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EDUCATION

Cornell University, Ithaca, NY

2007 Currently in Ph.D. Program in Applied Mathematics
Research Interest: *Theoretical Population Genetics, Statistical Genetics, Computational Biology*
Thesis topics: **(1)** Analysis of the evolution of robustness in genetic networks. **(2)** Modeling fluctuating selection with forward simulations and the diffusion approximation. Inference of model parameters from the site frequency spectrum of nucleotide polymorphism data.
(3) Extension of coalescent models to a multiple merger framework. Monte Carlo simulation for estimation of family sizes.

Advisors Rick Durrett and Carlos Bustamante
Expected degree date: May 2008

2006 M.S. Applied Mathematics

Mills College, Oakland, CA

2002 B.A. Mathematics

2002 B.A. French

PUBLICATIONS/PRESENTATIONS

Publications

Estimating the distribution of family sizes in the λ coalescent (*in preparation* with Rick Durrett and Carlos Bustamante)

Huerta-Sanchez, E., R. Durrett, and C. D. Bustamante. Population genetics of polymorphism and divergence under fluctuating selection. *Genetics* (to appear).

Emilia Huerta-Sanchez and Rick Durrett (2007). Wagner's canalization model. *Theoretical Population Biology* 71(2):121-130.

B. Gonzales, E. Huerta-Sanchez, C. Kribs, A. Ortiz-Nieves and T. Vazquez-Alvarez. Am I Too Fat? Bulimia as an Epidemic. *Journal of Mathematical Psychology* 47(5-6): 515-526, 2003.

E. Huerta-Sanchez, K. Rios-Soto, G. Jordan-Salivia. *The Effects of Mass Transportation During a Deliberate Release of Smallpox*. Technical report for the Mathematical and Theoretical Biology Institute(MTBI). Cornell University, Ithaca, NY Summer 2002.

E. Huerta-Sanchez, A. Lopez, D. Uminsky. Iterations of Even-Odd Splitting Map Can Make Integration Easier *The Pi Mu Epsilon Journal*. Vol. 11, No. 5, Fall 2001, 241-250.

Presentations

Wagner's Canalization Model. 2006 Cornell Probability Summer School, Ithaca, NY.

WORK EXPERIENCE/OTHER**Course Instructor**

Fall 2006 Math 111 (Calculus I)

Responsibilities: Lectured 4 days per week, created weekly quizzes for students, contributed to creation of course exams, held weekly office hours and managed the course grader and assigned grades to students.

Recitation instructor

Fall 2005 Multivariate Calculus

Responsibilities: Led bi-weekly recitations, graded weekly HW and half of exams, wrote HW solutions and helped write exam solutions. Assisted in assigning grades, held office hours and helped with general organization of course.

Computer Skills

Programming Languages: C/C++, Matlab, R, Mathematica
Operating Systems: Unix/Linux, Windows and Macintosh.

Language Skills

Fluent in Spanish and proficient in French

OTHER ACTIVITIES/OUTREACH**SMI - summer mathematical institute for undergraduates (REU)**

summer 2006 Worked for SMI and was part of the group of graduate students in applied mathematics that conceived the the idea of SMI. This summer program was created to encourage women and underrepresented students explore the mathematical sciences.

EYH - expanding your horizons

2004-2006 Committe Chair

Part of the organizing team of EYH which is a one day conference for middle school girls. The purpose is to stimulate their interest in math and science. I also helped teach different workshops such as *Math: It's Contagious* on infectious diseases and cryptology.

Mathematical Sciences and Bill Sears

2003-2006 Organized weekly seminars for graduate students in Applied Mathematics.

AWARDS

2006 Nominated for a Department of Mathematics Teaching Award

2002-2005 Sloan Fellowship

2003 Best poster award AMS conference in Baltimore, MD

2002 NSF Honorable Mention

2002 Best poster award AMS conference in San Diego, CA