

Nessy Tania

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EDUCATION **University of Utah**

Ph.D., Mathematics (expected May 2009)

- Research Interest: Mathematical Biology
- Thesis Topic: Mathematical models of calcium regulation in cardiac cells
- Advisor: James P. Keener

M.S., Applied Mathematics, May 2005

University of California, Davis

B.S., Mathematics, June 2002

- Highest Honor with Departmental Citation

RELATED RESEARCH EXPERIENCE **IGERT Summer Project**, University of Auckland Summer 2006

- Developed a model of cross-bridges in airway smooth muscle. Performed data-fitting to experimental result on airway and arteriole smooth muscle.

Coagulation Project, University of Utah 2003-2006

- Investigated the effect of flow and platelets deposition on the blood coagulation cascade.

IGERT Lab Rotation, University of Utah Summer 2004

- Developed kinetic model for cadmium binding to HERG potassium channels. Learned to use two-microelectrodes voltage clamp.

Givens Associate, Argonne National Laboratory Summer 2003

- Studied *a-posteriori* error estimation and adaptive mesh refinement for solving elliptic partial differential equations using finite element method.

Senior Honor Thesis, UC Davis 2000-2002

- Studied the effect blood flow on the genesis of atherosclerosis computational fluid dynamics techniques.

PUBLICATIONS N. Tania and J.P. Keener. The effect of diffusion and release localization on calcium oscillation. *submitted to Math. Med. Biol.*, 2009.

I. Wang, A.Z. Politi, N. Tania, Y. Bai, M. Sanderson and J. Sneyd. A mathematical model of airway and pulmonary arteriole smooth muscle. *Biophys. J.*, 2008, 94:2053-3064.

A.L. Fogelson and N. Tania. Coagulation under flow: The influence of flow-mediated transport on the initiation and inhibition of coagulation. *Pathophysiol. Haemost. Thromb.* 2005, 34(2-3):91-108.

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TEACHING EXPERIENCE	Teaching Assistant , ACCESS Scholarship, University of Utah Assisted and provided mentoring in a summer program for incoming freshmen women studying science and mathematics.	Summer 2008
	Graduate Teaching Fellow , University of Utah Course instructor - full course responsibility <ul style="list-style-type: none">• Math 2280 - Introduction to Differential Equations• Math 2250 - Ordinary Differential Equations and Linear Algebra for Engineers• Math 1180 - Mathematics for Life Scientists Teaching assistant - led recitation sessions <ul style="list-style-type: none">• Math 2250 - Ordinary Differential Equations and Linear Algebra for Engineers	2005-2007
	Reader , UC Davis Graded homework in lower and upper division mathematics courses including numerical analysis, real analysis, combinatorics, linear algebra, and calculus.	2000-2002
	Student Assistant , Math Resource Center, Pasadena City College Tutored students in lower-division mathematics courses. Led in-class discussion sessions for College Algebra and Pre-Algebra courses.	1998-1999
AWARDS AND SCHOLARSHIP	University of Utah <ul style="list-style-type: none">• Outstanding Graduate Student Award, Department of Mathematics, 2008 Awarded yearly for excellence in teaching and progress through the graduate program.• IGERT Traineeship in Mathematical Biology, 2003-2005 UC Davis <ul style="list-style-type: none">• McNair Scholarship, 2000-2002• Undergraduate Research Traineeship in Nonlinear Dynamics in Biology, 2000-2002	
CONFERENCES AND WORKSHOPS	AWM Workshop for Women Graduate Students and Recent Ph.D.s Joint Mathematics Meetings, Washington DC <ul style="list-style-type: none">• <i>Poster</i>: The Effect of Diffusion on Calcium Oscillations	January 2009
	Workshop for Young Researchers in Math Biology Mathematical Bioscience Institute, Ohio State University <ul style="list-style-type: none">• <i>Poster</i>: Diffusion and Calcium Oscillations	September 2008
	Career Mentoring Workshop Wheaton College <ul style="list-style-type: none">• <i>Presentation</i>: Mathematical Models of Calcium Regulation inside Cardiac Cells	July 2008
	SIAM Conference on Applications of Dynamical Systems Snowbird, Utah <ul style="list-style-type: none">• <i>Poster</i>: Stochastic Calcium Release in Ventricular Cardiac Myocytes	May 2007
	2006 NSF-IGERT Project Meeting Arlington, Virginia <ul style="list-style-type: none">• <i>Poster</i>: Control of Calcium Release in Cardiac Muscle	May 2006

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CONFERENCES AND WORKSHOPS

Workshop on Applications of the Methods of Stochastic Systems and Statistical Physics in Biology

University of Notre Dame October 2005

- *Poster:* Graded calcium release in a stochastic model of cardiac muscle.

Graduate Summer School in Mathematical Biology

Institute of Advanced Study/Park City Mathematics Institute July 2005

- *Project Presentation:* Resetting Reentrant Excitation Oscillations
- Teaching assistant for a course on Fixed Points and Topological Approaches to Biological Dynamics taught by Leon Glass.

International School on Biomathematics, Bioengineering and Clinical Aspects of Blood Flow

Mathematical Science Research Institute July 2002

2001 Western Regional McNair Symposium

University of California, Berkeley October 2001

- *Presentation:* Unsteady Flow in the Rabbit Aorto-Celiac Bifurcation

SELECTED LOCAL PRESENTATIONS

Department of Mathematics, University of Utah

- Stochastic simulations of chemical reactions
Graduate Student Colloquium December 2007
- A Model of Actin-Myosin crossbridge cycling in smooth muscle
Math Biology Seminar September 2006
- Propagation of calcium waves in cardiac cells
Graduate Student Colloquium February 2006

ACADEMIC SERVICES

Department of Mathematics, University of Utah

- Graduate Student Advisory Committee (GSAC)
Retention, Promotion and Tenure Committee, 2006-2007
Graduate Colloquium Organizer, 2004-2006
- Co-organizer for the Second Annual Mathematical Biology Student Workshop with Leah Edelstein-Keshet, 2006