

Brian P. Katz

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INTERESTS Algebraic Geometry, Mathematics Education

EDUCATION **The University of Texas at Austin**, Austin, Texas USA

Ph.D., Mathematics, May 2009 (Expected)

- Thesis Topic: Tropical Hurwitz Spaces from TQFTs
- Advisor: Eric Katz

Williams College, Williamstown, Massachusetts USA

B.A., Honors Mathematics, Chemistry, and Music cum laude, June 2003

- Thesis Topic: On Completion and Tight Closure
- Advisor: Susan Loepf

TEACHING EXPERIENCE **The University of Texas at Austin**

Assistant Instructor

- How Do You Know?: Evidence Models, and Proof Fall 2008
Co-designed this new interdisciplinary course; led six hours of discussion each week; and designed and graded tests and papers.
- Supervised Teaching in Mathematics Fall 2007
Re-designed this graduate course to train and mentor new mathematics TAs; led three hours of lecture each week; and observed and gave feedback on teaching.
- Honors Discrete Mathematics Spring 2009/08/07
Co-authored the textbook; co-led three hours of lecture each week using an Inquiry-Based Learning method; observed practice presentations; and designed and graded tests.
- Precalculus: Instructor of Record Fall 2006
Led three hours of lecture and two hours of discussion each week; held office hours; and designed and graded tests and quizzes.

Teaching Assistant

- Teaching and Learning (University-wide course for new graduate TAs) Fall 2005
Graded and responded to weekly essays; observed, critiqued, and led discussion about student teaching videos.
- Calculus and Linear Algebra Fall 2004 - Summer 2005
Led discussion (Inquiry-Based and non-Inquiry-Based); held office hours and review sessions; and graded tests.

AWARDS AND FELLOWSHIPS Certificate in Interdisciplinary First-Year Teaching Fall 2008
Educational Advancement Foundation support grant Summer 2007 and 2008
Frank Gerth III Teaching Excellence Award Fall 2006
Frank Gerth III Graduate Excellence Award Fall 2005
VIGRE Graduate Fellowship Fall 2005 - Summer 2006
Fall 2003 - Summer 2004

PUBLICATIONS *Introduction to Abstract Mathematics through Inquiry* (with M. Starbird), a textbook for an introduction-to-proof course through inquiry in Graph Theory, Group Theory, Real Analysis, and General Topology, (120 pages) in progress.

Predicting the Test: Language and Study Skills (with B. Rand), an investigation into the relationship between the language that precalculus students use to discuss tests and their study skills, in progress.

Weakly Mixing and Doubly Ergodic Infinite Measure-Preserving \mathbb{R}^d actions (with C. Silva, S. Iams, B. Street, and K. Wickelgren), *Colloq. Math.* 103 (2005), 247-264.

Abstract Algebra: Groups, Rings, and Fields (Author: Andrew Perry; Editor and Solutions Manual Author: B. Katz), Kendall/Hunt Publishing Co. (2004).

SELECTED TALKS	UT Jr. Geometry and Jr. Algebraic Geometry	
	• <i>Monoidal Transformations</i>	February 2008
	• <i>Tropical Algebraic Geometry</i>	December 2007
	• <i>Stable Maps and Enumerative Geometry (I and II)</i>	March 2007
	• <i>Moduli Spaces and Kontsevich's Formula for Rational Plane Curves</i>	November 2005
	UT Jr. Algebra and Jr. Number Theory	
	• <i>Moduli of Curves, Tautological Classes, and Hurwitz Numbers</i>	April 2006
	• <i>Generalizing the Riemann Zeta Function</i>	November 2004
	• <i>Completion and Tight Closure</i>	January 2004
	General Audience	
• <i>Graphs and Circuits</i> Austin Math Circle	March 2008	
• <i>Group Action for Science Nerds: Groups in Chemistry</i> UT Undergraduate Math Club	November 2007	
CONFERENCES AND WORKSHOPS	AMS-MAA Joint Meetings Washington DC and San Antonio, Texas	January 2009/2007
	UT College of Natural Sciences Workshop for Teaching Strategies Austin, TX	October 2008/2007
	Texas Algebraic Geometry Seminar Rice, Texas and Austin, Texas	April 2008/2007
	Cologne Summer School on Moduli of Curves and Arcs Cologne, Germany	August 2006
SERVICE AND OUTREACH	Austin Math Circle Helper	February 2008 - Present
	Intellectual-Entrepreneurship Mentor Directed a reading course for a student from an underrepresented minority interested in mathematics graduate school.	August 2007 - December 2007
	Co-organizer of the Graduate Mentoring Program Organized mentor-mentee pairs, ran a panel about surviving graduate school, and coordinated monthly lunch meetings of students and faculty.	August 2004 - July 2005
	Seminar Organizer	January 2004 - Present
	• Jr. Algebraic Geometry Seminar and Jr. Algebra Seminar: Found speakers and led graduate level research seminars. (6 semesters)	
	• Sophomore Exploratory Seminar (Sophex): Found speakers, helped them pick topics, and coached them on giving their first talks. (2 semesters)	
	Saturday Morning Math Group Helper	August 2003 - Present