

Jason Callahan

Mailing Address

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Citizenship: USA

Education

- Ph.D. in Mathematics, The University of Texas at Austin. Advisor: Alan Reid. Thesis: *The Arithmetic and Geometry of Two-Generator Kleinian Groups*. May 2009. GPA: 4.0.
- B.S. in Mathematics, The University of Texas at Austin. Dean's Honored Graduate with Highest Honors and Special Honors in Mathematics. May 2002. GPA: 4.0.

Research Interests

The geometry and topology of 3-manifolds; more specifically, the structure and properties of hyperbolic 3-manifold groups (particularly knot and link groups) and arithmetic Kleinian groups.

Mathematical Writing

- Jørgensen Number and Arithmeticity. *Conformal Geometry and Dynamics*, 13 (2009), 160-186.
- Conjugate Generators of Knot and Link Groups. Accepted for publication in *Journal of Knot Theory and Its Ramifications*, April 2009. Available at <http://arxiv.org/abs/0806.3452v2>
- *The Arithmetic and Geometry of Two-Generator Kleinian Groups*. PhD Thesis, May 2009.
- Denominators of Boundary Slopes for (1,1)-Knots. Unpublished note.
- Permutation Lattices of Finite Groups. Senior Honors Thesis, UT-Austin, May 2002.
- Integrodifferential Equations (modeling research in the Pritchard Fluid Mechanics Laboratory). Research Experiences for Undergraduates Report, Penn State University, July 2000.

Teaching Experience

- Assistant Professor, St. Edward's University, Fall 2009 to Spring 2010.
 - Applied Statistics (Math 3320), Fall 2009 and Spring 2010.
 - Linear Algebra (Math 3305), Spring 2010.
 - Calculus I (Math 2313), Fall 2009.
 - Mathematics for Liberal Arts (Math 1312), Fall 2009 and Spring 2010 (two sections each semester). Taught a coordinated syllabus uniform across all sections.
- Lecturer, UT-Austin, Summer 2009.
 - Introduction to Real Analysis (M 361K).
 - Differential and Integral Calculus (M 408C).
- Assistant Instructor (Instructor of Record), UT-Austin, Fall 2005 to Fall 2008.
 - Supervised Teaching in Mathematics (M 398T, a graduate teaching course for first-time mathematics TAs), Fall 2008. Developed a new curriculum for the course.
 - Differential Calculus (M 408K), Spring 2007, Fall 2007, and Spring 2008. Taught a coordinated syllabus uniform across all sections of the course.
 - Elementary Functions and Coordinate Geometry (precalculus, M 305G), Fall 2005 (two sections), Spring 2006, Fall 2006, and Summer 2007.
- Teaching Assistant, UT-Austin, Fall 2003 to Spring 2004. Led three discussion sections of Differential and Integral Calculus (M 408C) as a Supplemental Instruction Leader (Fall 2003) and one of Advanced Calculus for Applications I (differential equations, M 427K, Spring 2004).

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Awards, Grants, Honors, and Fellowships

- Only mathematics graduate student ever to win two teaching awards at UT-Austin: Department of Mathematics Outstanding Teaching Award (2007) and Frank Gerth III Teaching Excellence Award (2004).
- Graduate Research Assistantship, UT-Austin, Spring 2009 and Summers 2004, 2006, and 2008.
- American Mathematical Society Graduate Student Travel Grant to the Joint Mathematics Meetings in Washington, DC, Jan. 2009, with matching funds from the Research Training Group, Department of Mathematics, UT-Austin.
- VIGRE (Vertical InteGration of Research and Education) Graduate Traineeship, UT-Austin, Fall 2002 to Spring 2006.
- International Centre for Mathematical Sciences Travel Support for Workshop on 3-Manifolds after Perelman, Heriot-Watt University, Edinburgh, March 2006.
- National Science Foundation Graduate Research Fellowship, Honorable Mention, 2002.
- Undergraduate VIGRE Grant (funded senior honors thesis research), UT-Austin, Fall 2001.
- Research Experiences for Undergraduates (VIGRE grant funded stipend, living and travel expenses), Penn State University, Summer 2000.

Conferences and Seminars

- Three talks in Topology Seminar, UT-Austin: The Arithmetic and Geometry of Two-Generator Kleinian Groups (PhD defense, April 2009), Conjugate Generators of Knot and Link Groups (April 2008), and The Finite Filling Conjecture (PhD qualifying exam, April 2005).
- Seven talks in Junior Topology Seminar, UT-Austin: Jørgensen Groups (April 2008 and 2009), Thurston's Hyperbolic Dehn Surgery Theorem (Sept. 2007), Representations of Two-Bridge Knot and Link Groups (Feb. 2007), Boundary Slopes for 2-Bridge Links (Nov. 2005), A Proof of the Finite Filling Conjecture (April 2005), and Introducing Khovanov Homology (Nov. 2004).
- Three other talks at UT-Austin: Dirichlet's Unit Theorem (Junior Number Theory Seminar, Oct. 2007), Introduction to and Computation of Witt Rings (Junior Algebra Seminar, Feb. 2004), and Bilinear Forms (Sophex Seminar, Nov. 2003).
- Joint Mathematics Meetings, Washington, DC, Jan. 2009.
- 40th Texas Geometry and Topology Conference, UT-Austin, Oct. 2008.
- Organizer of Junior Topology Seminar, UT-Austin, 2006-07.
- Workshop on 3-Manifolds after Perelman, Heriot-Watt University, Edinburgh, March 2006.
- 34th Texas Geometry and Topology Conference, UT-Austin, Oct. 2005.
- 3-Manifolds and Knot Theory Conference (In Honor of Cameron Gordon's 60th Birthday), UT-Austin, May 2005.
- 32nd Texas Geometry and Topology Conference, Texas A&M University, Oct. 2004.
- Topology of Manifolds of Dimension 3 and 4 (In Honor of Andrew Casson's 60th Birthday), UT-Austin, May 2003.
- The Millennium Lectures, UT-Austin, Spring 2001.
- Presented research from the Pritchard Fluid Mechanics Laboratory at Mathematics Advanced Study Semester Fest Conference, Penn State University, July 2000.

