

CURRICULUM VITAE QING NIE

University of California, Irvine
 Department of Mathematics
 Center for Mathematical & Computational Biology
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EDUCATION

- The Ohio State University, Columbus, Ohio 1995
Ph.D. in Mathematics. Advisor: Gregory Baker
- Wuhan University, P.R. China 1990
M.S. in Computational Mathematics
- Wuhan University, P.R. China 1988
B.S. in Computational Mathematics

POSITIONS HELD

- University of California, Irvine*
Director – Center for Mathematical and Computational Biology (CMCB) 2005-
Acting Director
 2010-
Associate Director
 2008-
 UCI Campus-wide Interdisciplinary Ph.D. Gateway Program on Mathematical and
 Computational Biology (MCB) 2005-
Professor
Chancellor’s Fellow (2005-2008)
 Department of Mathematics
 Department of Biomedical Engineering (Affiliated faculty)
 Center for Complex Biological Systems
 Chao Family Comprehensive Cancer Center 2011-
Associate Professor – 2002-2005
 Department of Mathematics
 Department of Biomedical Engineering
 Center for Complex Biological Systems
Assistant Professor – Department of Mathematics 1999-2002
 •*The University of Chicago*
L.E. Dickson Instructor – Department of Mathematics 1997-1999
 (Mentors: Peter Constantin and Todd Dupont)
 •*University of Minnesota*
Postdoctoral Fellow – Institute for Mathematics and Its Application 1996-1997
 Annual Program on Mathematics in High-Performance Computing
 •*The Ohio State University*
Postdoctoral Researcher & Lecturer – Department of Mathematics 1995-1996

AWARDS and DISTINGUISHED LECTURES

- **Distinguished visitor**, College of Arts and Sciences, Ohio State University 04-05/2011
- **Distinguished Lecture**, Information Science and Technology Center,
 Colorado State University 11/2008
- **Chancellor’s Fellow**, University of California, Irvine 2005-2008
 (<http://www.ap.uci.edu/distinctions/titles.html#chancprof>)
- **Faculty Career Development Award**, University of California, Irvine 2001-2002

RESEARCH GRANTS

Current:

- *Training Grant on “Mathematical, Computational and Systems Biology”*
PI: One of the two multiple PIs; NIBIB/NIH (T32 EB09418); \$1.1M 2009-2014
- *National Center for Systems Biology – “Spatial Dynamics and Information Flows”*
PI: Leader for Theme on Mathematics and Computations;
 (One of six PIs for the entire grant), NIGMS/NIH (P50GM76516); \$15M 2007-2012
- *Computational Analysis of Morphogenesis*
PI: Single PI; NSF DMS (DMS-0917492); \$250K 2009-2012
- *Specificity and Spatial Dynamics of Cell Signaling: Theory and Experiment*
PI; NIGMS/NIH (R01GM75309); \$1.2M 2005-2011
- *Principle of Robust Developmental Patterning*
PI: One of the three multiple PIs; NIGMS/NIH (R01GM67247-9); \$1.8M 2011-2014
- Past:**
- *Principle of Robust Developmental Patterning*
Co-PI; NIGMS/NIH (R01GM67247-5); \$1.6M 2007-2010
- *Role of Ovol Genes in Epidermal Development – Supplement*
PI: NIH (R01AR47320-08S1); 150K 2008-2010
- Developing a New Interdisciplinary Ph.D. Program on Mathematical,
Computational and Systems Biology
Co-PI; Howard Hughes Medical Institute (HHMI-56005680); \$1.0M 2006-2009
- *Morphological Evolution in Materials*
PI; DMS/NSF Program on Computational Mathematics (DMS0511169) 2005-2009
- *Morphogen Systems: A Joint Mathematical and Experimental Investigation*
Co-PI; NIGMS/NIH Mathematical Biology Initiative (R01GM67247-1); \$1.4M 2002-2006
- *Transport and Complexity in Biological Systems*
Co-PI; NIGMS/NIH (P20GM66051); \$0.7M 2002-2006
- *Computational of Interface Dynamics in Fluids and Materials*
PI; DMS/NSF Program on Computational Mathematics (DMS0074414) 2000-2003
- *Scientific Computing Research Environments*
Co-PI; NSF (DMS0112416) 2001-2003

SYNERGETIC ACTIVITIES

- NSF Review Panels – MPS/DMS and BIO/MCB 2005 -
- NIH/NIGMS, NICHD, NCI Study Sections 2006 -
- Howard Hugh Medical Institute and NIH Annual Meetings
 on Interface Programs 2006-2009
- NIH/NIGMS Annual Meetings for National Centers for Systems Biology 2006-2011
- Member of Thesis Award Committee, Biophysics Division, APS 2009
- Member of Organization Committee, Meeting for Life Sciences, SIAM 2008
- Members: American Association for the Advancement of Science, 1999 -
 Society for Industrial and Applied Mathematics (SIAM),
 American Physical Society (APS)

EDITORIAL BOARD

- Mathematical Biosciences and Engineering* 2006-
- Discrete and Continuous Dynamical System-B* 2010-
- Journal of Bioengineering and Biomedical Science* 2011-

