

Jana L. Gevertz

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EDUCATION

- Ph.D. in Applied and Computational Mathematics**, Princeton University, 2009
Dissertation: Growing Heterogeneous Tumors in Silico
Advisor: Dr. Salvatore Torquato
- M.A. in Applied and Computational Mathematics**, Princeton University, 2006
GPA: 4.0
- B.A. in Mathematics** with a minor in Biology, Rutgers University (Honors Program), 2004
GPA: 3.986 (Highest Honors)

TEACHING EXPERIENCE

- Assistant Professor**, The College of New Jersey, September 2009-present
- Instructor and Teaching Assistant**, Rutgers University, 2003-2009
Instructor for Calculus 2 (Summer 2009), and Teaching Assistant for Precalculus (Fall 2003, Fall 2006, Spring 2008)
- Instructor for New Math Teacher Training Course**, Princeton University, 2008
Co-developed and taught a two-day course required for all new mathematics teaching assistants at Princeton University
- Teaching Transcript Program**, Princeton University, 2007-2009
Completed a multi-faceted program for Princeton University graduate students interested in developing as self-reflective teachers
- Assistant in Instruction**, Princeton University, Spring 2007
Assistant in Instruction for a mathematically-oriented Advanced Physical Chemistry course
- Peer Mentor**, Rutgers University, 2002-2003
Co-organized and conducted sessions in which honors calculus students tackled challenging problems related to course material
- Mathematics Teacher**, Sylvan Learning Center, 2002
Teacher for K-12 students responsible for lessons and assessment

RESEARCH EXPERIENCE

- Doctoral Research**, Princeton University, 2004-2009
Under the supervision of Professor Salvatore Torquato, I developed multi-scale mathematical models of heterogeneous tumor growth and response to treatment. My research particularly focused on using theoretical tools to explore various forms of intra-tumor and tumor-host interactions. Modeling techniques utilized included, although were not limited to, the theory of cellular automata, differential equations, numerical analysis and Monte Carlo methods.
- Graduate Student Internship**, Merck & Co., Inc, Summer 2007
Working in the Applied Computer Science and Mathematics Division at Merck, I had the opportunity to conduct mathematical biology research in an industrial setting. I developed an

algorithm to calculate circumferential wall shear stress in arterial walls using phase contrast MRI data.

Undergraduate Research, Rutgers University, 2004

I participated in a Research Experience for Undergraduates (REU) program at Rutgers University. Working under the supervision of Professor Charles Roth and Professor Stanley Dunn of the Biomedical Engineering Department, I designed a model of the molecular thermodynamics and kinetics of real-time polymerase chain reaction (rtPCR). The model was validated via experimental data and was utilized to propose a novel quantification routine for rtPCR.

Undergraduate Research, New York University, 2003-2004

I participated in a Summer Undergraduate Research Program (and continued the project after the summer ended) at the Sackler Institute of Graduate Biomedical Sciences at NYU's School of Medicine. Advised by Professor Tamar Schlick and Dr. Hin Hark Gan, I performed statistical analysis on the distribution of sequences of random nucleic acid pools using tree graph representations of secondary structure.

PUBLICATIONS

J.L. Gevertz and S. Torquato. Growing heterogeneous tumors in silico. *Submitted for publication*.

J.L. Gevertz and S. Torquato, 2009. Mean survival time of absorbing triply periodic minimal surfaces. *Physical Review E* **80**: 011102.

J.L. Gevertz, G. Gillies and S. Torquato, 2008. Simulating tumor growth in confined heterogeneous environments. *Physical Biology* **5**: 036010.

J.L. Gevertz and S. Torquato, 2008. A novel three-phase model of brain tissue microstructure. *PLoS Computational Biology* **4**(8): e1000152.

J.L. Gevertz and S. Torquato, 2006. Modeling the effects of vasculature evolution on early brain tumor growth. *Journal of Theoretical Biology* **243**(4): 517-531.

J.L. Gevertz, S. Dunn and C.M. Roth, 2005. Mathematical model of real-time PCR kinetics. *Biotechnology and Bioengineering* **92**(3): 346-355.

J. Gevertz, H.H. Gan and T. Schlick, 2005. In vitro RNA random pools are not structurally diverse: A computational analysis. *RNA* **11**(6): 853-863.

INVITED/CONTRIBUTED PRESENTATIONS

International Conference on Mathematical Biology, Vancouver Canada, July 2009

Contributed talk: Multi-scale mathematical modeling of brain tumor growth

Society for Mathematical Biology Conference, Toronto Canada, July 2008

Contributed poster: Growing heterogeneous tumors in silico

Vanderbilt Institute for Integrative Biosystems Research and Education, Nashville TN, April 2008

Invited talk: In silico oncology: environmental heterogeneity & vascular evolution

SIAM Conference on Mathematics for Industry, Philadelphia PA, October 2007

Contributed talk: Modeling the effects of vasculature evolution on early brain tumor growth

Women in Computational Sciences Conference, Princeton NJ, May 2007

Invited talk: Computational modeling of brain tumor growth and invasion

Workshop for Young Researchers in Mathematical Biology, Columbus OH, March 2007

Contributed Poster: A novel three-phase model of brain tissue microstructure

DIMACS Workshop on Computational Tumor Modeling, Piscataway NJ, August 2006

Contributed talk: Modeling the effects of vasculature evolution on early brain tumor growth

Biomedical Engineering Society Annual Fall Meeting, Philadelphia PA

Contributed poster: Mathematical model of real-time PCR kinetics (October 2004)

SELECT FELLOWSHIPS, AWARDS AND TRAINING

Project NExT (New Experiences in Teaching) Fellow: 2009-2010

McGraw Center for Teaching and Learning (of Princeton University) Graduate Fellow: 2008

NSF Graduate Research Fellow: 2005-2009

Burroughs Wellcome Fellow for Graduate Training in Biological Dynamics: 2004-2009

Rutgers Mathematics REU: Summer 2004

Graduation with Highest Honors at Rutgers University: May 2004

NYU Summer Undergraduate Research Fellow: Summer 2003

Phi Beta Kappa: 2003

Golden Key International Honors Society: 2002

National Society of Collegiate Scholars: 2001

ACADEMIC SERVICE

Reviewed manuscripts submitted to the following journals: *Journal of Theoretical Biology*, *Physical Biology*, *Physica A*, *Physiological Genomics* and *Physics in Medicine and Biology*

Served on the Program in Applied and Computational Mathematics (PACM) Graduate Student Committee at Princeton University, 2008-2009

Graduate student representative at PACM responsible for guiding first and second year graduate students through the preliminary and general examination procedures, 2007-2009

Graduate student mentor to female undergraduate and graduate mathematics students at Princeton University, 2008-2009

Supplementary advisor to an undergraduate chemical engineering researcher at Princeton University, 2008-2009

Judged a science fair for home-schooled students, 2008

Co-coordinated Princeton University's Program in Integrative Information, Computer and Application Sciences (PICASso) seminars, 2006-2007

PROFESSIONAL AFFILIATIONS

Society for Industrial and Applied Mathematics, Society of Mathematical Biology, Association for Women in Mathematics, Mathematical Association of America, Center for the Development of a Virtual Tumor