi Jiang**, Hans E. Grossniklaus, Adhesion Failures Determine the Pattern of Choroidal Neovascularization in the Eye: A Computer Simulation Study, *PLoS Computational Biology*. 8: e1002440 (2012).
  44. Micah A. Chrenek, *Nupur Dalal*, Christopher Gardner, Hans E. Grossniklaus, **Yi Jiang**, Jeffery H. Boatright, and John M. Nickerson, Analysis of the RPE sheet in the rd10 retinal degeneration model. *Advances in Experimental Medicine and Biology*. 723: 641-647 (2012).
  45. *Yilin Wu*, Yi Jiang, Dale Kaiser, and Mark Alber, Self-organization in bacterial swarming: Lessons from Myxobacteria. *Physical Biology*. 8: 055003 (2011).
  46. S.A. Jones, B. Dollet, N. Slosse, **Y. Jiang**, S.J. Cox, and F. Graner. Two-dimensional constriction flows of foams, *Colloids and Surfaces A*, 382: 18-23 (2011).
  47. *A. L. Bauer*, T. L. Jackson, **Y. Jiang**, and T. Rohlf, Receptor cross-talk in angiogenesis: Mapping environmental cues to cell phenotype using a stochastic, Boolean signaling network model, *Journal of Theoretical Biology*, 264: 838-46 (2010).
  48. Shoubin Dong, Xin Kong, Liqun Tang, Jie Wu, and **Yi Jiang**, A parallel computing framework for a tumor growth FEM Simulation. *Acta Mechanica Solida Sinica*. 23: 189-194 (2010).
  49. *Kejing He*, **Yi Jiang** and Shoubin Dong, A Hybrid Parallel Framework for the Cellular Potts Model Simulations, 15th International Conference on Parallel and Distributed Systems ICPADS, 624-631 (2009).
  50. *Amy L. Bauer*, Trachette. L. Jackson, and **Yi Jiang**, Topography of Extracellular Matrix Mediates Vascular Morphogenesis and Migration Speeds, *PLoS Computational Biology*. 5: e1000445 (2009).
  51. *Yilin Wu*, Dale A Kaiser, **Yi Jiang**, and Mark Alber, Periodic reversal of direction allows Myxobacteria to swarm. *Proceedings of National Academy of Sciences USA*. 106: 1222-1227 (2009).
  52. Juan Restrepo, Rustom Choksi, James M. Hyman and **Yi Jiang**, Improving the Damage Accumulation in a Biomechanical Bone Remodeling Model, *Computer Methods Biomechanics and Biomedical Engineering*. 12: 341-52 (2009).
  53. *Xin Zhou*, **Yi Jiang**, Steen Rasmussen, and Hans Ziock, A method to bridge different-level coarse-grained models: Jump-in-sample simulations, *Journal of Chemical Physics*. 128: 174107-1-7 (2008).
  54. *Powel Weroniski*, **Yi Jiang**, and Steen Rasmussen, Application of Molecular dynamics computer simulations in the design of a minimal self-replicating molecular machine. *Complexity*. 13: 10-17 (2008).
  55. *Yilin Wu*, **Yi Jiang**, Dale A. Kaiser, and Mark Alber, Social Interactions in Myxobacterial Swarming, *PLoS Computational Biology*. 3: e253 (2007).
  56. *Xin Zhou* and **Yi Jiang**, A general long-time molecular dynamics scheme in atomistic systems: Hyperdynamics in entropy dominated systems, *Lecture Notes in Computer Science*. 4487:826-833 (2007).
  57. **Yi Jiang**, A multiscale, cell-based framework for modeling cancer development, *Lecture Notes In Computer Science*. 4487: 770-777 (2007).



58. *B. Dollet, C. Raufaste, S. J. Cox, F. Graner and Y. Jiang*, Yield drag in a two-dimensional foam flow around a circular obstacle: the role of fluid fraction. *European Physical Journal E*. 23: 217-228 (2007).
59. *A. L. Bauer, T. L. Jackson, and Y. Jiang*, A Cell-Based Model Exhibiting Branching and Anastomosis During Tumor-Induced Angiogenesis, *Biophysical Journal*. 92: 3105-3121 (2007).
60. *Powel Weronki, Yi Jiang*, and Steen Rasmussen, Molecular Dynamics Studies of PNA Partitioning in Lipid Bilayers, *Biophysical Journal*. 92: 3081-3091 (2007).
61. Olga Sozinova, **Yi Jiang**, Dale A. Kaiser, and Mark Alber, A three-dimensional model of myxobacterial fruiting body formation, *Proceedings of National Academy of Sciences USA*. 103: 17255-17259 (2006).
62. *Y. Wu, N. Chen, M. Rissler, Y. Jiang, D. Kaiser, and M. Alber*, CA Models of Myxobacterial Swarming, *Lecture Notes in Computer Science: Theoretical Computer Science and General Issues*. 4173: 192-203 (2006).
63. *X. Zhou, Y. Jiang, K. Kramer, S. Rasmussen, and H. Ziock*, Hyperdynamics for entropic systems: Time-space compression and pair correlation function approximation. *Physical Review E. Rapid Communication*. 74: 035701(R), (2006).
64. **Y. Jiang**, O. Sozinova, and M. Alber, The collective behaviors of Myxobacteria. *Advances in Complex Systems*. 9: 353-368 (2006).
65. **Y. Jiang**, Understanding a killer: A predictive model for tumor development, *Contemporary mathematics*. 410: 173-185 (2006).
66. **Y. Jiang**, *J. Pjesivac-Grbovic, C. Cantrell*, and J. Freyer, A Multiscale Model for Avascular Tumor Growth. *Biophysical Journal*. 89: 3873-3883 (2005).
67. O. Sozinova, **Y. Jiang**, D. Kaiser, and M. Alber, Directing myxobacterial aggregation by cell-contact signals: A Three-Dimensional Model, *Proceedings of National Academy of Sciences USA*. 102: 11308-11312 (2005).
68. *M. A. Kiskowski, Y. Jiang*, and M. S. Alber, Role of streams in Aggregation Formation in Myxobacteria. *Physical Biology*. 1: 173-183 (2004).
69. M. S. Alber, *M. A. Kiskowski*, and **Y. Jiang**, Two-Stage Aggregate Formation via Streams in Myxobacteria, *Physical Review Letters*. 93: 068102 (2004).
70. M. S. Alber, **Y. Jiang**, and *M. A. Kiskowski*. Lattice Gas Cellular Automata Model For Rippling in Myxobacteria. *Physica D*, 191: 343-358 (2004).
71. M. Aubouy, **Y. Jiang**, J.A. Glazier, and F. Graner, A texture tensor to quantify deformations. *Granular Matter*. 5: 64-70 (2003).
72. M. Asipauskas, M. Aubouy, J. A. Glazier, F. Graner and **Y. Jiang**, A texture tensor to quantify deformations: the example of two-dimensional flowing foams. *Granular Matter*. 5: 71-76 (2003).
73. R. B. Silver and **Y. Jiang**, New insights on secretion from imaging calcium microdomains and molecular dynamics (MD) modeling, *FASEB Journal*. 16, A726 (2002).
74. F. Graner, **Y. Jiang**, E. Janiaud, and C. Flament, Equilibrium states and ground state of 2D fluid foams. *Physical Review E*. 6301: 011402 (2001).
75. **Y. Jiang**, T. Lookman, A. Saxena, and J. F. Douglas, Influence of filler particles and cluster geometry on phase-separating polymer blends, *MRS Boston 2000*, 661, pp. kk8.5.1. (2000).
76. **Y. Jiang**, T. Lookman, and A. Saxena, Phase Separation and Shape Deformation on a

- Two-Phase Membrane, *Physical Review E Rapid Communications*. 61: R57-R60 (2000).
77. **Y. Jiang**, P. Swart, A. Saxena, M. Asipauskas, and J. A. Glazier, Hysteresis and Avalanches in Two Dimensional Foam Rheology Simulations. *Physical Review E*. 59: 5819-5832 (1999).
  78. F. Elias, C. Flament, J. A. Glazier, F. Graner, and **Y. Jiang**, Foams Out of Stable Equilibrium: Cell Elongation and Side Swapping, *Philosophical Magazine B*. 79: 729-751 (1999).
  79. **Y. Jiang**, H. Levine, and J. A. Glazier, Possible Collaboration of Differential Adhesion and Chemotaxis Cooperate in Mound Formation of Dictyostelium. *Biophysical Journal*. 75: 2615-2625 (1998).
  80. **Y. Jiang** and J. A. Glazier, Foam Drainage: Extended Large-Q Potts Model Simulation and a Mean Field Theory, *Proceedings of MRS Boston 1996*, 463: 307-314 (1997).
  81. **Y. Jiang** and J. A. Glazier, Extended Large-Q Potts Model Simulation of Foam Drainage, *Philosophical Magazine Letters*. 74, 119-128 (1996).
  82. **Y. Jiang**, J. C. M. Mombach, and J. A. Glazier, Grain Growth From Homogeneous Initial Conditions: Anomalous Grain Growth and Special Scaling States. *Physical Review E Rapid Communication*. 52: R3333-R3336 (1995).
  83. H. Weng, D. Wang, **Y. Jiang**, and X. Liu, Low Energy Positron Beam Studies of Nano-TiN Films, *Materials Science and Engineering*. B26, 163 (1994).
  84. D. Wang, J. Yang, and **Y. Jiang**. Infrared Absorption Study of N Ion Implanted Silicon, *Proceedings of MRS 1993 Fall meeting: Determining Nanoscale Physical Properties of Materials by Microscopy and Spectroscopy*, M. Sarikaya, H. Kumar Wichramasinghe, and M. Isaacson (Eds.) 332: 147-152 (1994).
  85. H. Wen, D. Wang, and **Y. Jiang**. Slow Positron Annihilation Study of Nano-TiN Films, *Proceedings of 1993 MRS Fall meeting: Determining Nanoscale Physical Properties of Materials by Microscopy and Spectroscopy*, M. Sarikaya, H. Kumar Wichramasinghe, and M. Isaacson (Eds.) 332: 211-216 (1994).
  86. D. Wang, **Y. Jiang**, S. Zhang, and R. Fang, The Microstructure of Nano-SnO<sub>2</sub>, *Trans. Mat. Res. Soc. Jpn.*, 16B, 1563 (1993).
  87. D. Wang, H. Chen, and **Y. Jiang**, X-Ray Diffractions of Nanocrystals, *Trans. Mat. Res. Soc. Jpn.*, 16B, 1551 (1993).
  88. D. Wang, **Y. Jiang**, H. Chen, W. Liu, and R. Fang, Monte Carlo Simulation of the Structure of Nanophase Materials, *Trans. Mat. Res. Soc. Jpn.*, 16A, 179 (1993).
  89. D. Zhang, B. Yang, **Y. Jiang**, Y. Wu, X. Wang, and Y. Ruan, Mossbauer Study of the High-Temperature BiPbSrCaCuSnO Superconductor, *Solid State Communications*. 83: 999-1002 (1992).

