

School of Natural Sciences
University of California, Merced
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Education

University of California, Merced
PhD Candidate in Applied Mathematics
Started August 2007
GPA: 3.925/4.0
Advisor: Arnold D. Kim

B.S. 2007 in Applied Mathematics
California State University, Chico
Minors in Physics and Theatre
Awards: Dean's List, Graduated with Honors in General Education

Research Interests

- Light propagation in biological tissues
- Numerical analysis
- Asymptotic and perturbation analysis

Professional Experience

Graduate Research Assistant May 2011 - January 2012

Research Assistant to Arnold D. Kim

Prepared thin beam approximation for tissue halfspace using Corrected Diffusion model for publication. Submitted paper accepted by JOSAA.

Extended the thin beam approximation to a two-layer tissue model.

Started on extension of thin beam approximation for oblique incidence model.

Attended CBST retreat, and Virtual Photonics Workshop

Graduate Research Assistant August 2009 - January 2011

Research Assistant to Arnold D. Kim

Prepared for Qualifying Exam

Advanced to Candidacy

Worked on asymptotic model for a thin beam incident on two layer biological tissue with a point absorber

Attended Virtual Photonics Workshop

Attended MSRI Introductory Workshop on Inverse Problems

Graduate Research Assistant December 2008 - June 2009

Research Assistant to Arnold D. Kim

Worked on solutions to the forward problem using the Radiative Transport Equation for two-layered biological tissue

Publications

S. B. Rohde and A. D. Kim, "Modeling the diffuse reflectance due to a narrow beam incident on a turbid medium," JOSAA, (*in-press*).

Presentations

Invited Talks

1. September 30, 2011. *Modeling Light Propagation in Tissue* at California State University, Chico. A presentation of my research for the Mathematics faculty and students.
2. November 5, 2010. *Modeling Light Propagation in Tissue* at California State University, Chico. A presentation of my research for the Physics faculty and students.
3. March 31, 2010. *Foundations for using the Radiative Transport Equation to scan tissue for early-stage cancer cells* at University of California, Merced for the SAMPLe Seminar Series.
4. November 10, 2009. *Applied Mathematics Graduate Studies* at California State University, Chico. A presentation about our faculty and Applied Mathematics graduate program for the Mathematics faculty and students. I also sat on a panel with other graduate students to discuss my experience as a graduate student at UC Merced.
5. November 2005. *Dancing Mathematics* at California State University, Chico. A fun presentation about math and dance for the faculty and students interested in mathematics.

Contributed Talks

1. May 21, 2012. *Corrected Diffusion Approximation in Layered Tissues* at SIAM Imaging Science conference in Philadelphia, PA.

Academic Honors

Graduate Research Assistant

Teaching Experience

Teaching Fellow January 2012 - May 2012

Lead instructor for vector calculus course.

Prepare lectures, homework, and quizzes each week

Prepare three midterm exams and one cumulative final

Proctor exams

Manage 2 teaching assistants

Hold 2 office hours each week

Teaching Fellow January 2011 - May 2011

Teaching Assistant for vector calculus

Lead two 2-hour discussions per week

Graded homework and exams

Held 2 office hours per week

Taught one lecture

Teaching Assistant January 2010 - May 2010

Teaching Assistant for Numerical Analysis II

Lead one discussion section per week in a computer lab

Graded homework and exams

Held two office hours per week

Taught three lectures

Teaching Assistant August 2009 - December 2009

Teaching Assistant for Numerical Analysis I

Lead one discussion section per week in a computer lab

Graded homework and exams

Held two office hours per week

Teaching Assistant June 2009 - August 2009

Teaching Assistant for second semester calculus

Lead two discussion sections twice a week

Graded homework, quizzes, and exams

Held two office hours per week

Teaching Assistant January 2009 - May 2009

Teaching Assistant for Introductory Physics II for Biological Sciences

Lead one lab discussions twice a week

Graded homework, labs, quizzes, and exams

Held two office hours per week

Teaching Assistant August 2008 - December 2008

Teaching Assistant for Numerical Analysis I

Lead two discussion sections per week in a computer lab

Graded homework and final exam

Held two office hours per week

Teaching Assistant June 2008 - August 2008

Teaching Assistant for first semester calculus

Lead three discussion sections twice a week

Prepared all quizzes and worksheets

Graded homework and exams

Held two office hours per week

Teaching Assistant January 2008 - May 2008

Teaching Assistant for Vector Calculus

Lead two discussion sections per week

Graded homework, quizzes, and exams

Held two office hours per week

Teaching Assistant August 2007 - December 2007

Teaching Assistant for Differential Equations and Linear Algebra

Lead two discussion sections per week

Graded homework, quizzes, and exams

Held two office hours per week

Assistant Facilitator June 2007 - August 2007

Teaching Assistant for Physics course in B A STAR program

Set up and tested all labs

Ran labs every week

Graded assignments

Held help sessions for students

Submitted grades and comments to the program director

Grader August 2003 - May 2007

Grader for two Butte College Algebra classes

Grader August 2003 - December 2003

Grader for Patterns of Mathematical Thought course at CSU, Chico

Training

Completed one year of Teaching Assistant training coursework.

Attended workshops each year for professional development

Conferences and Workshops

SIAM Imaging Science, May 2012

Virtual Photonics Workshop, August 2011

CBST Retreat, July 2011

Virtual Photonics Workshop, September 2010

MSRI introductory workshop on inverse problems, August 2010

Women in Physics Conference, January 2007

Committees

Served as the graduate student representative on the committee to select a new dean for the School of Natural Sciences at UC Merced (2011)

Served as the undergraduate representative on the committee to select the “book in common” for the incoming freshmen at CSU, Chico. (2006)

Professional Activities and Memberships

SIAM Student Member

OSA Student Member

WiSE Member

Founding president of UCM WiSE chapter (2010)

Board member for CSUC Math Club (2005 - 2007)

Tutored privately for college and high school students (2004 - 2007)

Additional Information

Worked in Admissions office at CSU, Chico where I helped manage budgets, prepared travel paperwork for all staff, managed student payroll, assisted in processing staff payroll, and assisted the Director of Admissions in preparing projects.

Taught dance as an extracurricular activity at CSU, Chico (2003 - 2007). Have participated in dance and theatre performances since age three.