VISITING POSITIONS

- *Institute for Pure and Applied Mathematics, UCLA*
Core Participant 03-06/06
- “Cell and Materials: At the Interface between Mathematics, Biology and Engineering”
- *Mathematical Biosciences Institute, The Ohio State University*
Long-Term Visitor 11/03
- “Mathematical Modeling of Cell Process”
- *Institute for Pure and Applied Mathematics, UCLA*
Short-Term Visitor 02/03
- “Workshop on Cell & Materials: at the Tissue Engineering Interface”
- *Institute for Pure and Applied Mathematics, UCLA*

UNIVERSITY & DEPARTMENTAL SERVICES

- Chair, Recruitment Committee for campus-wide faculty search on Systems Biology, University of California, Irvine 2008-2009
2010-2011
2011-2012
- Member, Dean Search Committee, School of Physical Sciences, UCI 2011
- Chair, Steering Committee, School of Physical Sciences, UC, Irvine 2009-2011
- Member, U. of California Divisional Senate Assembly, UCI 2009-2011
- Chair, Recruitment Committee for campus-wide faculty search on systems biology, University of California, Irvine 2007-2008
- Chair, Distinguished Lecture Selection Committee; Dept. of Mathematics, UCI 2007-2008
- Chair, Visiting Assistant Professor Recruiting Committee; Dept. of Math, UCI 2005-2006
- Member, Chairperson Selection Committee; Dept. of Mathematics, UCI 2004
- Undergraduate Advisor and founding faculty member for Specialization in Applied and Computational Mathematics; University of California, Irvine 2001-2004
- Member, University Council for Research, Computing and Library Resources , University of California, Irvine. 2002-2005

PUBLICATIONS

Submitted Manuscripts

- 67. W. Lo, M. Wang, L. Chen, and Q. Nie. Efficient and Robust Methods for Steady State Patterns in Reaction-Diffusion Systems. 2011
- 66. L. Zhang, A. Lander, Q. Nie. A Reaction-Diffusion Mechanism Influences Cell Lineage Progression as a Basis for Formation, Regeneration, and Stability of Intestinal Crypts. 2011
- 65. J. Lei, Q. Nie, Y. Song, F. Wan. Formation of Morphogen Gradient by Heparan Sulfate Proteoglycans, 2011
- 64. A. Cai, K. Radtke, A. Linville, A. Lander, Q. Nie*, T. Schilling*. Intracellular binding proteins integrate retinoic acid transport and degradation to create a robust morphogen gradient, *Co-corresponding authors, 2011.
- 63. A. Cai, L. Wang, Q. Nie. Cell Division Can Eliminate Bimodality in Bistable Feedback Systems. 2011.
- 62. C. Chan, X. Liu, L. Wang, L. Bardwell, Q. Nie*, and G. Enciso*. Protein Scaffolds Can Enhance the Bistability of Multisite Phosphorylation Systems. *Co-corresponding authors, 2011.
- 61. S. Zhou, W. Lo, J. Suhaim, M. Digman, E. Gratton, Q. Nie, and A. Lander. Extracellular Diffusion Creates the Dpp Morphogen Gradient of the Drosophila Wing Disc. 2011.

Published Journal Articles

- 60. C. Chou, L. Bardwell, Q. Nie*, T. Yi*. Noise Filtering Tradeoffs in Spatial Gradient Sensing and Cell Polarization Response. *Co-corresponding authors, BMC Systems Biology, **5**:196 2011.
- 59. S. Zhao, J. Ovadia, X. Liu, Y.T. Zhang. Q. Nie. Operator Splitting Implicit Integration Factor Methods for Stiff Reaction-diffusion-Advection Systems. *J. of Computational Physics*, 230(15), pp 5996-6009, 2011.
- 58. Z. Zheng, C. Chou, T. M. Yi, Q. Nie. Mathematical Analysis of Steady-State Solutions in Compartment and Continuum models of Cell Polarization. *Mathematical Biosciences and Engineering*. 8(4), 2011.
- 57. J. Lei, F.Y.M. Wan, A. Lander, Q. Nie. Robustness of Signaling Gradient in Drosophila Wing Imaginal Disc. *Discrete and Continuous Dynamical Systems-B*, 16(3), 2011.