### Book Chapters

90. Xiuxiu He and Yi Jiang. A Multiscale Model of Cell Migration in Three-Dimensional Extracellular Matrix. *Cell Movement: Modeling and Applications*, ed. Nicoleta Tarfulea, Magdalena Stolarska, Birkhäuser. (2018).
91. Sonja E.M. Boas, **Yi Jiang**, Roeland M.H. Merks, Sotiris A. Prokopiou, and Elisabeth G. Rens. Cellular Potts model: Applications to vasculogenesis and angiogenesis. *Probabilistic Cellular Automata*, 297-310 (2018).
92. **Y. Jiang**, Amy L. Bauer, and Trachette L. Jackson, Cell-based modeling of tumor angiogenesis, in *Modeling Tumor Vasculature: Molecular, Cellular, and Tissue Level*

- Aspects and Implications, ed. T.L. Jackson, Springer (2011).
93. **Y. Jiang**, B. J. Travis, C. Knutson, J. Zhang, and P. Weronki, Numerical Methods for Protocell Simulations, in *Protocells: bridging nonliving and living matter*, eds. S. Rasmussen, M.A. Bedau, L. Chen, D. Deamer, D.C. Krakauer, N.H. Packard, and P.F. Stadler, MIT Press (2006).
  94. S. Ramussen, J. Bailey, J. Boncella, L. Chen, S. Collis, S. Colgate, M. DeClue, H. Fellermann, G. Goranovic, **Y. Jiang**, C. Knutson, P.A. Monnard, F. Mouffouk, P. Nielsen, A. Sen, A. Shreve, A. Tamulis, B. Travis, P. Weronki, J. Zhang, X. Zhou, and H. Ziock, Assembly of a minimal protocell, in *Protocells: bridging nonliving and living matter*, eds. S. Rasmussen, M.A. Bedau, L. Chen, D. Deamer, D.C. Krakauer, N.H. Packard, and P.F. Stadler, MIT Press (2006).
  95. M. S. Alber, M. A. Kiskowski, **Y. Jiang**, and S. Newman, Biological Lattice Gas Models, in *Dynamics and Bifurcation of Patterns in Dissipative Systems*, G. Dangelmayr and I. Oprea (eds.). World Scientific Series on Nonlinear Science, 12:274-291. World Scientific, Singapore (2004).
  96. M. S. Alber, M. A. Kiskowski, J. A. Glazier, and **Y. Jiang**, On Cellular Automaton Approaches to Modeling Biological Cells, IMA 134: Mathematical systems theory in biology, communication, and finance, Springer-Verlag, New York (2002).
  97. **Y. Jiang**, M. Asipauskas, J. A. Glazier, and F. Graner, Ab Initio derivation of mesoscopic stress and strain in foams, in *Foams, Emulsions and their Applications*, P. Zitha, J. Banhart, and G. Verbist (Eds.) Verlag MIT Publishing, Bremen, Germany, 297: 304 (2000).
  98. **Y. Jiang**, E. Janiaud, C. Flament, J. A. Glazier, and F. Graner, Energy landscape of 2D fluid foams, in *Foams, Emulsions and their Applications*, P. Zitha, J. Banhart, and G. Verbist (Eds.), Verlag-MIT Publishing, Bremen, Germany, 321-327 (2000).

### Refereed Conference Proceedings

99. *Sergey Klimov*, Yue Xue, Rondell Graham, Arkadiusz Gertych, **Yi Jiang**, Shristi Bhattarai, Emad Rakha, Michelle Reid, Ritu Aneja. Predicting Metastasis Risk in Pancreatic Neuroendocrine Tumor (PanNET) using a Multi-Label Deep Learning Approach. *Laboratory Investigation*. 100: 1654-1655 (2020)
100. *Hao Chen*, Shengdi Wu, Zhenyan Li, *Sergey Klimov*, Alton Farris, Wei Jiang, **Yi Jiang**. A novel non-invasive technology for liver fibrosis measurement. *Hepatology* 70: 1078 (2019)
101. *Sergey Klimov*, Alton Farris, Yaobing Chen, *Hao Chen*, **Yi Jiang**. Classifying cirrhosis on H&E slides via a novel 2-step machine learning pipeline. *Hepatology* 70: 1240 (2019).
102. *Sergey Klimov*, B Alton, *Hao Chen*, Yaobing Chen, **Yi Jiang**. Predicting advanced liver fibrosis using deep learning-based biopsy image analysis. *J of Hepatology*. 70: e196 (2019).
103. *Hao Chen*, Zhenyan Li, *Sergey Klimov*, B Alton, **Yi Jiang**. A novel non-invasive technology for liver fibrosis detection. *J of Hepatology*. 70: e116 (2019).
104. *Sergey Klimov*, Islam Miligy, Arkadiusz Gertych, **Yi Jiang**, Padmashree Rida, Ian Ellis, Emad Rakha, Ritu Aneja. Predicting DCIS Recurrence Risk Using a Machine Learning-Based High-Content Image Analysis Approach. *Laboratory Investigation*. 98: 81 (2018).

105. *A Liao*, P Mittal, **Y Jiang**, HE Grossniklaus. Metastatic Uveal Melanoma in the Liver Exhibit Two Distinct Patterns with Different Growth Kinetics. *Investigative Ophthalmology & Visual Science*. 58: 4409 (2017)
106. Priyanka Priyadarshani, *Shuman Guo*, Kevin Donaldson, *Haitao Huang*, Micah A Chrenek, Hans E Grossniklaus, **Yi Jiang**, JM Nickerson. Robust automated processing and analysis of images of RPE cells. *Investigative Ophthalmology & Visual Science*. 57: 1727 (2016)
107. John Nickerson, Xin Qi, *Tingting Jiang*, *Yuwei Cheng*, Jing Zhang, Micah Chrenek, Alia Rashid, Shagun Arora, Hans Grossniklaus, **Yi Jiang**. Quantifying progression of disease in aging mouse and human RPE. *Investigative Ophthalmology & Visual Science*. 54: 5008 (2013)
108. J M Nickerson, X Qi, Micah A Chrenek, Christopher Gardner, Qing Zhang, Hans E Grossniklaus, **Yi Jiang**. Functional Principal Component Analyses of Mouse RPE Sheet Morphology Give Discriminatory Categories. *Investigative Ophthalmology & Visual Science*. 53: 1602 (2012)
109. Qing Zhang, Micah Chrenek, Nupur Dalal, Hua Yang, **Yi Jiang**, Christopher H Gardner, John Nickerson, Hans E Grossniklaus. Evaluation of Morphological Changes of Retinal Pigment Epithelium in Human Dry Age-related Macular Degeneration Using Flat-mount Technique. *Investigative Ophthalmology & Visual Science*. 52: 1759 (2011)
110. J M Nickerson, M A Chrenek, Q Zhang, N N Dalal, **Y Jiang**, H E Grossniklaus. Comparison Of RPE Morphology Changes in Mouse and Human. *Investigative Ophthalmology & Visual Science*. 52: 1381 (2011)

### Editorials

111. William S Hlavacek, S Gnanakaran, Brian Munsky, Michael E Wall, James R Faeder, **Yi Jiang**, Ilya Nemenman, and Orna Resnekov, The eighth q-bio conference: meeting report and special issue preface. *Phys. Biol.* 12: 060401 (2015).
112. Ilya Nemenman, James R Faeder, S Gnanakaran, William S Hlavacek, Brian Munsky, Michael Wall, **Yi Jiang**. The Seventh q-bio Conference: meeting report and preface, *Physical Biology*. 11: 040301 (2014).
113. Ilya Nemenman, S Gnanakaran, Brian Munsky, Michael E Wall, **Yi Jiang**, William S Hlavacek and James R Faeder, Special section dedicated to The Sixth q-bio Conference: meeting report and preface. *Physical Biology*. 10:030301 (2013).
114. Ilya Nemenman, S. Gnanakaran, William Hlavacek, **Yi Jiang**, Brian Munsky, Michael E. Wall, J. R. Faeder. The Fifth Annual q-bio Conference on Cellular Information Processing. *Physical Biology*. 9:050201 (2012).
115. Ilya Nemenman, James R Faeder, William S Hlavacek, **Yi Jiang**, Michael E Wall and Anton Zilman. Selected papers from the Fourth Annual q-bio Conference on Cellular Information Processing. *Physical Biology*. 8: 050301 (2011).
116. I. Nemenman, W.S. Hlavacek, **Y. Jiang**, M. E. Wall, and A. Zilman. Editorial: The Third q-bio Conference on Cellular Information Processing, *IET Systems Biology*. 4: 331-333 (2010).
117. I. Nemenman, W. Hlavacek, **Y. Jiang**, and M. Wall, Editorial: Selected papers from the Second q-bio Conference on Cellular Information Processing. *IET Systems Biology*. 3: 297-299 (2009).
118. I. Nemenman, W.S. Hlavacek, J.S. Edwards, J. R. Faeder, **Y. Jiang** and M.E. Wall,

Editorial: Selected papers from the First q-bio Conference on Cellular Information Processing. IET Systems Biology. 2: 203-205 (2008).

