

## Christine Lind Cole

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CONTACT INFORMATION	University of Washington Department of Applied Mathematics Box 352420 Seattle, WA 98195-2420 USA	<i>Voice:</i> (206) 543-0319 <i>Fax:</i> (206) 685-1440 <i>E-mail:</i> clind@amath.washington.edu <i>Web:</i> www.amath.washington.edu/~clind
EDUCATION	<b>University of Washington</b> , Seattle, Washington USA Ph.D. Candidate, Applied Mathematics (Ph.D. Expected 2011) Advisor: Hong Qian M.Sc., Applied Mathematics, December 2004.  <b>Macalester College</b> , Saint Paul, Minnesota USA B.A., Mathematics and Physics, May, 2002.	
RESEARCH INTERESTS	Stochastic Processes, Partial Differential Equations, Mathematical Biology, Molecular Motors, Mathematical Modeling	
SKILLS	Mathematica, Matlab, $\text{\LaTeX}$ , gnuplot, Unix/Linux, Macintosh Experience implementing Monte Carlo simulations using the Gillespie algorithm in C Excellent written and oral communication skills	
HONORS AND AWARDS	University of Washington: Boeing Teaching/Service Award 2009 VIGRE fellowship 2005, 2006, and 2009 Graduate School Top Scholar 2003  Macalester College: graduated <i>Cum Laude</i> , recipient Russell B. Hastings Book Award for achievement in physics and service to the department, Elected to Pi Mu Epsilon sophomore year.	
EXPERIENCE	<i>Seminar Committee Member</i> University of Washington <b>September 2009 - June 2010</b> Member of the VIGRE Undergraduate Mathematical Sciences Seminar organizing committee. In charge of advertising the seminar to undergraduates.  <i>Instructor</i> University of Washington <b>June - August 2008, March - June 2009</b> Taught AMATH 383: Introduction to Continuous Mathematical Modeling. Complete responsibility for lectures, exams, homework assignments, and grades.  <i>Teaching Assistant</i> University of Washington <b>September 2008 - March 2009</b> Taught quiz sections for MATH 111: Algebra with Applications (Business Algebra) Autumn 2008 and Winter 2008. Teaching responsibilities included office hours and review sessions as well as participation in grading sessions of midterms and finals. Received excellent evaluations both from students and supervising professors Alexandra Nichifor and Andrew Loveless.  <i>GK-12 Fellow</i> University of Washington <b>September 2006 - June 2008</b> Worked with 3rd and 4th grade students and teachers at Emerson Elementary School in Seattle Washington. Fellows supported teachers as they learn to teach inquiry-based mathematics. Duties include teaching lessons, planning lessons with teachers, and working with students in small groups or one-on-one.  <i>Instructor</i> University of Washington <b>March - June 2006</b> Taught AMATH 351: Introduction to Differential Equations and Applications. Complete responsibility for lectures, exams, homework assignments, and grades.	

*Seminar Committee Chair*                      University of Washington                      **September 2005 - June 2006**  
 Chair of the VIGRE Undergraduate Mathematical Sciences Seminar organizing committee. Duties include advertising, seminar announcements, recruiting speakers, CR/NC grade assignment, and delegating responsibilities to seven other committee members.

*Seminar Committee Member*                      University of Washington                      **September 2004 - June 2005**  
 Member of the VIGRE Undergraduate Mathematical Sciences Seminar organizing committee.

*Seminar Coordinator*                      University of Washington                      **March - June 2004**  
 Co-coordinated new seminar AMATH 490 Spring quarter with another graduate student. The seminar was offered to interest undergraduates in mathematical research areas at an early stage in their careers, and also absorbed the ACMS Seminar for the quarter.

*Teaching Assistant*                      University of Washington                      **September 2003 - December 2004**  
 Taught quiz sections for MATH 125: Calculus with Analytic Geometry II Autumn 2003 and Winter 2004, and MATH 120: Precalculus Autumn 2004. Teaching responsibilities included office hours and review sessions as well as participation in grading sessions of midterms and finals. Received excellent evaluations both from students and supervising professors Patrick Perkins, Tatiana Toro, and David Schneider.

*Research Assistant*                      Macalester College                      **June - August 2001**  
 Designed and implemented experimental set-ups for studying resonance phenomena in quantum wells, including experience in machining aluminum, glass, and plastic using mill, lathe, band saw, glass saw, and drill press, as well as computer interfacing with experimental equipment using Lab View software.

*Instructor*                      Charles Wright Academy                      **June - August 2000**  
 Taught and created lesson plans and homework assignments for classes of up to 12 middle school and high school students covering Mathematics and SAT preparation, and instructed elementary school students in basic baseball skills, all in a summer school setting.

PUBLICATIONS                      Cole, C. L., Qian H. Simple Chemical Model for Facilitated Transport with an Application to Wyman-Murray Facilitated Diffusion, *Acta Phys. -Chim. Sin.*, 2010, 26(11): 2857-2864.

PAPERS IN PREPARATION                      *The Brownian Ratchet Revisted: Diffusion Formalism, Attraction, and Multiple Filamentous Bundle Growth* (In final stages of preparation for submission)

CONFERENCE PRESENTATIONS                      **Joint Mathematics Meetings 2008**  
*AMS Special Session on Learning and Math Graduate Students in K-12 Classroom*: Panel 7: Effects of the University of Washington's GK-12 project on fellows' teaching pedagogy and on elementary school teachers' and students' content knowledge. (Panelist).

**International Conference on Mathematical Biology and Annual Meeting of the Society for Mathematical Biology 2009**

*A Simple Chemical Kinetic Model for Facilitated Diffusion*

*Abstract*: We present a simple chemical kinetic model for facilitated diffusion of oxygen by a carrier molecule such as hemoglobin or myoglobin. This simple model mathematically illuminates the cause of the enhancement of the transport by the carrier molecules. Results from the simple model are compared to previous experimental and mathematical results. (Poster Presentation)

*Authors*: Christine Lind & Hong Qian