- 56. C. Chou, W. Lo, K. Gokoffski, Y. Zhang, F. Wan, A. Lander, A. Calof, and Q. Nie. Spatial Dynamics of Multi-stage Cell Lineages in Tissue Stratification. *Biophysical Journal*, 99(10), 2010.
- 55. L. Wang, Q. Nie, G. Enciso. Non-Essential Sites Improve Phosphorylation Switch. *Biophysical Journal*, 99(6), 2010.
- 54. S. Haney, L. Bardwell, Q. Nie. Ultrasensitive Responses and Specificity in Cell Signaling. *BMC Systems Biology*, 4 (119), 2010.
- 53. S. Christley, B. Lee, X. Dai and Q. Nie. Integrative multicellular biological modeling: a case study of 3D epidermal development using GPU algorithms. *BMC Systems Biology*, 4(107), 2010.
- 52. L. Wang, J. Xin, and Q. Nie. A Critical Quantity for Noise Attenuation in Feedback Systems. *PLoS Computational Biology*, 6(4): e1000764, 2010.
- 51. X. Liu and Q. Nie. A Compact Integration Factor Method for Complex Domains and Adaptive Mesh Refinement. *Journal of Computational Physics*. 229, pp 5692-5706, 2010.
- 50. A.D. Lander, Q. Nie, B. Vargas, and F. Y. M. Wan. Wing Size and Robustness of Dpp Gradient in Drosophila Wing Disc. *J. of Mechanics of Materials and Structures (JoMMS)*. 6:1, pp321-350, 2011.
- 49. X. Liu, L. Bardwell, and Q. Nie. A Combination of Multisite Phosphorylation and Substrate Sequestration Produces Switch-Like Responses. *Biophysical Journal*, 98(8), pp1396-1407, 2010
- 48. J. Lei, G. He, H. Liu, and Q. Nie. A Delay Model for Noise-Induced Bi-directional Switching. *Nonlinearity*, 22, pp2845-2859, 2009.
- 47. S. Christley, Q. Nie, and X. Xie. Incorporating Existing Network Information into Gene Network Inference. *PLoS ONE* 4(8): e6799, 2009.
- 46. J. Wells, B. Lee, A. Cai, A. Karapetyan, W. Lee, E. Rugg, S. Sinha, Q. Nie, and X. Dai. Ovol2 Suppresses Cell Cycling and Terminal Differentiation of Keratinocytes by Directly Repressing C-Myc And Notch1. *J.of Biological Chemistry*, 284, pp 29125-29135, 2009.
- 45. A. Cai, Y. Peng, J. Wells, X. Dai, and Q. Nie. Multi-scale Modeling for Threshold Dependent Differentiation. *Math. Model of Nat. Phenom.* 4(4), pp 103-117. 2009.
- 44. X. Li and Q. Nie. A High-order Boundary Integral Method for Surface Diffusions on Elastically Stressed Axi-symmetric Rods. *J. of Computational Physics*, 228(12), pp 4625-4637, 2009.
- 43. A.D. Lander, W. Lo, Q. Nie, and F.Y.M. Wan. The Measure of Success: Constraints, Objectives, and Tradeoffs in Morphogen-Mediated Patterning. *Cold Spring Harb Perspect Biol* 1:a002022, 2009.
- 42. A.D. Lander, K. Gokoffski, F.Y.M. Wan, Q. Nie, and A. Calof. Cell Lineages and the Logic of Proliferative Control. *PLoS Biology*, 7(1): e1000015, 2009.
- 41. W. Lo, C. Chou, K. Gokoffski, F.Y.M. Wan, A.D. Lander, A. Calof, and Q. Nie. Feedback Regulation in Multistage Cell Lineages. *Mathematical Biosciences and Engineering*, 6(1), pp59-82, 2009.
- 40. Y. Zhou, J. He, and Q. Nie. A Comparative Runtime Analysis of Heuristic Algorithms for Satisfiability Problems. *Artificial Intelligence*, doi, 1016, 173(2), 2009.
- 39. A.D. Lander, Q. Nie, F.Y.M. Wan, and Y. Zhang. Localized Ectopic Expression of Dpp Receptors in a Drosophila Embryo. *Studies in Applied Mathematics*, 123, pp 175-214, 2009.
- 38. T. Moore, C.S. Chou, Q. Nie, N.L. Jeon, and T. M. Yi. Robust Spatial Sensing of Mating Pheromone Gradients by Yeast Cells. *PLoS ONE*, 3(12): e3865, 2008.
- 37. S. Chou, S. Zhao, Y. Song, H. Liu, and Q. Nie. Fus3-triggered Tec1 Degradation Modulates Mating Transcriptional Output during the Pheromone Response. *Nature Molecular Systems Biology*, 4:212, 2008.
- 36. C.S. Chou, Q. Nie, and T. M. Yi. Modeling Robustness Trade-offs in Yeast Cell Polarization Induced by Spatial Gradients. *PLoS ONE*, 3(9): e3103, 2008.