119. J. Edwards, J. Faeder, W. Hlavacek, **Y. Jiang**, I. Nemenman, and M. Wall, Q-Bio 2007: a watershed moment in modern biology, Molecular Systems Biology. 3: 148 (2007).
120. M. Alber, T. Hou, J.A. Glazier, and **Y. Jiang**. Introduction to Special Issue on Multiscale Modeling in Biology, Multiscale Modeling and Simulation: A SIAM Interdisciplinary Journal. 3: xii-xiii (2005).

### Special Issues Edited

1. Special Issue on Quantitative Biology, William S Hlavacek, S Gnanakaran, Brian Munsky, Michael E Wall, James R Faeder, **Yi Jiang**, Ilya Nemenman, and Orna Resnekov, Guest Editors, Physical Biology, 12(2015).
2. Special Issue on Quantitative Biology, Ilya Nemenman, James R Faeder, S. Gnanakaran, William Hlavacek, Brian Munsky, Michael Wall, and **Yi Jiang**, Guest Editors, Physical Biology, 11(2014).
3. Special Issue on Quantitative Biology, Ilya Nemenman, S. Gnanakaran, Brian Munsky, Michael Wall, **Yi Jiang**, William Hlavacek, and James R. Faeder, Guest Editors, Physical Biology, 10(2013).
4. Special Issue on Quantitative Biology, Ilya Nemenman, S. Gnanakaran, William Hlavacek, **Yi Jiang**, Brian Munsky, Michael Wall, and James R. Faeder, Guest Editors, Physical Biology, 9(2012).
5. Special Issue on Quantitative Biology, Ilya Nemenman, James R Faeder, William S Hlavacek, **Yi Jiang**, Michael E Wall and Anton Zilman, Guest Editors, Physical Biology, 8(2011).
6. Special Issue on Quantitative Biology, Ilya Nemenman, William Hlavacek, **Yi Jiang**, and Michael Wall, Guest Editors, IET Systems Biology, 4(6) (2010).
7. Special Issue on Quantitative Biology, Ilya Nemenman, William Hlavacek, **Yi Jiang**, and Michael Wall, Guest Editors, IET Systems Biology, 3(5) (2009).
8. Special Issue on Quantitative Biology, James Faeder, **Yi Jiang**, Ilya Nemenman, William Hlavacek, and Michael Wall, Guest Editors. IET Systems Biology, 2(5) (2008).
9. Special Issue on Multiscale Modeling in Biology, Mark Alber, Thomas Hou, James A. Glazier, **Yi Jiang**, Guest Editors, Multiscale Modeling and Simulation: A SIAM Interdisciplinary Journal, 3(2) (2005).

### Preprints (mentee in *italic*)

1. K. I. Mazzitello, M. Chrenek, Q. Zhang, J. Nickerson, H. Grossniklaus, F. Family, and **Yi Jiang**. Drusen Induced Morphology Dynamics of Retinal Pigment Epithelium. arXiv:1609.04496.
2. *Sotiris A. Prokopiou*, Markus R. Owen, Helen M. Byrne, Saffyah Ziyad, Luisa Iruela-Arispe, **Yi Jiang**. Integrative modeling of sprout formation in angiogenesis: coupling the VEGFA-Notch signaling in a dynamic stalk-tip cell selection. arXiv:1606.02167.
3. *Haitao Huang*, Kevin J. Donaldson, Jing Zhang, Priyanka Priyadarshani, Hans E. Grossniklaus, Jeffrey H. Boatright, John M. Nickerson, **Yi Jiang**. Spatial Analysis of Retinal Pigment Epithelial Morphology in Mice.
4. *Xiuxiu He*, *Kuangcai Chen*, Ning Fang, **Yi Jiang**. Coordinates in cell shape-space discriminate migration dynamics from single static cell images.

5. *Bin Zhang, Yi Jiang.* How Allee Effect Improves the Probability of Tumor Eradication in Response to Chemotherapy.
6. *Bin Zhang, Adam Marcus, Yi Jiang.* Ecology of Collective Cancer Invasion: An Evolutionary Game Theory Model
7. *Anthony Morciglio, Royce Zia, James M. Hyman, Yi Jiang.* Educate to Vaccinate: Modeling Co-Evolution of Epidemic and Infodemic.
8. *Anthony Morciglio, Royce Zia, James M. Hyman, Yi Jiang.* Understanding the oscillations of epidemic due to vaccine hesitancy. <http://dx.doi.org/10.2139/ssrn.4495217>
9. *Ling Xu, Yi Jiang.* Mucociliary mixing and transport from cell to tissue scales.
10. *Hao Chen, Shengdi Wu, Zhenyan Li, Yuli Zhu, Lihong Ye, Yongliang Chen, Alton B. Farris III, Jing Wang, Wei Jiang, Yi Jiang.* High-accuracy detection of early liver fibrosis based on Doppler ultrasound images: A clinical study.

### Software

- Alignment quantification: *extracts and quantifies the local alignment vector fields from microscopy images based on circular statistics*
  - <https://github.com/yijianglan/Alignment-Quantification>
- Automatic cutbox: *automatic selection of desirable areas from whole slide microscopy images based on statistical analysis*
  - <https://github.com/yijianglan/Automatic-Cutbox>

### PRESENTATIONS

#### Invited Talks

1. Seminar, Isaac Newton Institute for Mathematical Sciences, Cambridge University, UK (August 2023)
2. Seminar, Wenzhou Institute, University of Chinese Academy of Sciences, Wenzhou, China (August 2023)
3. Opening Talk, the 17<sup>th</sup> q-Bio Conference, Shenzhen, China (July 2023)
4. Seminar, Southern China University of Science and Technology, Shenzhen, China (July 2023)
5. Seminar, Department of Physics, Xiamen University, Xiamen, China (July 2023).
6. Plenary Speaker, Biology and Medicine Through Mathematics Conference (BAMM), Richmond, VA (May 2023).
7. Seminar, Department of Intelligent Systems Engineering, Indiana University Bloomington, IN (May 2023).
8. Plenary Speaker, SIAM Conference on the Life Sciences (LS22), Pittsburgh, PA (July 2022).
9. Invited Speaker, American Women in Mathematics (AWM) Meeting, Minneapolis, MN (June 2022).
10. Keynote Speaker, the first Annual Undergraduate Mathematics and Statistics Research Conference for the Greater Atlanta Area, Atlanta, GA (April 2022).
11. Invited Speaker, Georgia Scientific Computing Symposium, Atlanta, GA (February 2022).
12. Seminar, Interdisciplinary Center for Quantitative Modeling in Biology (ICQMB),

- University of California, Riverside, CA (October 2021).
13. Seminar, Emory Eye Center, Emory Medical School, Atlanta, GA (May 2020).
  14. Colloquium, Department of Mathematics, Tulane University, New Orleans, LA (September 2019).
  15. Invited Talk, Workshop on Cellular Dynamics and Models, Cold Spring Harbor Laboratory, Cold Spring Harbor, NY (April 2019).
  16. Invited Talk, Workshop on “What is theoretical biophysics in the era of data and AI”, Emory, GA (January 2019).
  17. Seminar, Department of Mechanical Engineering, Virginia Tech, VT (October, 2018).
  18. Invited Panel Speaker, Health Connect South, Atlanta, GA (September, 2018).
  19. Invited Talk, SIAM Conference on the Life Sciences, Minneapolis, MN (August, 2018).
  20. Invited Talk, 11th European Conference on Mathematical and Theoretical Biology (ECMTB), Lisbon, Portugal (July, 2018)
  21. Invited Talk, American Institute of Mathematical Sciences (AIMS) Conference, Taipei, Taiwan (July, 2018).
  22. Seminar, School of Mathematics, Fuzhou University, Fuzhou, Fujian, China (July, 2018)
  23. Colloquium, Department of Biomedical Engineering, Texas A&M University, College Station, TX (May, 2018).
  24. Seminar, Emory Eye Center, Emory University, Atlanta, GA (November, 2017).
  25. Invited Talk, QCBnet Workshop Cells as Dynamical Systems, San Francisco, CA (May, 2017)
  26. Invited Talk, Hybrid Multiscale Modeling and Validation, MBI, Columbus, OH (March, 2017)
  27. Invited Talk, Georgia Scientific Computing Symposium, Athens, GA (February, 2017)
  28. Invited Talk, SIAM Conference on Computational Science and Engineering (CSE17), Atlanta, GA (February, 2017)
  29. Invited Talk, Joint Mathematics Meetings, Atlanta, GA (January, 2017)
  30. Colloquium, Institute for Physical Science and Technology, University of Maryland, College Park, MD (September, 2016)
  31. Invited Talk, AIMS Annual Meeting 2016, Orlando, FL (July, 2016)
  32. Invited Talk, The American Anatomy Association Annual Meeting, held in conjunction with experimental Biology EB2016, San Diego, CA (April, 2016)
  33. Invited Talk, The American Physical Society Annual Meeting, Baltimore, MD (March 2016)
  34. Colloquium, Department of Mathematical Science, University of Alabama Huntsville, AL (February, 2016).
  35. Invited Talk, The International Chemical Congress of Pacific Basin Societies 2015 Honolulu, HI (December 2015)
  36. Invited Talk, Scientific Computing Day, Georgia State University, Atlanta, GA (September, 2015)
  37. Invited Seminar, Emory Eye Center, Atlanta, GA (September, 2015)
  38. Invited Talk, ACM International Conference on Bioinformatics, Computational Biology, and Health Informatics, Atlanta, GA (September, 2015).
  39. Invited Talk, 5<sup>th</sup> International Conference on Cancer Bioinformatics, Changchun, Jilin, China (July 2015).
  40. Invited Talk, Tumor-Stroma Interaction Minisymposium, 2015 Annual Meeting for the