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Service, Training, and Affiliations

- Member, American Mathematical Society, Fall 2002 to present.
- Faculty co-advisor, Math Club (for undergraduates), St. Edward's Univ., Fall 2009.
- Hilltop Mentor for two freshmen, St. Edward's Univ., Fall 2009.
- Peer-to-Peer Teaching Program, St. Edward's Univ., Fall 2009.
- Interviewed by two freshmen for Visit-a-Professor Project, St. Edward's Univ., Fall 2009.
- Hosted prospective students in class for Senior Snapshot, St. Edward's Univ., Fall 2009.
- Recruited speakers for Natural Sciences Career Symposium, St. Edward's Univ., Fall 2009.
- Carried School of Natural Sciences flag, Medallion Ceremony, St. Edward's Univ., Fall 2009.
- New Faculty Seminar, Conversations on Teaching Seminar, and Scholarship of Teaching and Learning Seminar, all via the Center for Teaching Excellence, St. Edward's Univ., Fall 2009.
- CityWorks Academy, City of Austin, Fall 2009.
- Assisted Ombudsman, Department of Mathematics, UT-Austin, checking students' prerequisites and advising them during course registration add/drop period, Spring 2009.
- Final Exam Review Instructor, UT Learning Center, Fall 2006 to Fall 2007 and Spring 2009.
- College of Natural Sciences Teaching Strategies Workshop, UT-Austin, Oct. 2008.
- Teaching Assistant, Residential Halls Study Groups, College of Natural Sciences Academic Community Program, UT-Austin, Spring 2007 to Spring 2008.
- Emerging Scholars Program, Workshop and Training, UT-Austin, Aug. 2005.
- Supplemental Instruction Program, Workshop and Training, UT-Austin, Fall 2003.
- Graduate Student Assistant, Saturday Morning Math Group, UT-Austin, Fall 2002.
- UTeach Program. Taught Mathematics at Blanton Elementary School. Took "Knowing and Learning in Mathematics and Science" (EDC 371), UT-Austin, Fall 1999.
- Passed Society of Actuaries (SOA) Exams 100, 110, and 140 in 1998-99.

Other Work and Volunteer Experience

- Tutor/Mentor: Webb Middle School (Spring 2006), UT-Austin Athletics Department (Spring 2002), Austin Community College Cypress Creek and Pinnacle Learning Labs (Spring 2002), Lincoln Action Program for "at-risk" middle school students (Spring 1999), and University of Nebraska-Lincoln Office of Multi-Cultural Affairs (Spring 1999).
- Managed nine national tours for four artists: Okkervil River (Spring and Summer 2005), Bill Callahan (Spring 2007), Shearwater (Summers 2007 and 2008), and Peel (Summer 2007).
- Co-founded an independent record label, I Eat Records, 2005. Released and promoted seven albums for six artists. Booked and promoted national tours for five artists, including several local benefit shows for SafePlace and Capital Area Food Bank of Texas.
- Associate Editor, Publishers Resource Group, Austin, TX, March to August 2002. Edited and authored content for Prentice Hall middle and high school mathematics textbooks to match education standards specific to each state.
- Resident Assistant, Division of Housing and Food Service, UT-Austin, 2000-01.
- Actuarial Intern, USAA, San Antonio, TX, Summer 1999. Received a Way2Go Award for improving competitive position analysis of automobile insurance policies.
- Actuarial Intern, Ameritas Life Insurance Corporation, Lincoln, NE, March to October 1998. Received Silver Bison Award for automating performance reports of life insurance products.
- Student Intern, Resource Planning Department, CPS, San Antonio, TX, Summers 1996 and 1997. Received Student Assistance for Education Scholarship for developing mathematical models to forecast future energy consumption and production.

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Research References

- Alan Reid (advisor), Professor, Department of Mathematics, UT-Austin.
 - areid@math.utexas.edu, 512-471-3153.
- Gaven Martin, Distinguished Professor, Institute of Information and Mathematical Sciences, Massey University (New Zealand).
 - g.j.martin@massey.ac.nz, +64 9 414-0800 ext. 41124.
- Ian Agol, Associate Professor, Department of Mathematics, University of California, Berkeley.
 - ianagol@math.berkeley.edu, 510-642-4377.
- Cameron Gordon, Professor, Department of Mathematics, UT-Austin.
 - gordon@math.utexas.edu, 512-471-1173.
- John Luecke, Professor, Department of Mathematics, UT-Austin.
 - luecke@math.utexas.edu, 512-471-4176.

Teaching and Service References

- Dan Knopf, Associate Professor and Graduate Advisor, Department of Mathematics, UT-Austin.
 - gradadv@math.utexas.edu, 512-475-8141.
- Michael Saclolo, Associate Professor and Chair, Department of Mathematics, St. Edward's University.
 - mikeps@stedwards.edu, 512-233-1672.
- Cynthia Naples, Professor and Interim Dean, School of Natural Sciences, St. Edward's University.
 - cynthian@stedwards.edu, 512-448-8676.
- Sister Donna Jurick, Executive Vice President and Provost, St. Edward's University.
 - donnaj@stedwards.edu, 512-448-8412.
- James McGuffee, Associate Professor, Department of Computer Science, St. Edward's University.
 - jameswm@stedwards.edu, 512-448-8465.