- 35. Q. Nie, F.Y.M. Wan, Y-T Zhang, and X-F Liu. Compact Integration Factor Methods in High Spatial Dimensions. *Journal of Computational Physics*, 227(10) pp 5238-5255, 2008.
- 34. D. Iron, A. Syed, H. Theisen, T. Lukacsovich, M. Naghibi, L.J. Marsh, F.Y.M. Wan, and Q. Nie. The Role of Feedback in the Formation of Morphogen Territories. *Mathematical Biosciences and Engineering*, 5(2) pp277-298, 2008.
- 33. R. White, Q. Nie, A.D. Lander, and T. Schilling. Complex Regulation of *cyp26a1* Creates a Robust Retinoic acid Gradient in the Zebrafish Embryo. *PLoS Biology*, 5(11), e304, 2007.
- 32. Y. Zhang, A.D. Lander, and Q. Nie. Computational Analysis of BMP Gradients in Dorsal-ventral Patterning of the Zebrafish Embryo. *Journal of Theoretical Biology*, 248, pp 579-589, 2007.
- 31. L. Bardwell, X. Zou, Q. Nie, and N. Komarova. Mathematical Models of Specificity in Cell Signaling. *Biophysical Journal*, 92, pp 3425-3441, 2007.
- 30. T. Yi, S. Chen, C. Chou, and Q. Nie. Modeling Yeast Cell Polarization Induced by Pheromone Gradients. *J. of Statistical Physics*, 128(1), pp193-207, 2007.
- 29. C. Chou, Y. Zhang, R. Zhao, and Q. Nie. Numerical Methods for Stiff Reaction-Diffusion Systems. *Discrete and Continuous Dynamical System-B*, 7(3), pp 515-525, 2007.
- 28. X. Li, V. Cristini, Q. Nie, and J. Lowengrub. Nonlinear Three-dimensional Simulation of Solid Tumor Growth. *Discrete and Continuous Dynamical System-B*, 7(3), pp 581-604, 2007.
- 27. A.D. Lander, Q. Nie, and F.Y.M. Wan. Membrane Associated Non-receptors and Morphogen Gradients. *Bulletin of Mathematical Biology*, 69, pp 33-54, 2007.
- 26. H. Theisen, A. Syed, B. Nguyen, T. Lukasovich, J. Purcell, G. Srivastava, D. Irons, K. Gaudenz, Q. Nie, F.Y.M. Wan, M. Waterman, and J. Marsh. Wingless Directly Represses DPP Morphogen Expression via an Armadillo/TCF/Brinker Complex. *PLoS ONE*, 2(1): e142. 2007.
- 25. X. Li and Q. Nie. Surface Diffusion on Stressed Solid Surface. *Communications in Computational Physics*, 2(1), pp 73-86, 2007.
- 24. Q. Nie, Y. Zhang, and R. Zhao. Efficient Semi-implicit Schemes for Stiff Systems. *Journal of Computational Physics*, 214, pp 521-537, 2006.
- 23. A.D. Lander, Q. Nie, and F.Y.M. Wan. Internalization and End Flux in Morphogen Gradient Formation. *Journal of Computational and Applied Mathematics*, 190(1-2), pp 232-251, 2006.
- 22. N. Komarova, X. Zou, Q. Nie, and L. Bardwell. A Theoretical Framework for Specificity in Cell Signaling. *Nature Molecular Systems Biology*, 1:2005.0023, 2005.
- 21. C. Mizutani, Q. Nie, F.Y.M. Wan, Y. Zhang, P. Vilmos, E. Bier, L. Marsh, and A.D. Lander. Formation of the BMP Activity Gradient in the Drosophila Embryo. *Developmental Cell*, 8(6), pp 915-924, 2005.
- 20. Y. Lou, Q. Nie, and F.Y.M. Wan. Effects of Sog on Dpp-Receptor Binding. *SIAM J. on Applied Math.*, 66(5), pp 1748-1771, 2005.
- 19. A.D. Lander, Q. Nie, and F.Y.M. Wan. Spatially Distributed Morphogen Production and Morphogen Gradient Formation. *Mathematical Biosciences and Engineering*, 2(2), pp 239-262, 2005.
- 18. A.D. Lander, Q. Nie, B. Vargas, and F.Y.M. Wan. Aggregation of a Distributed Source in Morphogen Gradient Formation. *Studies in Applied Mathematics*, 114(4), pp 343-374, 2005.
- 17. X. Li, K. Thornton, Q. Nie, P. Voorhees, and J. Lowengrub. Two- and Three-dimensional Equilibrium Morphology of a Misfitting Particle and the Gibbs-Thomson Effect. *Acta Materialia*, Vol 52/20, pp 5829-5843, 2004.
- 16. Y. Lou, Q. Nie, and F.Y.M. Wan. Nonlinear Eigenvalue Problems in the Stability Analysis of Morphogen Gradients. *Studies in Applied Mathematics*, Vol 113, pp 183-215, 2004.

- 15. X. Li, J. Lowengrub, Q. Nie, V. Cristini, and P. Leo. Microstructural Evolution in Three-Dimensional Inhomogeneous Elastic Media. *Metall. Mater. Tran. A*, 34A(7), pp 1421-1431, 2003.
- 14. V. Cristini, J. Lowengrub, and Q. Nie. Nonlinear Simulation of Tumor Growth. *J. of Mathematical Biology*, 46(3), pp 191-224, 2003.
- 13. A.D. Lander, Q. Nie, and F.Y.M. Wan. Do Morphogen Gradients Arise by Diffusion? *Developmental Cell*, Vol. 2, no. 6, pp 785-796, 2002.
- 12. Q. Nie. The Nonlinear Evolution of Vortex Sheets with Surface Tension in Axi-symmetric Flows. *J. of Computational Physics*, 174, pp 438-459, 2001.
- 11. Q. Nie and F. Tian. Singularities in Hele-Shaw Flows Driven by a Multipole. *SIAM J. on Applied Mathematics*, 62(2), pp 385-406, 2001.
- 10. P. Leo, J. Lowengrub, and Q. Nie. On an Elastically Induced Splitting Instability. *Acta Mater.* 49, pp. 2761-2772, 2001.
- 9. P. Leo, J. Lowengrub, and Q. Nie. Microstructural Evolution in Inhomogeneous and Anisotropic Elastic Media. *J. of Computational Physics*, 157, pp 44-88, 2000.
- 8. P. Constantin, Q. Nie, and N. Schorghofer. Front Formation in an Active Scalar. *Physical Review E*, 60(3), pp. 2858-2863, 1999.
- 7. P. Constantin, Q. Nie, and S. Tanveer. Bounds for Second Order Structure Functions and Energy Spectrum in Turbulence. *Physics of Fluids*, 11(8), pp. 2251-2256, 1999.
- 6. Q. Nie and S. Tanveer. A Note on Third Order Structure Functions in Turbulence. *Proc. Royal Soc. London A*, 455, pp 1615-1636, 1999.
- 5. P. Constantin, Q. Nie, and N. Schorghofer. Nonsingular Surface Quasi-Geostrophic flows. *Physics Letters A* 241, pp 168-172, 1998.
- 4. Q. Nie and G. Baker. Application of Adaptive Quadrature to Axi-symmetric Vortex Sheet Motion. *J. of Computational Physics* 143, pp. 49-69, 1998.
- 3. G. Baker and Q. Nie. The Asymptotic Motion of an Accelerating, Thick Layer of Inviscid Liquid. *Physics of Fluids* 10(1), pp. 101-112, 1998.
- 2. Q. Nie and F. Tian. Singularities in Hele-Shaw Flows. *SIAM J. on Applied Mathematics* 58(1), pp. 34-54, 1998.
- 1. Q. Nie and S. Tanveer. The Stability of a Two-Dimensional Rising Bubble. *Physics of Fluids* 7 (6), pp. 1292-1306, 1995.