- Society for Mathematical Biology, Atlanta, GA (June 2015).
41. Seminar, Cancer Cell Biology Program, Winship Cancer Institute, Emory, Atlanta, GA (June 2015).
  42. ISBI Chalk Talk, Integrative Systems Biology Institute, Georgia Institute of Technology (May 2015).
  43. Colloquium, Department of Mathematics, Morehouse College, Atlanta, GA (April 2015).
  44. Seminar, Department of Mathematics, Arizona State University, Tempe AZ (March 2015).
  45. Colloquium, Department of Mathematics, Arizona State University, Tempe, AZ (March 2015).
  46. Seminar, Mathematical Oncology Department, Moffitt Cancer Center, Tampa, FL (February 2015).
  47. Invited Talk, SIAM Life Sciences, Charlottesville, NC (August 2014).
  48. Invited Talk, JSMB/SMB Joint Annual Meeting, Osaka, Japan (August 2014).
  49. Seminar, South China University and Technology, Guangzhou, China (July 2014).
  50. Seminar, Tumor Hospital, Sun Yet-sun University Medical School, Guangzhou, China (July 2014).
  51. Lecture, Beijing 2014 Summer School on Biophysics, Beijing, China (June 2014).
  52. Seminar, Beijing Computational Science Research Center, Beijing, China (June 2014).
  53. **Keynote Speaker**, Scientific Computing Around Louisiana, Louisiana State University, Baton Rouge, LA (February 2014).
  54. Colloquium, Department of Mathematics, Tulane University, New Orleans, LA (February 2014).
  55. Lecture, q-Bio Summer School, Santa Fe, NM (August 2013).
  56. Seminar, Graduate University of Chinese Academy of Science, Beijing, China (June 2013).
  57. Invited Speaker, 2nd International Conference on Interdisciplinary Applied Mathematics and Computational Mathematics, Hangzhou, China (June 2013).
  58. Seminar, Center for Infectious Diseases, Huashan Hospital, Shanghai, China (June 2013).
  59. Colloquium, Department of Physics, Chinese University of Hong Kong, Hong Kong (June 2013).
  60. Seminar, Department of Computer Science, South China University of Technology (June 2013).
  61. Seminar, Department of Mechanical Engineering, South China University of Technology (June 2013).
  62. Seminar, Centrum Wiskunde & Informatica, Amsterdam, the Netherlands (June 2013).
  63. Invited Speaker, Probabilistic Cellular Automata: Theory, Applications and Future Perspectives, Eindhoven, the Netherlands (June 2013).
  64. Colloquium, Department of Physics, Georgia State University, Atlanta, GA (March 2013).
  65. Invited Speaker, Georgia Scientific Computing Symposium, Georgia State University, Atlanta, GA (February 2013).
  66. Seminar, Center for Theoretical Biological Physics, Rice University, Houston, TX (February 2013).



67. Seminar, Department of Mechanical Engineering, Ohio State University, OH (February 2013).
68. Seminar, Emory Eye Center, Emory University, GA (February 2013).
69. Seminar, Department of Mathematics, University of South Carolina, SC (November 2012).
70. Seminar, Department of Physics, University of Georgia, Athens, GA (October 2012).
71. Seminar, Department of Statistics, Yale University, New Haven, CT (September 2012).
72. Invited Speaker, Society for Mathematical Biology Annual Meeting, Knoxville, TN (July 2012).
73. Invited Speaker, American Institute of Mathematical Sciences Annual Meeting, Orlando, FL (July 2012).
74. Seminar, Mathematical Biology and Ecology Seminar Series, School of Mathematics, Georgia Institute of Technology, Atlanta, GA (February 2012).
75. Seminar, Department of Biochemistry and Molecular Biology, University of Georgia, Athens, GA (October 2011).
76. Invited Speaker, MathBio3: Modeling symposium, University of Wisconsin, Madison, WI (September 2011).
77. Invited Speaker, European Conference of Mathematical and Theoretical Biology (ECMTB) and Society of Mathematical Biology Meeting, Krakow, Poland (June 2011).
78. Seminar, Department of Mathematics and Statistics, Georgia State University, Atlanta, GA (May 2011).
79. Invited Speaker, Minisymposium on Computational Biology, Association for Research for Vision and Ophthalmology (ARVO) 2011, Ft Lauderdale, FL (May 2011).
80. Seminar, Mechanical/Aerospace Engineering, University of California, San Diego, CA (February 2011).
81. Invited Speaker, Solid Tumor Modeling, NIMBioS Investigative Workshop, Knoxville, TN (January 2011).
82. Seminar, Department of Mathematics, Tulane University, New Orleans, LA (October 2010).
83. Colloquium, Department of Mathematics, Tulane University, New Orleans, LA (September 2010).
84. Colloquium, MBI Bootcamp for Cancer Modeling, Ohio State University, Columbus, OH (September 2010).
85. Tutorial, Fourth q-Bio conference, Santa Fe, NM (August 2010).
86. Seminar, Cancer Research Center, University of New Mexico, Albuquerque, NM (August 2009).
87. Lecture, Third q-Bio Summer School, Los Alamos, NM (July 2009).
88. Invited Speaker, Minisymposium on Multiscale Modeling, First Joint SMB-CSMB Conference, Hangzhou, China (June, 2009).
89. **Plenary Speaker**, Mathematical Modeling in the Medical Sciences, Annual Shanks Conference and Lecture, Vanderbilt University, TN (May, 2009).
90. Invited Speaker, Minisymposium on Cancer Modeling, SIAM Computational Sciences and Engineering, Miami, FL (March 2009).
91. Elkin Lecture, Winship Cancer Institute, Emory University, GA (December 2008)
92. Seminar, Computational & Life Sciences Seminar series, Emory University, GA (December 2008).

93. Seminar, Theoretical and Applied Mechanics, Cornell University, NY (November 2008).
94. Seminar, Vanderbilt Integrative Cancer Biology Center, Nashville, TN (November 2008).
95. Seminar, Emory Eye Center, Emory University, Atlanta, GA (October, 2008).
96. Colloquium, Department of Mathematics and Statistics, University of South Alabama, Mobile, AL (October 2008).
97. Colloquium, Department of Physics, Emory University, Atlanta, GA (September 2008).
98. Invited Speaker, Workshop on Growth and Control of Tumors: Theory and Experiment. Fields Institute, Toronto, Canada (July, 2008).
99. Lecture, Second q-Bio Summer School, Los Alamos, NM (July 2008).
100. Lectures, Los Alamos Summer School, Los Alamos, NM (July 2008).
101. Invited Speaker, Theoretical Biology and Biomathematics, Gordon's Research Conference, Italy (June, 2008).
102. Seminar, Computer Science Research Groups, Oak Ridge National Laboratory, TN (March, 2008).
103. Seminar, Department of Mathematics, University of Tennessee, Knoxville, TN (March, 2008).
104. Seminar, Bioengineering Department, University of Maryland, College Park, MD (February, 2008).
105. Colloquium, Department of Aerospace and Mechanical Engineering, University of Notre Dame, Notre Dame, IN (February, 2008).
106. Colloquium, Physics Department, Brown University, Providence, RI (February, 2008).
107. Seminar, Cancer Research Facility, University of New Mexico, Albuquerque, NM (December, 2007)
108. Seminar, Department of BioMathematics, University of California Los Angeles, CA (November, 2007).
109. Seminar, INCBN/IGERT, University of New Mexico, Albuquerque, NM (October, 2007).
110. Colloquium, Center for the Study of Biocomplexity and Department of Physics, University Notre Dame, Notre Dame, IN (September, 2007).
111. Invited Symposium, Annual Meeting of the Society of Mathematical Biology 2007, San Jose, CA (August, 2007).
112. Seminar, Center for Nonlinear Studies, Los Alamos National Laboratory, Los Alamos, NM (July, 2007).
113. Lecture, q-Bio Summer School, Los Alamos, NM (July 2007).
114. Lectures, Los Alamos Summer School, Los Alamos, NM (July 2007).
115. Colloquium, School of Computer Information Network Engineering and Research Center, South China University of Technology, Guangzhou, China (July, 2007).
116. Invited Speaker, International Conference of Materials of Advanced Technology, Singapore. (July, 2007).
117. Plenary Speaker, 7TH International Conference of Computational and Mathematical Methods in Science and Engineering, Chicago, IL (June, 2007).
118. Invited Speaker, American Physical Society Annual March Meeting, Denver, CO (March, 2007).
119. Seminar, Department of Anatomy and Cell Biology, Kansas City Medical Center,

- Kansas City, KS (February, 2007).
120. Colloquium, Department of Mathematics, Middle Tennessee State University, Murfreesboro, TN (November, 2006).
  121. Seminar, Institute of Theoretical Physics, Chinese Academy of Sciences, Beijing, China (July, 2006).
  122. Colloquium, Department of Computer Sciences, Southern China University of Technology, Guangzhou, China (July, 2006).
  123. **Topical Speaker**, Society of Industrial and Applied Math Annual Meeting, Boston, MA (July, 2006).
  124. Invited Speaker, Angiogenesis Workshop, Institute for Pure and Applied Mathematics, UCLA, Los Angeles, CA (March, 2006).
  125. Invited Speaker, American Physical Society Annual Meeting, Baltimore, MD (March, 2006).
  126. Colloquium, Department of Mathematics, Arizona State University, Phoenix, AZ (February, 2006).
  127. Seminar, Department of Physics, Purdue University, West Lafayette, IN (February, 2006).
  128. Colloquium, Department of Biomedical Engineering, Johns Hopkins University, Baltimore, MD (February, 2006).
  129. Seminar, Department of Mathematics, University of Texas, Austin, TX (January, 2006).
  130. Colloquium, Department of Physics, University at Buffalo, State University of New York, Buffalo, NY (December, 2005).
  131. Seminar, Department of Physics, University at Buffalo, State University of New York, Buffalo, NY (December, 2005).
  132. Invited Speaker, Joint Summer Research Conference on Modeling the Dynamics of Human Diseases: Emerging Paradigms and Challenges, Snowbird, UT (July 2005).
  133. Invited Talk, PACE/PAs International Collaborative Workshop, Los Alamos, NM (July, 2005).
  134. Lecture, Los Alamos Summer School, Los Alamos, NM (June 2005).
  135. Invited Symposium, SIAM Annual Meeting, Minisymposium on Multiscale Biophysics, New Orleans, LA (July, 2005).
  136. Colloquium, Institute of Theoretical Physics, Chinese Academy of Science, Beijing, China (June 2005).
  137. Invited Talk, Materials Theory Seminar Series, Los Alamos National Laboratory, Los Alamos, NM (June 2005).
  138. Invited Speaker, Dynamics Days of Cancer: Modeling and Experiment, Ann Arbor, MI (May 2005).
  139. Invited Speaker, International Workshop: Collectives Formation and Specialization in Biology and Social Systems, Santa Fe, NM (April 2005).
  140. Gold Club Speaker, Cancer Research Facility, University of New Mexico, Albuquerque, NM (December 2004).
  141. Invited Speaker, Symposium on Biological Systems and Soft Materials: Future Directions in Statistical Physics, Virginia Tech., Blacksburg, VA (March 2004).
  142. Invited Talk, Materials Theory Seminar Series, Los Alamos National Laboratory, Los Alamos, NM (October 2003).
  143. Invited Speaker, Bridging Nonliving and Living Matter, Los Alamos National

