

## David M. Goulet, Ph.D.

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### Academic Experience

- 2005-present **University of Utah**, Salt Lake City, UT  
*Postdoctoral Fellowship* in the Mathematical Biology Research Training Group
- 2001 - 2006 **California Institute of Technology**, Pasadena, CA  
*Ph.D.* in Applied and Computational Mathematics, June 2006  
Advisors: Prof. Donald S. Cohen, Applied and Computational Mathematics  
Prof. Paul W. Sternberg, Biology
- 1999 - 2001 **Courant Institute of Mathematical Sciences**, New York University, NY  
*M.S.* in Mathematics
- 1995 - 1999 **California Institute of Technology**, Pasadena, CA  
*B.S. with honors* in Applied Mathematics

### Interests

- Mathematics Applied ordinary, partial, and functional differential equations- asymptotic methods, symmetry methods, continuum approximations, and numerical methods.
- Biology Quantitative cellular, molecular, and developmental biology- cell signaling, ligand-receptor interactions, differentiation, apoptosis, cell cycle, and morphogenesis.
- Modeling Construction, analysis, and computational simulation of mathematical models in developmental biology, physiology, behavioral biology, and diffusive transport.
- Teaching Curriculum development, incorporating computational methods into undergraduate courses, undergraduate and graduate research mentoring, mathematics enrichment programs for undergraduate and high school students.

### Honors and Awards

- 2006 W. P. Carey Prize for Outstanding Dissertation in Applied Mathematics (Caltech)
- 2005 - 2008 Research Training Group Postdoctoral Fellowship (University of Utah)
- 2003 - 2004 The Associated Students of Caltech's Excellence in Teaching Award
- 2001 - 2005 Research and teaching assistantships (Caltech)
- 1999 - 2001 Henry P. MacCracken Graduate Fellowship in Applied Mathematics (NYU)
- 1998 Caltech Academic Merit Award and Tuition Grant
- 1997 - 1999 Research and teaching assistantships (Caltech)
- 1997 Summer Undergraduate Research Fellowship (Caltech)

## Research

- David Goulet, *An asymptotic method for delay differential equations with small delay*, paper in preparation
- David Goulet, *Continuum models of chemical reaction networks*, paper in preparation
- Sandy Schaeffer and David Goulet, *Modeling stress-induced ulceration in the human digestive system*, summer research mentoring of an undergraduate student, 2006
- David Goulet, *Mathematical models of the developing C. elegans hermaphrodite gonad*, Ph.D. thesis, 2006
- David Goulet, Gheorge Craciun, Galen Cook-Wiens, Namyong Lee and Taras Odushkin, *A coupled dynamical system model of the cell cycle and apoptosis*, technical report to the Mathematical Biosciences Institute, Ohio State University, September 2004.
- Donald Cohen and David Goulet, *Existence of traveling waves of chemical penetrant in an absorbing visco-elastic polymer*, unpublished.

## Activities and Mentoring

present	Developing a project for the Undergraduate Research Opportunities Program (UROP)
present	Volunteer undergraduate tutoring at the Mathematics Students Center
present	Mentoring graduate student on stochastic systems biology project
present	Presenting to high school mathematics enrichment program, Math Circle
2007	Developed curriculum for a new course on delay differential equations
2007	Organized summer workshop on applications of delay differential equations
2006	Mentored a student in a summer Research Experience for Undergraduates (REU)
2005-2007	Lead and redeveloped the graduate mathematical biology journal club
2004	Attended the Mathematical Biosciences Institute's summer program on cell processes
2003-present	Member of the Society for Industrial and Applied Mathematics (SIAM)

## Teaching

2008	<i>Introduction to Applied Mathematics II</i> , Instructor (University of Utah)
2007	<i>Delay Differential Equations</i> , Instructor (University of Utah)
2007	<i>Linear Algebra</i> , Instructor (University of Utah)
2006	<i>Introduction to Applied Mathematics</i> , Instructor (University of Utah)
2005 - 2006	<i>Calculus II</i> , Instructor (University of Utah)
2004 - 2005	<i>Methods of Applied Mathematics</i> , Teaching Assistant (Caltech)
2003 - 2004	<i>Introductory Methods of Applied Mathematics</i> , Head TA and Guest Lecturer (Caltech)
2003	<i>Introductory Methods of Applied Mathematics</i> , Teaching Assistant (Caltech)
2002	<i>Asymptotic Methods for Heterogeneous Media</i> , Teaching Assistant (Caltech)
2001 - 2002	<i>Asymptotic and Perturbation Methods</i> , Teaching Assistant (Caltech)
1997 - 1999	<i>Introductory Methods of Applied Mathematics</i> , Teaching Assistant (Caltech)

## References

Professor Donald S. Cohen  
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Professor Paul W. Sternberg  
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