Published Refereed Proceeding Articles and Book Chapters

- 4. Q. Nie and Y.-T. Zhang, Cell Biology Modeling Development, Encyclopedia of Applied and Computational Mathematics, Springer, accepted, 2011.
- 3. X. F. Liu and Q. Nie. Spatially-localized scaffold proteins may facilitate to transmit long-range signals. *Acta Mathematica, Scientia*, 29B (6), pp 1657-1669, 2009
- 2. J. Kao, Q. Nie, A. Teng, F.Y.M. Wan, A.D. Lander, and J. Marsh. Can Morphogen Activity be Enhanced by its Inhibitors? *Proceedings of the 2nd MIT Conference on Computational Fluid and Solid Mechanics*, pp1729-1733, 2003.
- 1. Q. Nie, S. Tanveer, T. Dupont, and X. Li. Singularity Formation in Free-Surface Stokes Flows. *Contemporary Mathematics*, Vol. 306, pp 147-165, 2002.

STUDENTS AND POSTDOCS

Supervised Postdoctoral Fellows (11)

- **Anna Cai**, Ph.D., University of Melbourne 2007-2011
Current position: Tenure-track Assistant Professor, U. of New South Wales, Sydney, Australia
- **Liming Wang**, Ph.D., Rutgers University 2008-2011
Current position: Tenure-track Assistant Professor, California State University, Los Angeles, CA
- **Hsiao-Mei Lu**, Ph.D., Bioengineering, University of Illinois at Chicago 2010-2011
Current position: Bioinformatics Scientist, Ambry Genetics, Aliso Viejo, CA

- **Scott Christley**, Ph.D., Computer Science, Notre Dame University 2008-2010
Current position: Research Scientist, Medical School, University of Chicago, Chicago, IL
- **Xinfeng Liu**, Ph.D., SUNY, Stony Brook 2006-2009
Current position: Tenure-track Assistant Professor, U. of South Carolina, Columbia, SC
- **Ching-Shan Chou**, Ph.D. Brown University 2006-2009
Current position; Tenure-track Assistant Professor, Ohio State University, Columbus, OH
- **Shanqin Chen**, Ph.D., Brown University 2005-2006
Current position: Tenure-track Assistant Professor, Indiana University at South Bend, South Bend, IN
- **Yongtao Zhang**, Ph.D., Brown University 2003-2006
Current position: Associate Professor, Notre Dame University
- **Jinzhi Lei**, Ph.D., Beijing Aeronautic & Aerospace University 2004-2005
Current position: Associate Professor, Tsinghua University, Beijing, China
- **David Iron**, Ph.D., University of British Columbia 2003-
2004 Current position: Associate Professor, Dalhousie University, Nova Scotia, Canada
- **Lan Pham**, Ph.D., The Ohio State University. 2001-2003
Current position: Owned business

Supervised Ph.D. Thesis (6)

- **Wing-Cheong Lo**; Ph.D. 06/2011
“Growth and Pattern Controls by Morphogen Gradients”
Current position: Postdoctoral Fellow at Mathematical Bioscience Institute at The Ohio State University, Columbus, Ohio
- **Su Zhao**; Ph.D. 06/2011
“Computational Study of Signaling Specificity and Epigenetic Regulation”
Current position: Software Engineer, Siemens PLM Software, Cypress, CA
- **Carlo Chan**; Ph.D. 06/2010
“Scaffold can Induce Bistability in Multisite Phosphorylation”
Current position: Visiting Assistant Professor, Central Oklahoma University, Edmond, OK
- **Seth Haney**; Ph.D. 06/2010
“Specificity, Ultrasensitivity and Polarization in Yeast Cell Mating”
Current position: Lecturer, University of San Diego, San Diego, CA
- **Rui Zhao**; Ph.D. 06/2006
“Computational Analysis of Morphogen Gradients.”
Position after graduation: Postdoc at Mathematical Biosciences Institute at Ohio State University, Columbus, Ohio (later declined due to health reasons).
Current position: Analyst, PayPal Inc., San Jose, CA
- **Myung Yun**; Ph.D. 09/2003
“Numerical Simulations of Microstructure Evolution in Three-Dimensional Inhomogeneous Elastic Media.”
Current position: Faculty, Department of Mathematics, East L.A. College, Los Angeles, CA

Supervised M.S. Thesis (3)