- Laboratory & Santa Fe Institute, Santa Fe, NM (September 2003).
144. Seminar, Interdisciplinary Center of Biocomplexity, University of Notre Dame, Notre Dame, IN (November 2002).
  145. Invited Speaker, Biocomplexity Workshop: Bioengineering, University of Notre Dame, Notre Dame, IN (November 2002).
  146. Colloquium, Department of Mathematics and Statistics, University of New Mexico, Albuquerque, NM (January 2002).
  147. Seminar, Department of Mathematics, Stanford University, Palo Alto, CA (August 2001).
  148. Fifth SIAM Conference on Control and its Applications, San Diego, CA (July 2001).
  149. Seminar, Department of Physics, Arizona State University, Phoenix, AZ (March 2001).
  150. Colloquium, Department of Physics, University of South Florida, Tampa, FL (February 2001).
  151. Seminar, Department of Chemistry, Virginia Tech, Blacksburg, VA (January 2001).
  152. Seminar, Department of Physics, Indiana University, Bloomington, IN (January 2001).
  153. Seminar, Department of Physics, Emory University, Atlanta, GA (October 2000).
  154. Seminar, Department of Mechanical Engineering, Johns Hopkins University, Baltimore, MD (October 2000).
  155. Speaker, Center for Nonlinear and Complex Systems, Duke University, Durham, NC (October 2000).
  156. Seminar, Department of Physics, Virginia Tech, Blacksburg, VA (October 2000).
  157. Colloquium, Department of Chemistry, Virginia Tech, Blacksburg, VA (October 2000).
  158. Colloquium, Department of Physics, University of Missouri, Columbia, MO (September 2000).
  159. Seminar, Computational Sciences and Information Technology, Florida State University, Tallahassee, FL (September 2000).
  160. Seminar, Department of Physics, UC Irvine, CA (February 2000).
  161. Invited Talk, Arizona Days Workshop, Center for Nonlinear Studies, Los Alamos, NM (January 2000).
  162. Seminar, Kansas Institute of Computational and Theoretical Science, University of Kansas, Lawrence, KS (December 1999).
  163. Seminar, Department of Physics, Kansas State University, Manhattan, KS (September 1999).
  164. Invited Talk, Nonlinear Phenomena in Complex Systems Workshop, Los Alamos, NM (May 1999).
  165. Seminar, Department of Chemical Engineering, University of Pittsburgh, Pittsburgh, PA (May 1998).
  166. Colloquium, Center for Nonlinear Sciences, Hong Kong Baptist University, Hong Kong (January 1998).
  167. Seminar, RIEC, Tohoku University, Sendai, Japan (December 1997).
  168. Seminar, Materials Theory and Computation Group, Sandia National Lab, Albuquerque, NM (January 1997).

### **Contributed Conference Presentations**

1. “Leader, Follower, and Cheater in Collective Cancer Invasion”, Yi Jiang. 17<sup>th</sup> q-Bio

- conference, Shenzhen, China (July 2023)
2. “Air quality and Covid-cases in India: a spatiotemporal analysis before, during, and after lockdown in 2020”, *Grace Yu* and Yi Jiang. Georgia Scientific Computing Symposium, Atlanta (February 2022)
  3. “Tensile Force-Induced Cytoskeletal Remodeling: Mechanics Before Chemistry”, *Xiaona Li, Qin Ni, Xiuxiu He*, Jun Kong, Soon-Mi Lim, Garegin A. Papoian, Jerome P. Trzeciakowski, Andreea Trache and Yi Jiang. Biophysical Society Meeting, San Francisco (February 2022)
  4. “Mask on, Mask off: An SEIAR model to evaluate the role of mask in preventing disease transmission”, *Anthony Morciglio*, Yi Jiang, Biophysical Society Meeting, virtual (February 2021).
  5. “Functional Differences between b- and g-Actin: From Translation Dynamics to Amino Acid Changes”, Pavan Vedula, Satoshi Kurosaka, Dawei Dong, Brittany MacTaggart, *Qin Ni*, Yi Jiang, Anna Kashina, Biophysical Society Meeting, virtual (February 2021)
  6. “A Novel Noninvasive Method to Detect Liver Fibrosis”, The Liver Meeting 2019, Boston, MA (November, 2019)
  7. “Classifying Cirrhosis on H&E Slides via a Novel 2-Step Machine Learning Pipeline”. *Sergey Klimov*, Alton Farris, Yaobin Chen, *Hao Chen*, Yi Jiang. The Liver Meeting 2019, Boston, MA (November, 2019)
  8. “Dynamics of Blood Flow in Liver Discriminate Hepatic Fibrosis”, *Hao Chen*, Zhangyan Li, Lihong Ye, Yi Jiang. q-bio Conference 2019. San Francisco, CA (July, 2019)
  9. “Mechanics before Chemistry: Tensile Stress Induced Cytoskeletal Reorganization”, *Xiaona Li, Qin Ni, Xiuxiu He*, Soon Mi Lim, Geregin Papoian, Andreea Trache, Yi Jiang. q-bio Conference 2019. San Francisco, CA (July 2019)
  10. “Modeling Complex Ecosystem in Collective Cancer Invasion Using an Evolutionary Game Theory Framework”. *Bin Zhang*, Adam Marcus, Yi Jiang. q-bio Conference 2019. San Francisco, CA (July 2019)
  11. “Tensile Stress Induced Cytoskeletal Reorganization”, Gordon Research Conference on Directed Cell Migration, Galveston, TX (January, 2019)
  12. “The Shapes of Cell Migration”, Gordon Research Conference On Directed Cell Migration, Galveston, TX (January 2019)
  13. “Mechanics Before Chemistry: Tensile Stress Induced Cytoskeletal Reorganization”, 12<sup>th</sup> q-Bio Conference, Rice University, TX (June 2018)
  14. “Leaders in Collective Invasion in Cancer”, Center for Theoretical Sciences, Princeton, NJ (December 2017)
  15. “Cell Shape and Migration”, 11<sup>th</sup> q-Bio Conference, Rutgers, NJ (August 2017)
  16. “Modeling Liver Fibrosis”, 11<sup>th</sup> q-Bio Conference, Rutgers, NJ (August 2017)
  17. “How curvature regulates cell migration: a computational study”  
10<sup>th</sup> q-Bio Conference, Nashville, TN (July 2016)
  18. “Modeling the stiffness of cirrhosis”  
10<sup>th</sup> q-Bio Conference, Nashville, TN (July 2016)
  19. “How curvature regulates cell migration: a computational study”  
SIAM Life Sciences 2016, Boston (July 2016)
  20. “A three-dimensional lattice model for hydrogel mechanics”  
SIAM Mathematical Aspects of Materials Science 16, Philadelphia, PA (May 2016)

21. "From Clinical Slides to Mathematical Prediction, a Twofold Approach"  
9<sup>th</sup> q-Bio Conference, Blacksburg, VA (August 2015).
22. "How Adhesion Regulates Cell Migration Plasticity: A Computational Study"  
9<sup>th</sup> q-Bio Conference, Blacksburg, VA (August 2015).
23. "Cancer cell invasion analysis in ECM using in vitro models"  
9<sup>th</sup> q-Bio Conference, Blacksburg, VA (August 2015).
24. "Spatial Analysis of Retina Pigment Epithelium"  
9<sup>th</sup> q-Bio Conference, Blacksburg, VA (August 2015)
25. "Spatial Analysis of Retinal Pigment Epithelium Morphometry in Age-related Macular Degeneration"  
2015 4<sup>th</sup> Biostatistics and Bioinformatics Workshop, Georgia State University, Atlanta, GA (May 2015).
26. "Modeling influenza infection"  
2015 Georgia Scientific Computing Symposium. Georgia Institute of Technology, Atlanta, GA (February 2015).
27. "Invasive analysis from a cell and ECM perspective"  
Winship Cancer Institute Symposium, Emory University, Atlanta, GA (October 2014).
28. "Three-Dimensional Model of ECM Mechanics"  
Winship Cancer Institute Symposium, Emory University, Atlanta, GA (October 2014).
29. "Modeling 3D Cell Migration"  
8<sup>th</sup> q-Bio Conference, Santa Fe, NM (August 2014).
30. "Let there be force: Cell-ECM Interactions in Cancer Invasion"  
8<sup>th</sup> ICBP, Beijing, China (June 2014).
31. "Numerical Study of the Mucociliary Clearance in the Airway"  
7<sup>th</sup> q-Bio Conference, Santa Fe, NM (August 2013).
32. "Modeling Cell-ECM Interaction"  
7<sup>th</sup> q-Bio Conference, Santa Fe, NM (August 2013).
33. "Quantifying progression of disease in aging mouse and human RPE"  
ARVO Meeting, Fort Lauderdale, FL (May, 2013).
34. "Functional principal component analysis of Mouse RPE morphology gives discriminatory categories"  
Biostatistics Workshop, Atlanta, GA (April 2013)
35. "Numerical study of mucociliary clearance in airway"  
Frontiers in Systems and Synthetic Biology'2013, Atlanta, GA (March 2013).
36. "Ovarian cancer relapse: micro-carcinomas vary in form with peritoneal niche"  
6<sup>th</sup> q-Bio Conference, Santa Fe, NM (August, 2012).
37. "Three-Dimensional Mathematical Model of Extracellular Matrix in Breast Cancer"  
6<sup>th</sup> q-Bio Conference, Santa Fe, NM (August, 2012).
38. "Analyses of Mouse RPE Morphology Give Discriminatory Categories"  
6<sup>th</sup> q-Bio Conference, Santa Fe, NM (August, 2012).
39. "Functional Principal Component Analyses of Mouse RPE Sheet Morphology Give Discriminatory Categories"  
ARVO meeting, Ft. Lauderdale, FL (May 2012).
40. "Sprout formation in angiogenesis: An integrated experiment and modeling study"  
Keystone Symposia Conferences: Angiogenesis: Advances in Basic Science and Therapeutic Applications, Snowbird, UT (January, 2012).

