



Joel Louwsma

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Education

- Ph.D., Mathematics, California Institute of Technology, June 2010 (expected)
Thesis: *Extremal Quasimorphisms on Braid Groups*
Advisor: Danny Calegari
- B.S. with Highest Honors in Mathematics, University of Michigan, April 2005
Fall 2004 and Spring 2005 spent at the Math in Moscow program.
Spring 2003 spent at the Budapest Semesters in Mathematics program.

Research Interests

Geometric group theory, low-dimensional topology

Papers

- *Extremal Quasimorphisms on Braid Groups*, in preparation.
- (with A. Presoto and A. Tarr) *A New Computation of the Codimension Sequence of the Grassmann Algebra*, Rose–Hulman Undergraduate Mathematics Journal, Vol. 6 (2005)
- *Homeomorphism Groups of the Sierpinski Carpet and Sierpinski Gasket*, part of REU project, Summer 2004.

Talks

- *Stable Commutator Length in Braid Groups*, Joint Mathematics Meetings, January 2010
- *Mapping Class Groups*, Caltech Graduate Student Summer Seminar, August 2009
- *Homological Representations of Braid Groups*, Caltech Informal Geometry/Topology Seminar, December 2008
- *Asymptotic Cones*, Caltech Geometric Group Theory Reading Course, May 2008
- *Mapping Class Groups*, Caltech Informal Geometry/Topology Seminar, November 2007
- *A New Computation of the Codimension Sequence of the Grassmann Algebra*, Universidade de Campinas REU Symposium, August 2004
- *Homeomorphism Groups of the Sierpinski Carpet and Sierpinski Gasket*, University of Michigan REU Colloquium, June 2004

Conferences Attended

- Oberwolfach Seminar on Bounded Cohomology, Oberwolfach, Germany, May–June 2009
- More Examples of Groups, Ohio State University, May 2009
- Southern California Topology Conference, California Institute of Technology, January 2009
- Examples of Groups, Ohio State University, May–June 2008
- Georgia Topology Conference, University of Georgia, May 2008
- Ahlfors–Bers Colloquium, Rutgers University–Newark, May 2008
- Geometric Groups on the Gulf Coast, Pensacola, Florida, March 2008
- Joint Mathematics Meetings, San Diego, California, January 2008
- Topics in Teichmüller Theory and Kleinian Groups, MSRI, November 2007
- Introduction to Geometric Group Theory, MSRI, August 2007
- Introduction to Teichmüller Theory and Kleinian Groups, MSRI, August 2007
- Workshop in Geometric Topology, Calvin College, June 2007
- Geometry and the Imagination, Princeton University, June 2007
- Southern California Topology Conference, California Institute of Technology, January 2007
- IAS/Park City Mathematics Institute, Park City, Utah, June–July 2006
- Joint Mathematics Meetings, Atlanta, Georgia, January 2005

Teaching Experience

- Teaching Assistant, California Institute of Technology, 2005–present

I prepared and taught recitations, held office hours, and graded homework and exams. I did this for the following courses:

Calculus, Fall 2005

Linear Algebra, Winter 2006, Winter 2007

Multivariable Calculus, Spring 2006, Spring 2007, Spring 2009

Differential Equations, Fall 2006, Fall 2007, Fall 2008, Fall 2009

Probability and Statistics, Winter 2008, Winter 2009

- Head Teaching Assistant, California Institute of Technology, Fall 2007, Spring 2009

In addition to the above responsibilities of a teaching assistant, I supervised the other teaching assistants, coordinated grading of homework and exams, and handled various other administrative matters.

- Teaching Assistant, Center for Talented Youth Summer Programs, Summer 2005

I taught some classes, led problem sessions, and gave students feedback about their work. I did this for the following courses:

Cryptography, Session 1

Game Theory, Session 2

Honors and Awards

- Caltech Project for Effective Teaching Certificate, 2009
This certificate was awarded in recognition of successful completion of the Pedagogy Workshop Series.
- Graduate Research Assistantship, California Institute of Technology, Summer 2006, Summer 2007, Summer 2008, Spring 2009, Summer 2009, Fall 2009
- AMS Math in Moscow Scholarship, Fall 2004, Spring 2005
- Outstanding Achievement Award, Department of Mathematics, University of Michigan, April 2004

Service

- Committee to determine mathematics placement of incoming undergraduates, Caltech, 2009
- Coordinated TA training for math graduate students in conjunction with Caltech Project for Effective Teaching, Fall 2008
- Coordinated orientation activities for new math graduate students, 2006–2008
- Volunteer assistant for International Student Orientation, 2006–2009
- Host for many prospective graduate students, 2006–2008

Citizenship

USA

References

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