- **Yingying Li**, M.S. 12/2010
“Stability Analysis of a Cell Lineage Model for Colonic Crypt”
- **Ryan Moore**, M.S. 06/2004
“Spatial Effects of Scaffolds in Intra-Cellular Signaling”
Position after graduation: Asst. V.P.; Union Bank of California, Los Angeles, CA
- **Angie Teng**; M.S. 06/2004
“Effects of Sog on BMP Signaling”
Position after graduation: Aerospace Corporation, LA, California

Current Postdoctoral Fellows

- **Lei Zhang**, Ph.D., Penn. State University 2009-2012
- **Zhenzhen Zheng**, Ph.D. Chinese Academy of Science 2009-2012
- **Likun Zheng**, Ph.D., University of Minnesota 2011-2014

Current Ph.D. Students

•Yuyu Peng	Exp. 12/2011
•Meng Chen	Exp. 06/2013
•Jeremy Ovidia	Exp. 06/2013
•Dongyong Wang	Exp. 06/2013
•Alexander Gord	Exp. 06/2013

CONFERENCE ORGANIZED

• Mini-Symposium on Modeling, Analysis and Computational in Materials Science - Organizer; 3 rd SIAM meeting on Mathematical Aspects of Material Science; Philadelphia, PA	05/2001
• Mini-Symposium on Computational and Analysis of Interfaces in Materials Organizer; 50 th SIAM Annual Meeting	07/2002
• Mini-Symposium on Quantitative Studies of Complex Systems in Cell and Developmental Biology - Organizer; 2 nd SIAM Conference on the Life Sciences; Portland, OR	07/2004
• International Conference on High Performance Computing and Applications - Program Committee Member; Shanghai, P.R. China	08/2004
• Conference on Biology and Mechanics: Applications of Mathematics and Computations - Chair of the Organization Committee; Beckman Center for National Academics; Irvine, CA	05/2006
• Mini-Symposium on Bio-Mechanics of Tissues Organizer; 15 th U.S. National Congress on Theoretical and Applied Mechanics; Boulder, CO	06/2006
• Mini-Symposium on Modeling and Simulation for Tissue-Level and Multicellular Phenomena - Organizer; SIAM Conference on Life Science; Raleigh, NC	07/2006
• Conference on Advances in Scientific Computing Organizer & Scientific Committee Member; The University of Chicago, Chicago, IL	09/2007
• International Conference on Systems Biology Scientific committee member, Long Beach, CA	10/2007
• 1st UCI Symposium on Mathematical Systems Biology Chair of Organizing Committee. "Spatial Dynamics and Cell Signaling."	03/2008
• SIAM Life Science Meeting Member of Organizing Committee, Montreal, Canada	08/2008
• 31st Annual International Conference of the IEEE in Medicine and Biology Society Track Chair for "Advances in Theory and Clinical Applications of Biological Network Studies", Minneapolis, Minnesota	09/2009
• 2nd UCI Symposium on Mathematical Systems Biology Chair of Organization Committee, "Collective Dynamics in Biological Systems" Beckman Center of National Academics of Sciences and Engineering	01/2010
• IMA Hot Topics Workshop Chair of Organization Committee, Medical Device-Biological Interactions at the Material-Tissue Interface, Institute for Mathematics and Its Applications	09/2010

INVITED LECTURES

Conferences

- Mini-symposiums, 2nd SIAM meeting on mathematical aspects of material science, Philadelphia, 5/97
- Mini-symposiums in SIAM Annual Meeting at Toronto, 7/98
- Section on Nonlinear PDE, AMS Meeting at Chicago, 9/98
- Mini-symposium on Modeling, Analysis and in Materials Science 3rd SIAM meeting on mathematical aspects of material science, Philadelphia, 5/00
- Section on Nonlinear Waves, AMS-HK joint meeting, Hong Kong, 12/00
- Barrett Memorial Lectures on "New Directions and Developments in Computational Mathematics", U. of Tennessee, 5/01
- Workshop on Multiscale Analysis and Computation National Center for Theoretical Sciences, Taiwan, 6/02