41. “Morphological Dynamics of Retinal Pigment Epithelium”  
5th q-Bio Conference, Santa Fe, NM (August, 2011).
42. “Comparison of RPE Morphology Changes in Mouse and Human”  
ARVO Meeting, Ft. Lauderdale, FL (April 2011).
43. “Evaluation of Morphological Changes of Retinal Pigment Epithelium in Human Dry Age-related Macular Degeneration Using Flatmount Technique”  
ARVO Meeting, Ft. Lauderdale, FL (April 2011).
44. “Learning from Myxobacteria: Behavioral principles of bacterial swarming”  
4th q-Bio Conference, Santa Fe, NM (August 2010).
45. “Cell order in bacterial swarms arises from reversals of moving directions”  
American Physical Society March Meeting, Portland, OR (March 2010).
46. “Cell-based Multiscale Modeling Framework for Tumor Growth”  
Frontiers in Multiscale Systems Biology, Georgia Tech, Atlanta, GA (October 2008).
47. “A Cell-based Model for Myxobacteria Swarming”  
The 2nd q-Bio Conference on Cellular Processing, Santa Fe (August 2008).
48. “Myxobacteria Swarming: Long Range Cell Order Through Cell Contact and Reversal”  
Theoretical Biology and Biomathematics, Gordon Research Conference, Italy (June 2008).
49. “Topography of Extracellular Matrix Mediates Vessel Sprout Development in Angiogenesis”  
Biophysical Society Annual Meeting, Long Beach, CA (February 2008).
50. “Assembly of Self-replicating Nanomachine: Integration of Gene, Container and Metabolism”  
American Physical Society March Meeting, Denver, CO (March 2007).
51. “Cellular model of tumor-induced angiogenesis”  
Biophysical Society Annual Meeting, Baltimore, MD (March 2007).
52. “P53-gene mediated tumor cell competition”  
Biophysical Society Annual Meeting, Baltimore, MD (March 2007).
53. “Dissipative Particle Dynamics Simulation of Structure Properties of Lipid Micelles”  
American Physical Society March Meeting, Baltimore, MD (March 2006).
54. “Equilibrium structure and phase separation in lipid mixture from DPD simulations”  
American Physical Society March Meeting, Los Angeles, CA (March 2005).
55. “Two-Stage Aggregate Formation via Streams in Myxobacteria”  
American Physical Society March Meeting, Los Angeles, CA (March 2005).
56. “Agent-Based Cellular Automata Model of Aggregation in Myxobacteria”  
Biocomplexity V: Multiscale Modeling in Biology, Notre Dame, IN (August 2003).
57. “Multiscale modeling of avascular tumor growth”  
Biocomplexity V: Multiscale Modeling in Biology, Notre Dame, IN (August 2003).
58. “Modeling Initial Avascular Tumor Growth”  
LANL Research Symposium 2003, Los Alamos, NM (August 2003).
59. “Stochastic CA models for rippling in Myxobacteria”  
CNLS 22th Annual Conference: Frontiers of Simulation, Los Alamos, NM (August 2002).
60. “2D flow of foams: a theoretical analysis”  
Eurofoam 2002, Manchester, England (July 2002).
61. “Modeling avascular tumor growth”

- Los Alamos Research Symposia, Los Alamos, NM (June 2002).
62. "Stochastic CA models for rippling in Myxobacteria"  
Los Alamos Research Symposia, Los Alamos, NM (June 2002).
  63. "From Equilibrium Energy to Stress Strain in 2D Foams"  
Principles of Soft Matter, Santa Fe, NM (June 2001).
  64. "Interference of Composition Waves in Filled Polymer Blend Thin Films"  
Principles of Soft Matter, Santa Fe, NM (June 2001).
  65. "Interference of filler induced composition waves in polymer blend"  
American Physical Society March Meeting, Seattle, WA (March 2001).
  66. "Stress distribution in fluid foams"  
American Physical Society March Meeting, Seattle, WA (March 2001).
  67. "Influence of Filler Particles and Clusters in Phase Separating Polymer Blends"  
Materials Research Society Fall Meeting, Boston, MA (November 2000).
  68. "Phase Separation Induced Morphology Evolution in Lipid Membranes"  
American Physical Society March Meeting, Minneapolis, MN (March 2000).
  69. "Energy-landscape of fluid foams"  
American Physical Society March Meeting, Minneapolis, MN (March 2000).
  70. "Deformation of elastic membranes induced by phase separation"  
Biophysics Society Annual Meeting, New Orleans, LA (February 2000).
  71. "Role of curvature in phase separation and deformation of elastic membranes"  
Dynamics Days 2000, Santa Fe, NM (January 2000).
  72. "Phase separation and deformation on a two-phase membrane"  
Center for Nonlinear Studies Annual Meeting, Los Alamos, NM (May 1999).
  73. "Phase separation on a two-dimensional membrane"  
Dynamics of Interfaces, Patterns and Domains '99, Los Alamos, NM (April 1999).
  74. "Shape and Phase of Cell Membranes"  
Center for Nonlinear Studies Forum, Los Alamos, NM (April 1999).
  75. "Lattice model for cell sorting"  
SCRI Monte Carlo Workshop, Tallahassee, FL (March 1999).
  76. "Kinetics of phase separation on deformable membranes"  
American Physical Society March Meeting, Atlanta, GA (March 1999).
  77. "Modeling tip formation in *Dictyostelium* mound"  
Arizona Days Workshop, University of Arizona, Tucson, AZ (January 1999).
  78. "Dynamics and disorder in 2D foam rheology simulations"  
Center for Nonlinear Studies, Dynamics Workshop, Los Alamos, NM (April 1998).
  79. "Cell sorting in the mound stage of *Dictyostelium*"  
American Physical Society March Meeting, Los Angeles, CA (March 1998).
  80. "Monte Carlo study of 2D foam under stress"  
American Physical Society March Meeting, Los Angeles, CA (March 1998).
  81. "Modeling foam drainage"  
Center for Applied Math, University of Notre Dame, Notre Dame, IN (February 1998).
  82. "Two-dimensional grain growth under stress"  
Materials Research Society Fall meeting, Boston, MA (December 1997).
  83. "Differential adhesion vs. chemotaxis in mound formation of *Dictyostelium*"  
International Dictyostelium Conference, Snowbird, UT (August 1997).
  84. "Foam drainage and its connection to flow in porous media"



Center for Nonlinear Studies, Los Alamos National Lab, Los Alamos, NM (August 1997).

85. “From chicken cells to slime mold: how cells know where to go”  
Center for Nonlinear Studies, Student Seminars, Los Alamos, NM (July 1997).
86. “Hysteresis of cellular pattern under stress”  
American Physical Society March Meeting, Kansas City, MO (March 1997).
87. “Foam drainage: extended large-Q Potts model simulations and a mean field theory”  
Materials Research Society Fall Meeting, Boston, MA (December 1996).
88. “Dynamics of cellular pattern formation”  
Complex Systems Summer School, Santa Fe Institute, NM (June 1996).
89. “Cellular pattern formation in foams and cells”  
Center for Nonlinear Studies, Los Alamos National Lab, Los Alamos, NM (May 1996).
90. “Anomalous grain growth and special scaling state in a two-dimensional growth”  
American Physical Society March Meeting, St. Louis, MO (March 1996).
91. “Slow positron annihilation study of nano-TiN films”  
Materials Research Society Fall Meeting, Boston, MA (December 1993).
92. “Infrared absorption study of N-ion implanted silicon”  
Materials Research Society Fall Meeting, Boston, MA (December 1993).

## TEACHING

At Department of Mathematics and Statistics of GSU

- Scientific Computing (MATH 3550): Spring 2017, Spring 2018, Spring 2020, Spring 2022
- Mathematical Biology (MATH/BIO/NEUR4010): Spring 2016.
- Senior Seminar (MATH 4991): Spring 2012, Fall 2012, Spring 2013, Spring 2014, Fall 2014, Fall 2016, Spring 2017, Fall 2018, Spring 2019, Fall 2019, Spring 2020, Fall 2020, Spring 2021, Fall 2021, Spring 2022
- Systems Biology (MATH/BIO 8550): Fall 2013, Fall 2015, Fall 2017, Fall 2018, Fall 2020, Fall 2022
- Dissertation Research in Mathematics (MATH 999): Spring 2011 – present
- Thesis Research in Statistics (STAT8999): Spring 2011 – present
- Thesis Research in Mathematics (MATH8999): Spring 2017, Fall 2017, Spring 2018 – present
- Directed Research in Mathematics (MATH 8950): Spring 2013 – present
- Research in Statistics (STAT 8820): Spring 2018 – Present
- Guest Lectures to Calculus for Lifesciences, 2013, 2014.

Out of Department of Mathematics and Statistics

- Lecture series, Training Workshop for High School Science Teachers from Atlanta Public Schools, Georgia State University, May 27–31, 2014 (with Iman Chahine).
- Lecture series, Training Workshop for High School Math Teachers from Atlanta Public Schools, Georgia State University, June 3-8, 2013 (with Iman Chahine & Mariana Montiel)

- The q-bio Conference on Cellular Information Processing, Tutorial on multiscale modeling (Santa Fe, 2008-2009)
- The q-Bio Summer School on Cellular Information Processing, Lecturer on cancer modeling (Los Alamos, 2007-2008)
- The Los Alamos Summer School of Physics, Mentor and Lecturer (Los Alamos, 2000-2008)

## **ACADEMIC ADVISORY**

### **Postdoc Fellows**

- Byoungkoo Lee (2011-2015), currently research scientist at The Jackson Laboratory, CT.
- Ling Xu (2012-2014), currently assistant professor at North Carolina Agricultural and Technical State University.
- Xin Zhou (2005-2008), currently professor at School of Physical Sciences, University of The Chinese Academy of Sciences, Beijing, China.
- Pawel Weronki (2005-2007), currently senior researcher at Polish Academy of Sciences, Krakow, Poland.

