

Mark Robertson-Tessi
Program in Applied Mathematics
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Education

2005 – present

Graduate Student, **University of Arizona**, Tucson, AZ

- Enrolled in the Ph.D. program in Applied Mathematics
- Courses in Applied Mathematics, Real Analysis, Numerical Analysis, Perturbation Theory, Dynamical Systems, Laboratory, and Physiology

2002 - 2005

Undergraduate Student, **University of Arizona**, Tucson, AZ

- B.S. *Magna Cum Laude*, in Mathematics and Physics, with minor in Astronomy
- Courses in Real & Harmonic Analysis, Applied PDE's, Modern & Linear Algebra, Electromagnetism, Thermodynamics, Mechanics, Optics, Biology, Programming, Laboratory, Microscopy and Astronomy

1993 - 1997

Undergraduate Student, **Cleveland Institute of Music**, Cleveland, OH

- B.M. with Honors, in Audio Recording and Music Theory

Employment and Teaching Experience

2005 – present

Research Assistant, Applied Mathematics Program, University of Arizona, Tucson, AZ

- Research on tumor growth, with Dr. Alain Goriely (advisor), including modeling of stress and growth of ductal carcinoma in situ of the breast, and modeling of immune system interactions with tumor growth under chemotherapy.

July, 2007

Mentor, Mathematics Department, University of Arizona, Tucson, AZ

- Mentored an undergraduate research project as part of the University of Arizona Summer Modeling Program, a VIGRE initiative

2006 – 2007

Mentor, Mathematics Department, University of Arizona, Tucson, AZ

- Mentored an undergraduate research project as part of the MATH 485 class

2005 – 2006

Teaching Assistant, Mathematics Department, University of Arizona, Tucson, AZ

- Taught Math 111: Plane Trigonometry for two semesters

2005 – 2006

Research Assistant, Cell Biology Department, University of Arizona, Tucson, AZ

- Research on neuromuscular synapses, with Dr. Herman Gordon. Multi-faceted approach using computer modeling, lab work and theoretical biology to assess membrane aggregation of acetylcholine receptors.

2004 – 2006

Research Assistant, Physics Department, University of Arizona, Tucson, AZ

- Research on the quantum Talbot effect and electron interferometry from theoretical and experimental perspectives, with Dr. Alex Cronin.

2003 – 2005

Research Assistant, Steward Observatory, University of Arizona, Tucson, AZ

- Research on chemical abundances of planetary nebulae, with Dr. Donald Garnett.

2002 – 2003

Research Assistant, Planetary Sciences Department, University of Arizona, Tucson, AZ

- Research on Titan's physical aspects to create a computer model of the surface and atmosphere, with Dr. Ralph Lorenz.

2000 – 2002

Engineer and Graphic Designer, Draco Audio Recording Studio, Tucson, AZ

- Recording sessions, producing and arranging music, graphic design and editing work.

1997 – 2000

Editor and Systems Specialist, Telarc International, Cleveland, OH

- Edited and mastered music for compact disc releases; implemented and maintained recording equipment, computer systems and programs.

1997 – 2000

Faculty, Cleveland Institute of Music, Cleveland, OH

- Taught Audio Recording classes at the University Level (six semesters total)

Publications

Alain Goriely, Mark Robertson-Tessi, Michael Tabor, and Rebecca Vandiver. *Elastic Growth Models*. Accepted for publication in BIOMAT-2006 (Ed. R. Mondaini) Springer-Verlag (2007).

Mark Robertson-Tessi, Tim Savas, Robert J. Wild, and Alexander D. Cronin. *Cleaning silicon nitride gratings with liquid immersion*. *J. Vac. Sci. Tech. B*, **24**, 1409 (2006).

Mark Robertson-Tessi and Donald R. Garnett. *Recombination Line versus Forbidden Line Abundances in Planetary Nebulae*. *Astrophys. J. Supp.*, **157**, 371 (2005).

Mark Robertson-Tessi and Ralph Lorenz. Models of Titan's surface published in *Physics Today* (April 2004), *Sky and Telescope* (May 2003), *EOS* (April 8, 2003), and various internet articles.

Conference Presentations

Talk (planned): *A Mathematical Model for Tumor-Immune System Interactions Following Cytoreductive Treatment*, October 2007, University of Arizona, Mathematical Modeling and Analysis of Populations in Biological Systems Conference

Talk: *Liquid Cleaning of Silicon Nitride Gratings*, February 2005, University of Nebraska-Lincoln, Guest Seminar

Talk: *Mathematics of the Quantum Talbot Effect*, November 2004, University of Arizona, Undergraduate Mathematics Conference

Poster: *Recombination Line versus Forbidden Line Abundances in Planetary Nebulae*, June 2004, Denver, CO, American Astronomical Society Meeting

Awards

2007 – 2008

VIGRE Fellowship

2007 – 2008

BIO5 Biomathematics Scholarship

Summer 2007

VIGRE Summer Fellowship

2006 – 2007

VIGRE Fellowship

2006 – 2007

BMPI Fellowship

May 2005

Outstanding Undergraduate Achievement award in Mathematics

2004 – 2005

Weaver Award for Undergraduate Research

2004 – 2005

W. F. Lucas Scholarship

2003 – 2004

G. C. Purviance Scholarship