- Mini-symposium on Computations and Analysis of Interfaces in Materials, 50th SIAM annual meeting, 7/02
- Mini-symposium, Satellite Conference on Scientific Computing of 2002, ICM, Xi'an, China, 8/02
- Workshop on Cell & Materials: at the Tissue Engineering Interface, Institute for Pure and Applied Mathematics, UCLA, 02/03
- Mini-symposium on Modeling of Biological Tissues, 2nd M.I.T. Conference on Computational Fluid and Solid Mechanics, MIT, 06/03
- Mini-symposium on The Role of Signaling Systems in Developmental Biology, 5th International Congress on Industrial and Applied Mathematics, 07/03
- Mini-symposium on Advances of Numerical Methods and Analysis for Interface Problems with applications, 5th International Congress on Industrial and Applied Mathematics, 07/03
- Workshop on Mathematical Challenges Arising in Cancer Models Mathematical Biosciences Institute, OSU, 11/03
- Workshop on Multi-scale Challenges in Soft Matter Materials, SAMSI, Research Triangle, North Carolina, 02/04
- Mini-symposium on Computational Modeling of Microstructure Evolution, 4th SIAM Conference on Mathematical Aspects of Materials Sci., Los Angeles, 05/04
- Mini-symposium on Mathematical Biology, AIMS' fifth International Conference on Dynamical Systems and Differential Equations, Pomona, 06/04
- Mini-symposium on Mathematics Inspired by Biology, AIMS' fifth International Conference on Dynamical Systems and Differential Equations, Pomona, 06/04
- Mini-symposium on Quantitative Studies of Complex Systems in Cell and Developmental Biology, 2nd SIAM Conference on the Life Sciences, Portland, 07/04
- Mini-symposium on Chemotherapy and Tumor Biology, International Conference for Mathematics in Biology and Medicine, Ann Arbor, 7/04
- Southwest Consortium on Mathematics in Life Science, Phoenix, ASU, 01/05
- Invited talk, Workshop on Cells and Materials: At the Interface between Mathematics, Biology and Engineering, Arrowhead, IPAM, UCLA, 06/06
- Plenary speaker, Workshop on Modeling, Analysis and Computations for Biological Applications, Institute of Mathematical Modeling and Scientific Computing, NCTU, Taiwan, 12/06
- Invited Speaker, Conference on Advances in Scientific Computing, The University of Chicago, 9/07
- Invited Speaker, International Congress for Chinese Mathematicians, Hangzhou, 12/07
- Invited Speaker, Symposium on Pattern Formation, AMS annual joint meeting, San Diego, 1/2008
- Keynote Speaker, Session on Computational Biology, International Conference on Computational and Experimental Engineering and Sciences, Honolulu, Hawaii, 3/2008.
- Invited Speaker, Symposium on Mechanisms of Positional Specification in Development, European Conference on Mathematical and Theoretical Biology, Edinburgh, Scotland, 07/08
- Invited Speaker, Symposium on Multi-scale Modeling of Biological Systems, Annual Meeting of The Society of Mathematical Biology, Toronto, 07/08
- Invited Speaker, Symposium on Cell signaling, SIAM Life Science Meeting, Montreal, 07/08
- Invited Speaker, International Conference of Mathematics, Taiwan Univ. Taipei, 07/09
- Invited Speaker, Workshop on Function and Dynamics of Biomolecules, Kavli Institute for Theoretical Physics China, Beijing, China, 07/09
- Invited Speaker, Computational Systems Biology Workshop, Shanghai University, 09/09
- Plenary Speaker, International Symposium on Optimization and Systems Biology, Zhangjiajie, China, 09/09
- Invited Symposium Speaker, SIAM Life Science Conference, Pittsburgh, 7/10

- Invited speaker, Mini-symposium, AMS sectional meeting, Notre Dame U. South Bend, 11/10
- Invited Speaker, International Congress for Chinese Mathematicians, Beijing, China, 12/10
- Invited Speaker, Symposium, AMS Sectional meeting, UNLV, Las Vegas, 04/11
- Invited Speaker, International Conference on Applied and Computational Mathematics and Interdisciplinary Research, Nankai University, Tianjin, China, 06/11
- Invited Speaker, Two Mini-symposiums, International Congress on Industrial and Applied Mathematics, Vancouver, Canada, 07/11
- Invited Speaker, Special Session on Mathematics and Statistic in Computational Biology, AMS Annual meeting, Boston, 1/12

Colloquium & Seminars

- IMA Postdoc Seminar; IMA, University of Minnesota, 03/97
- Applied Math. Seminar; Dept. of Mathematics, University of Chicago, 10/97
- Colloquium; Dept. of Mathematics, University of North Carolina at Chapel Hill, 02/98
- Colloquium; Dept. of Mathematics, University of California, Irvine, 12/98
- Colloquium; Dept. of Mathematics, NJIT, 01/99
- Colloquium; Dept. of Mathematics, Florida State University, 01/99
- Colloquium; Dept. of Mathematics, Iowa State University, 02/99
- Colloquium; Dept. of Mathematics, University of North Carolina at Chapel Hill, 02/99
- Applied Math. Seminar; Dept. of Mathematics, The Ohio State University, 05/99
- Applied Math. Seminar; Dept. of Mathematics, University of North Carolina at Chapel Hill, 02/00
- Analysis Seminar; Dept. of Mathematics, University of Southern California, 03/00
- Colloquium; Dept. of Control and Dynamical Systems, Caltech, 04/00
- Colloquium; Dept. of Mathematics, Purdue University, 05/00
- Numerical Analysis Seminar; Dept. of Mathematics, University of Maryland, 08/00
- Numerical Analysis Seminar; Dept. of Mathematics, North Carolina State University, 08/00
- Colloquium; Dept. of Applied Mathematics, Illinois Institute of Technology, 09/00
- Colloquium; Dept. of Bioengineering, University of Illinois at Chicago, 09/00
- Colloquium; Dept. of Mathematics, Purdue University, 11/00
- Colloquium; Dept. of Computational Mathematics, Wuhan University, China, 12/00
- Numerical Analysis Seminar, Dept. of Mathematics, University of California- San Diego, 06/01
- Applied Math. Seminar; Dept. of Mathematics, The Ohio State University, 06/01
- Colloquium; Dept. of Mathematics, Shenzhen University, China, 12/01
- Colloquium; Dept. of Applied and Computational Mathematics, Caltech, 05/02
- Colloquium; Dept. of Mathematics, Science & Technology University of Hong Kong, 08/02
- PDE and Numerical Analysis Seminar; Dept. of Mathematics, Florida State University, 11/02
- Applied Math./Statistical Mech. Seminar; Institute for Advanced Study, 10/02
- Scientific Computation & Applied Math. Seminar; Dept. of Mathematics, Florida State Univ., 11/02
- Colloquium; Dept. of Applied Math., Illinois Institute of Technology, 03/03
- Seminar; Institute for Comp. Engineering and Science (TICOM), Univ. of Texas, Austin, 04/03
- Mathematical Physics Seminar; Dept. of Mathematics, Univ. of Texas, Austin, 04/03
- Colloquium; Dept. of Mathematics, Penn State University, 04/03
- Applied Math. Seminar; Dept. of Mathematics, The Ohio State University, 05/03