### **PhD Students**

- Somiya Rauf, 2022 - present, Concentration: Bioinformatics, Department of Mathematics and Statistics, Georgia State University
- Caleb Hightower, 2022 - present, Concentration: Mathematics, Department of Mathematics and Statistics, Georgia State University
- Brandon Reed, 2023 – present, Concentration: Bioinformatics, Department of Mathematics and Statistics, Georgia State University
- Anthony Morciglio, 2019-2021, Department of Mathematics and Statistics, Georgia State University
- Bin Zhang, PhD 2021, “Modeling Evolution of Intratumor Phenotypic Heterogeneity in Metastasis and in Cancer Drug Resistance” Department of Mathematics and Statistics, Georgia State University, currently Associate Professor at Qinghai University Medical School, Qinghai, China
- Hao Chen, PhD 2020, “Integrated Study of Liver Fibrosis: Modeling and Clinical Detection” Department of Mathematics and Statistics, Georgia State University, currently employed by Precision MedCare as a Scientist
- Sergey Klimov, PhD 2019, Department of Biology, Georgia State University, co-supervise with Prof. Ritu Aneja, currently employed by Deloitte as Bioinformatics Consultant
- Howard Smith, PhD 2018, “A Computational Study of Biofilm Development and Dispersal” Department of Mathematics and Statistics, Georgia State University, currently Senior Data Analyst at FISERV.
- Xiuxiu He, PhD 2018, “Integrated Mathematical and Experimental Study of Cell Migration and Shape” Department of Mathematics and Statistics, Georgia State University, currently postdoc at Sloan Kettering Memorial Cancer Center
- Kimberly Kanigal-Winner, PhD 2015, Department of Biology, University of New Mexico, co-supervised with Profs. Melanie Moses and Bridget Wilson, currently research scientist at University of Colorado.

- Sotiris Prokoprious, PhD 2012, School of Mathematics, Nottingham, co-supervise with Profs. Marcus Owen and Helen Byrne, currently researcher at the CoSMo Company.
- Jialiang Wu, PhD 2011, Department of Biomedical Engineering, Georgia Institute of Technology, co-supervise with Prof. Eberhard Voit.
- Yilin Wu, PhD 2009, Department of Physics, University of Notre Dame, co-supervise with Prof. Mark Alber, currently Associate Professor at Chinese University of Hong Kong.
- Amy Bauer, PhD 2007, Department of Mathematics, University of Michigan, co-supervise with Prof. Trace Jackson, currently Research Staff Member at Los Alamos National Laboratory.
- Maria Kiskowski, PhD 2004, Department of Mathematics, University of Notre Dame, co-supervise with Prof. Mark Alber, currently Associate Professor at University of Mississippi.

#### **Short-Term/Summer PhD Students**

- Naithon Henning (Aug 2019 – May 2020, Department of Mathematics and Statistics, Georgia State University)
- Xiaona Li (Aug 2016 – May 2018, Department of Mathematics and Statistics, Georgia State University)
- Anqi Pan (Aug 2017 – July 2018, Department of Mathematics and Statistics, Georgia State University)
- Ludmila Petrova (Jan-May 2011, School of Medicine, Emory University, co-supervise with Prof. Erwin Van Meir)
- Gautam Muralidhar (Summer 2009, Department of Biomedical Engineering, University of Texas Austin)
- Nicolas Sloss (June 2006, Spectrometrie Physique, Universite Grenoble, France)
- Kevin Flores (Summers 2006, 2007, Department of Mathematics, Arizona State University)
- Zhiying Sun (Summer 2007, Department of Mathematics, University of Arizona)
- Santanu Charterjee (Summer 2006, Department of Computer Sciences, University of Notre Dame)
- Matt Rissler (Summer 2005, Department of Mathematics, University of Notre Dame)
- Kejing He (May-November, 2004, Department of Computer Sciences, Southern China University of Technology, China)
- Christophe Raufaste (Summer 2004, Spectrometrie Physique, Universite Grenoble, France)

#### **PhD Thesis Committee**

- Yuke Wang (Biostatistics, 2023)
- Yan Hai (Statistics, 2020)
- Heta Desai (Computer Science, 2020)
- Guanhao Wei (2019)
- Surajit Bhattacharya (Biology, 2017)
- Jie Zhang (Mathematics, 2016)
- Yanhong Wang (Statistics, 2015)

### **Master Students at Georgia State University**

- Victor Agboli, 2023 -
- Famotire Akinwale Victor, 2022 –
- Yutao Yan, MS Statistics, 2022 – 2023
- Austin Ezuma, MS Biostatistics, 2022
- Seyifunmi Owoeye, MS Applied Math, 2022
- Grace Yu, MS Biostatistics, 2021
- Anthony Morciglio, MS Bioinformatics, 2021.
- Neda Yazdianpour, MS Bioinformatics, 2019.
- Yihong Zhang, MS Biostatistics, 2019.
- Ji Xin, MS Statistics 2018.
- Regina Chang, MS Statistics 2016.
- Jianxu Li, MS Statistics 2016.
- Haitao Huang, MS Statistics 2016.
- Bin Zhang, MS Physics 2016, Emory University
- Haoyu Chen, MS Physics 2015, Emory University
- Siyu Tian, MS Bioinformatics 2014.
- Michael Boring, MS Statistics 2014.
- Jie Yu, MS Statistics 2012.
- Micheal Folarinde, MS Statistics 2012.

### **Undergraduate Students**

- Isaac Goodspeed (2023 – present, Department of Mathematics, GSU)
- Yixuan Li (2023 – present, Department of Biology, GSU)
- Bereket Yoseph (2023 summer, Math Path summer program, Department of Computer Sciences, GSU)
- Yiting Zhang (2023 summer, Math Path summer program, Department of Biology, GSU)
- William Chandler (2022 – 2023, Department of Mathematics and Statistics, GSU)
- Charles Holst (2021 – 2022, Department of Mathematics and Statistics, GSU)
- Jake Coldiron (2020 – 2021, Honor’s College, School of Public Health, GSU)
- Winter Robinson (2019 Fall, Dept Mathematics and Statistics, GSU)
- Anthony Morciglio (2019 Fall, Dept Mathematics and Statistics, GSU)
- Anthony Morciglio (2019 summer, MBD Fellowship, Dept Mathematics and Statistics, GSU)
- Andrew Peng (2018 –2019, Honor’s College, GSU)
- Andira Mahardhika Putri (2016 – 2018, Dept Mathematics and Statistics, GSU)
- Noah Albritton (2016 – 2017, Department of Mathematics and Statistics, GSU)
- Johanne Melissa Germain (2017 summer, Department of Psychology and Biology, GSU)
- Madison Hanberry (2017 summer, Department of Physics, GSU)
- Sean Keeler (2015 – 2017, Department of Mathematics and Statistics, GSU)
- Ivan Solis (2015 – 2016, Department of Biology, GSU)
- Tobi Ogunyale (2015 – 2016, Department of Computer Science, GSU)

- Hao Nguyen (2016, Department of Computer Science, GSU)
- Sena Nur Arbag (summer 2015, Medical School, Hacettepe University, Turkey)
- Kinin Kone (2012-2013, Department of Mathematics and Statistics, GSU)
- Sarran Astrid Deigna (2012-2013, Dept Mathematics and Statistics, GSU, RIMMES Program)
- Gabriela Hernandez (2012-2013, Department of Mathematics and Statistics, GSU)
- Jonathan Viswasan (2012-2013, Department of Biology, GSU)
- Emily Young (Summer 2012, BRAIN Program, Department of Biology, Georgia Tech)
- Ken Lee (2011-2012, Department of Physics, GSU)
- Siri (Emma) Ader (Summer 2009, as a high-school graduate)
- Christine Suss (Summer 2007, Department of Physics, Clarkson University)
- Kristin White (Summer 2007, Department of Biology, Allegheny College)
- Cris Cecka, Alan Davidson, Tiffany Head, Dana Mohamed, Liam Robinson (2005-2006, Harvey Mudd College, Math Clinic)
- Charles Cantrell (Summer 2003, Department of Materials Science, MIT)
- Jason Slaunwhite (Summer 2003, Department of Physics, Ohio State University)
- Jelena Pjesivac-Grbovic (Summers 2001, 2002, 2003, Department of Physics and Computer Science, Ramapo College of New Jersey)

### **High-school Students**

- Frank Hu (summer 2017)
- Evan Nanaj (summer 2017)
- Jie Bian (summer 2016)
- Stephen Li (summer 2016)

## **SYNERGISTIC ACTIVITIES**

### **National Service**

- Member, q-Bio Conference Governing Board (2020-present).
- Chair, q-Bio Conference Governing Board (2016 - 2019).
- Member, q-Bio Conference Governing Board (2013-2015).
- Member, Scientific Committee, Society for Mathematical Biology Annual Meeting (2016)
- Chair, Society for Mathematical Biology Annual Meeting (2015)
- Member, World Outreach Committee, Society for Mathematical Biology (2007-2017)

### **Georgia State University Service**

#### **University**

- Member, University Senate Research Committee (2021 - )
- Member, University Senate Cultural Diversity Committee (2021 - )
- Member, University Senate (2021 - )
- Chair, Asian & Asian American Faculty Identity Group Steering Committee (2020-2022)
- Member, Asian & Asian American Faculty Identity Group (2022 - )
- Member, Task Force for China Studies (2013-2018).

