

Shawn Drenning

Curriculum Vitae

Department of Mathematics
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Education

- 2005–2011 **University of Chicago**, Chicago, IL
Ph.D. in Mathematics, December 2011
M.S. in Mathematics, August 2007
- 2001–2005 **Cornell University**, Ithaca, NY
B.A. in Mathematics, summa cum laude, May 2005

Employment

- Spring 2012 **Mathematical Sciences Research Institute**, Berkeley, CA
Viterbi Endowed Postdoctoral Scholar
- 2007–2011 **University of Chicago**, Chicago, IL
Lecturer in the College

Research Interests

My research interests are in probability theory and, more specifically, conformally invariant processes in the plane. I am particularly interested in Schramm-Loewner evolution in finitely connected domains and related topics. As a graduate student, my research has focused on understanding a strong Markov process, excursion reflected Brownian motion, and its applications to Loewner equations in finitely connected domains.

Publications and Preprints

- *Excursion reflected Brownian motion and Loewner equations in multiply connected domains*, arXiv preprint, arXiv:1112.4123v1 (2011)
- *Spectral decimation on Hambly's homogeneous hierarchical gaskets*, Illinois Journal of Mathematics. 53 (2009), no. 3, 915–937 (with R. Strichartz)

- *Outer boundaries of self-similar tiles*, Experimental Mathematics. 14 (2005), no. 2, 199-209 (with J. Palagallo, T. Price, and R. Strichartz)

Awards and Fellowships

- Viterbi Endowed Postdoctoral Scholar (MSRI), 2012
- National Science Foundation Graduate Research Fellowship, Honorable Mention, 2005
- Kieval Prize in Mathematics (Cornell University), 2005
- Cornell Presidential Research Scholar (Cornell University), 2001-2005

Selected Talks

- 7th Cornell Probability Summer School, *Excursion reflected Brownian motion and a Loewner equation*, July 2011
- University of Chicago Probability Seminar, *Excursion reflected Brownian motion*, November 2010
- 2010 Workshop on Teaching in the College, University of Chicago, *Mid-course adjustments-planning for flexibility and responsiveness*, September 2010
- Graduate Student Conference in Probability, Duke University, *Excursion reflected Brownian motion*, May 2010
- Graduate Student Conference in Probability, University of Wisconsin-Madison, *The Loewner differential equation*, May 2008
- University of Chicago Junior Probability Seminar, series of lectures on topics including Brownian motion, Markov chains, stochastic calculus, and random matrices, 2008-2011
- Conference on Analysis and Probability on Fractals, Cornell University *Spectral decimation on Hambly's homogeneous hierarchical gaskets*, June 2005

Conferences

Attended

- 7th Cornell Probability Summer School (Cornell University), July 2011
- PIMS Summer School in Probability (University of Washington), July 2010
- Graduate Student Conference in Probability (Duke University), May 2010
- 5th Cornell Probability Summer School (Cornell University), July 2009

- Laplacian Growth and Related Topics (University of Montreal), August 2008
- Stochastic Loewner Evolution and Scaling Limits (University of Montreal), August 2008
- Graduate Student Conference in Probability (University of Wisconsin-Madison), May 2008
- Stochastic Processes and their Applications (University of Illinois Urbana-Champaign), August 2007
- Conference on Analysis and Probability on Fractals (Cornell University), June 2005

Teaching

- 2007–2011 **Lecturer in the College**, University of Chicago
 Taught courses from four different math sequences for first and second year undergraduates without direct supervision. Managed undergraduate course assistants and graders.
- 2006-2011 **Mentor**, University of Chicago
 Mentored in the Directed Reading Program during nine academic quarters and in the summer REU program six summers. Guided undergraduate math majors in the study of mathematical topics not typically encountered in course work. Assisted students in the preparation of short presentations and expository papers on their work.
- 2011 **Grader**, University of Chicago
 Graded homework for two first year graduate courses in mathematics.
- 2008–2009 **Financial Math Grader**, University of Chicago
 Graded homework and exams for two Master's level financial math courses.
- 2006–2007 **College Fellow**, University of Chicago
 Course assistant for an inquiry based learning honors calculus course. Graded homework and assisted in all other aspects of course management.

Service

- Helped design and implement an online version of the University of Chicago mathematics placement exam taken by incoming freshman
- Organizer, University of Chicago Junior Probability Seminar, 2008-2010
- Committee Member, Directed Reading Program, University of Chicago, March 2008-2011

- Coordinator, University of Chicago REU Apprentice Program, Summer 2008
- Organizer, Mathematics Department Graduate Warm-Up Program, University of Chicago, 2007
- Organizer, University of Chicago Graduate Student Seminar, Autumn 2006