- Seminar; Inst. for Comp. Math. and Sci. Computations., Chinese Academy of Sci., Beijing, 01/04
- Seminar; Dept. of Computational Mathematics, Beijing University, China, 01/04
- Seminar; Dept. of Mechanics and Engineering Sciences, Fudan University, China 01/04
- Seminar; Center for Sci. Computation and Math. Modeling, Univ. of Maryland, College Park, 02/04
- Colloquium; Applied and Computational Math., Penn State University, 01/05
- Numerical Analysis Seminar; Dept. of Mathematics, UC-San Diego, 02/05
- Colloquium; Dept. of Mathematics, The Ohio State University, 05/05
- Seminar; Institute of Mechanics, Chinese Academy of Science, Beijing, China 06/05
- Colloquium; Dept. of Computational Math., Wuhan University, China, 06/05
- Computational and Applied Math. Seminar; Dept. of Math., Iowa State Univ., Ames, IA, 09/05
- Applied and Computational Math. Seminar; School of Math., Georgia Tech. Univ., 11/05
- Colloquium on Applied Math.; Dept. of Mathematics, Notre Dame University, 03/06
- Computational Math. Seminar; Dept. of Applied Math., SUNY, Stony Brook, NY, 04/06
- Colloquium; Dept. of Math. Science, NJIT, 09/06
- Colloquium; Dept. of Mathematics, Michigan State University, East Lansing, 10/06
- PDE/Applied Mathematics Seminar, Dept. of Math., Indiana University, 1/07
- Colloquium, Department of Mathematics, Norte Dame University, 3/07
- Colloquium, Department of Mathematics, University of Central Florida, 4/07
- Applied Math. Seminar, Department of Math. Stanford University, 5/07
- Seminar, Department of Computational Math. Beijing Univ. Beijing, China, 07/07
- Colloquium, Zou Peiyuan Center for Applied Math. Tsinghua U. Beijing, China, 07/07
- Seminar, School of Math., Fudan U. Shanghai, China, 07/07
- Seminar, Department of Cellular and Molecular Biology, Colorado State U. 10/07
- Seminar, Mathematical Biology, UC Davis, 11/07
- Annual Computational & Theoretical Biology Symposium, Biomedical Engineering, Rice University, 12/07
- Annual Symposium, Institute of Mechanics, Chinese Academy of Sciences, 12/07
- Colloquium, Dept. of Math, Colorado State University, 11/08
- *Information Science and Technology Center Distinguished Lecture*, Colorado State University, 11/08
- Seminar, Mathematical Biology, Arizona State University, 2/09
- Colloquium, Applied Mathematics, IIT, 3/09
- Seminar, Bioengineering, U. of Illinois at Chicago, 3/09
- Colloquium, Department of Engineering Science and Applied Math, Northwestern U. 3/09
- Seminar, Department of Mathematics, UNC-Charlotte, 3/09
- Colloquium, Department of Mathematical Sciences, Worcester Polytechnic Institute, 4/09
- Colloquium, Department of Mathematical Sciences, UNLV, 4/09
- Colloquium, Department of Mathematics, U. of Miami, 4/09
- Colloquium, School of Information Science and Technology, East China Normal University, Shanghai, 09/09
- Seminar, Institute for Systems Medicine and Department of Mathematics, Shanghai Jiaotong University, Shanghai, 09/09
- Colloquium, Department of Bioengineering, U. of Illinois at Chicago, Chicago, 11/09
- Seminar on Systems Biology, Medical School, U. of Illinois of Chicago, Chicago, 11/09
- Colloquium, Department of Mathematics, University of South Carolina, Columbia, 3/10
- Colloquium, Department of Mathematics, University of Tennessee, Knoxville, 3/10
- Seminar, Center for Theoretical Biological Physics, UCSD, 4/10

- Seminars, School of Life Science and School of Mathematics, Sun Yet-Sen University, 5/10
- Seminar, Department of Systems Biology, Harvard Medical School, Harvard, 6/10
- Colloquium, Institute of Sciences, Shanghai Jiaotong University, Shanghai, 12/10
- Annual Symposium, Institute of Mechanics, Chinese Academy of Sciences, 12/10
- Colloquium, Dept. of Applied Mathematics and Statistics, U. of California, Santa Cruz, 04/11
- Colloquium, Mathematical Biosciences Institute, Ohio State U., 04/11
- Applied Math. Seminar, Dept. of Mathematics, Ohio State University, 05/11
- Colloquium, Department of Mathematics, California State University, Fullerton, 10/11
- Seminar, Bioinformatics and Systems Biology, UCSD, 11/11