- Member, Task Force for Insight Institute, Robinson School of Business (2014-2015)
- Member, University Senate (2014-2016)
- Member, University Senate Statutes and Senate Bylaws Committee (2014-2016)
- Member, University Senate Library Committee (2014-2016)

#### **College of Arts and Sciences**

- Member, Steering Committee, Imaging Hub (2022 - )
- Member, College Executive Committee (2022- )
- Member, College of Arts and Science Diversity and Equality Working Group (2018-present)
- Member, College of Arts and Science Strategic Plan Working Group (2017)
- Chair, 2CI Disease Modeling Senior Hire Committee (2013-2016)
- Chair, Next Generation Senior Hire Committee (2016-2018)
- Member, Working Committee of Molecular Based Disease Program (since 2013)

#### **Department of Mathematics and Statistics**

- Member, Department Applied Math TT Faculty Search Committee (2021 – 2022)
- Member, Imaging Hub Junior and Senior Hiring Committee (2021 – )
- Member, Department Executive Committee (2021-2023)
- Member, Applied Math Concentration Proposal Committee (2021)
- Chair, Senior Applied Statistician Hiring Committee (2019 – present)
- Member, Department Bylaw Committee (2019-2020)
- Graduate Director of Department of Mathematics and Statistics (2018-2019)
- Chair, Search Committee to Tenure Track Assistant Professor in Applied Math (2017-2018)
- Chair, Search Committee for Visiting Assistant Professor (2016-2017)
- Chair, Applied Analyst Search Committee (2012-2013)
- Chair, Biostatistics Faculty Search Committee (2011-2012)
- Chair, Lecturer Search Committee (2011-2012)
- Member, Department Executive Committee (2015-2017)
- Member, Search Committee for Visiting Assistant Professor (2013 - 2015)
- Member, Search Committee for Statistics Tenure Track Position (2013-2014)
- Chair, Honors and Awards Program (2013-2022)
- Member, Applied Mathematics and Statistics Undergraduate Subcommittee (2013-present)
- Chair, Distinguished Lecture and Colloquium Committee (2012-2015)
- Member, Distinguished Lecture and Colloquium Committee (2015 -)
- Member, Bioinformatics and Statistics Graduate Committee (2013 - )
- Member, Graduate Student Committee (2011-)
- Member, Undergraduate Subcommittee (2011-)

#### **Los Alamos National Laboratory Service**

- Member, Selection Committee for Theoretical Division Leader, Los Alamos National Laboratory (2007).

- Member, Selection Committee for Laboratory Fellows, Los Alamos National Laboratory, (2004).

### **Current Professional Membership**

- Society for Mathematical Biology
- American Physical Society
- American Association for the Study of Liver Diseases
- Biophysical Society

### **Editorial Boards**

- Associate Editor, *Frontiers Physiology* (2020 – present)
- Mathematical Biosciences and Engineering, *AIMS* (2013 - present).
- Academic Editor, *PLoS One* (2018 – present)
- Guest Editor, *PLoS Computational Biology* (2014), *PLoS One* (2014).
- Guest Editor, *Physical Biology Special Issues for q-Bio* (2012-2015).
- *From Nonliving to Living Matter*, MIT Press (2005-2006).
- Associate-Editor, Special Issue: Multiscale Modeling and Simulation, Society for Industrial and Applied Mathematics (2003-2004).

### **Journal Referee**

- *Physics Review Letter*, *Physical Review E*, *Biophysical Journal*, *Physical Biology*, *Physica D*, *Journal of Physics A*, *Proceedings of National Academy of Science USA*, *PLoS Computational Biology*, *PLoS One*, *Journal of Theoretical Biology*, *Journal of Statistics*, *Bulletin of Mathematical Biology*, *Journal of Mathematical Biology*, *Nonlinearity*, *Cancer Research*, *Radiological Cancer Research*, *Computing in Science and Engineering*, *Mathematical Biosciences and Engineering*, *IET Systems Biology*, *Systems Biology and Applications*, *Neural Computing and Applications*, *BMC Systems Biology*, *Mathematical Biosciences*, *Frontiers Physiology*.

### **Grant Reviews**

- Ad hoc member, NIH Modeling and Analysis of Biological Systems Study Section (MABS), June 2023
- Ad hoc member, NIH Modeling and Analysis of Biological Systems Study Section (MABS), June 2022
- Ad hoc member, NIH Cancer Systems Biology, November 2021.
- Ad hoc member, NIH Modeling and Analysis of Biological Systems Study Section (MABS), February 2021
- Ad hoc member, NIH Special Emphasis Panel, January 2021.
- Ad hoc member, NIH Modeling and Analysis of Biological Systems Study Section (MABS), June 2020.
- Ad hoc member, NIH Special Emphasis Panel/Scientific Review Group, April 2020.
- Ad hoc member, NIH Directors New Innovator Award, December 2019
- Ad hoc member, NIH NCI Special Emphasis Panel/Scientific Review Group 2019/08 ZCA1 SRB-1 (A1), June 2019

- Ad hoc member, NIH Modeling and Analysis of Biological Systems Study Section (MABS), June 2018.
- Ad hoc member, NIH Cancer Tissue Engineering Collaborative Research Study Section, November 2017.
- Ad hoc member, NIH NCI Research Specialist Award (R50) Study Section, June 2017.
- Ad hoc member, NIH NCI omnibus R03/R21 Cancer Genetics and Biomarkers Study Section, March 2017.
- Ad hoc member, NIH NCI Research Specialist Award (R50), June 2016.
- Ad hoc member, NIH Cancer Immunopathology and Immunotherapy (CII) Study Section, October 2015.
- Ad hoc member, NIH Bioengineering Sciences and Biocomputational and Modeling Special Emphasis Panel, October 2015.
- Ad hoc member, NIH Modeling and Analysis of Biological Systems Study Section (MABS) Study Section, February 2015.
- Ad hoc member, NIH Study Section for Collaborative Research in Integrative Cancer Biology, February 2015.
- Ad hoc member, NIH Study Section for Collaborative Research in Integrative Cancer Biology, October 2014.
- Ad hoc member, NIH Study Section for Collaborative Research in Integrative Cancer Biology, March 2014.
- Ad hoc member, NIH Study Section for Oncological Sciences AREA Grant Applications, March 2014.
- Ad hoc member, NIH Study Section for Oncological Sciences AREA Grant Applications, September 2013.
- Ad hoc member, NIH Modeling and Analysis of Biological Systems Study Section (MABS) Study Section, October 2012.
- Ad hoc member, NIH Cancer Immunopathology and Immunotherapy (CII) Study Section, June 2012.
- Ad hoc member, NIH Modeling and Analysis of Biological Systems Study Section (MABS) Study Section, September 2011.
- Ad hoc member, NIH Study Section for Collaborative Research in Integrative Cancer Biology and the Tumor Microenvironment, March 2010.
- Ad hoc member, NIH Workgroup for Collaborative Research in Integrative Cancer Biology and the Tumor Microenvironment, January 2010.
  
- NSF Panel for Cyber-Enabled Discovery and Innovation (CDI), June 2008.
- Review Committee, Homeland Defense LDRD Proposals, Los Alamos, February 2002.
  
- GSU Internal Research Grants (2015-present)
- GSU Dissertation Grants (2016-present).

### **Summer School Organization**

- The q-bio Summer School on Cellular Information Processing, Los Alamos, NM (2007-2009) - founding organizer



### Conference/Workshop Organization

- Organizing Committee, the 2024 SIAM-Life Sciences, Portland, Oregon, July 2024.
- Chair, Program Committee, the 2023 q-Bio Conference, Shenzhen, China, July 29- Aug 1, 2023.
- Program Committee, the 2022 q-Bio Conference, Fort Collins, Colorado, June 15-17, 2022.
- Special Sessions on Modeling in Health and Diseases, American Institute of Mathematical Sciences (AIMS) Conference, Taipei, July 5-9, 2018.
- The q-Bio Conference, Santa Fe, NM (2007-2014), Blacksburg, VA (2015), Nashville TN (2016), Rutgers, NJ (2017) – co-founding organizer
- The 2015 Annual Meeting for the Society for Mathematical Biology, Atlanta, GA, June 29-July 3, 2015. Conference Chair.
- Minisymposium on Cell-ECM Interactions, Society for Mathematics Biology Annual Meeting, Osaka, Japan, July 28-Aug 1, 2014.
- Training Workshop for High School Science Teachers from Atlanta Public Schools, Georgia State University, May 27–31, 2014 (with Iman Chahine).
- Training Workshop for High School Math Teachers from Atlanta Pubic Schools, Georgia State University, June 3-8 2013 (with Iman Chahine, Mariana Montiel).
- Minisymposium on Bridging Experiments and Mathematical Models, Annual Meeting Society for Mathematical Biology, Knoxville, July 25-28, 2012
- Minisymposium on Cell-Based Modeling in Biology and Medicine, Annual Meeting of The Society for Mathematical Biology, Krakow, Poland, June 28 - July 2, 2011.
- Physics of Cancer Seminar and Lecture Series, Los Alamos, 2009-2010.
- Minisymposium on Mathematical Modeling of Cancer Development, First Joint Society for Mathematical Biology and Chinese Society for Mathematical Biology Meeting, Hangzhou, China, June 14 - 17, 2009.
- Minisymposium on Multiscale Modeling of Biological Systems, Society of Mathematical Biology Annual Meeting, Toronto, July 30 - August 2, 2008
- Biocomplexity Workshop VIII: Methods of Stochastic Systems and Statistical Physics in Biology, Notre Dame, October 28-30, 2005 (with Mark Alber and Holly Goodson).
- Minisymposium: Biophysics Problems with Multiple Scales, SIAM Annual Meeting, New Orleans, July 11-15, 2005.
- Processes of Life Seminar Series, Center for Nonlinear Studies, Los Alamos National Laboratory, 2001 - 2003.
- Biocomplexity Workshop V: Multiscale Modeling in Biology, Notre Dame, IN, August 14-17, 2003 (with James Glazier, A-L. Barabasi, and Mark Alber).
- CNLS Annual Conference on Networks: Structure, Dynamics and Function, Santa Fe, May 12-16, 2003 (with Zoltan Toronczki, Eli Ben-Naim, Benjamin McMahon, Gabriel Istrate, Stephen Eubank, Hans Frauenfelder, Paul Fenimore, and Charles Reichhardt).
- Bridging the Canyon between Biology and Theory, Santa Fe, September 13-14, 2001 (with Bette Kober).
- Nonlinear Phenomena in Complex Systems, Los Alamos, May 17-18, 1999 (with Yi Li).