

TRENTON F. SCHIRMER

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EDUCATION

- Ph.D in Mathematics, University of Iowa, Iowa City, Iowa USA, July 2012.
 - Dissertation: *Two varieties of tunnel number subadditivity*
 - Advisor: Dr. Maggy Tomova
- B.A., Philosophy, Carroll College, Helena, Montana USA, May 2005.

ACADEMIC APPOINTMENTS AND TEACHING EXPERIENCE

- Fall 2012–Spring 2015, *Visiting Assistant Professor, Oklahoma State University*
 - Intro to Applied Topology (Spring 2014)
 - Calculus III (Spring 2014)
 - Vector Calculus (Fall 2013)
 - Intro to Differential Equations (Fall 2013)
 - Calculus I (Fall 2012, Spring 2013, Fall 2014, Spring 2015)
- Fall 2008–Spring 2012, *Teaching Assistant, University of Iowa Department of Mathematics*

Led twice-weekly discussion sections (once-weekly in the case of General Topology), wrote and graded quizzes and homework, and helped assign final grades. I was the instructor for College Algebra in Fall 2009, and Pre-Calculus in Spring 2010, so I had sole responsibility for all aspects of the course.

 - Intro to Smooth Manifolds (graduate level) (Spring 2012)
 - General Topology (graduate level) (Fall 2011)
 - Calculus for Engineers I (Fall 2010)
 - Pre-Calculus (Spring 2010)
 - College Algebra (Fall 2009)
 - Calculus for Business (Fall 2008, Spring 2009)

SERVICE

- *Speaker, Stillwater High School Math Seminar.* The Stillwater High School Math Seminar is exactly what it sounds like—a seminar for high school students. I have given two talks there which were aimed to be interesting to high school students, one about knot theory, the other about infinity. The main goal really is to show them that there is more to math than algebra, trigonometry, and calculus.
- *Honors contract supervisor.* Calculus I students at OSU have the option to take the course for honors credit if they do a side project with a professor (assuming the professor agrees to participate, which is a voluntary thing). I always say yes to these things and have supervised a half dozen of them. My projects involved students coming once a week into my office to discuss the work of Archimedes, and then submitting a report at the end of the semester. My point was to make them read beautiful mathematical arguments, and also show them how difficult integration is without the fundamental theorem of calculus (or algebra, for that matter!)
- *Oklahoma State Topology Reading Seminar.* I've ran these for several semesters here at Oklahoma State. We pick a paper or collection of papers that everyone's interested in and take turns presenting parts of them. I also played an active role in these kinds of things while I was a graduate student at Iowa.

- *GAUSS*, co-organizer. GAUSS is short for “Graduate And Undergraduate Student Seminar.” It was a seminar at Iowa designed to present advanced ideas to undergraduates in a way that was fun, and was part of Iowa’s broader attempt to “vertically integrate” the math department. I was a co-organizer with fellow graduate student Ross Kilgore, and gave probably half a dozen talks in it as well.
- *Professional Development Seminar*, co-organizer. This was another seminar at Iowa aimed at helping graduate students with their professional development. The main show runners of this one were my advisor Maggy Tomova and Julianna Tymoczko. My job was to send out funny e-mails in order to get people to come. It was well attended, and I give myself lots of credit for that.

RESEARCH

My research area is in geometric topology, specifically combinatorial 3-manifold topology and knot theory.

- **New examples of tunnel number subadditivity.** *Topology Appl.* 160 (2013), no. 3, 482-487
- **Two varieties of tunnel number subadditivity**, dissertation.
- **On the Heegaard genus of glued 3-manifolds**, preprint available at <http://arxiv.org/abs/1211.4568>.
- **A lower bound on tunnel number degeneration**, preprint available at <http://arxiv.org/abs/1407.3554>
- **The classification of some GK-trisections**, preprint available at <http://arxiv.org/abs/1503.08511>
- **High distance free decompositions**, (w/ J. Johnson), in preparation

INVITED TALKS

In addition to many talks given at Oklahoma State University and the University of Iowa, I have been invited to speak about my research at the following conferences and seminars:

- *The classification of some GK-trisections.* Moab Topology Conference, Moab, Utah (to happen in May 2105)
- *The classification of some GK-trisections.* Topology Seminar, University of Georgia, Athens, GA (April 2015)
- *A lower bound on tunnel number subadditivity.* Topology Seminar, University of Arkansas, Fayetteville, AR (December 2014)
- *A lower bound on tunnel number subadditivity.* Topology Seminar, Boston College, Boston, MA (October 2014)
- *A lower bound on tunnel number subadditivity.* Thin Manifold Conference, Iowa City, IA (July 2014)
- *High distance free decompositions* Topology Seminar, University of Arkansas, Fayetteville, AR (April 2014)
- *High distance free decompositions and amalgamations of groups* Topology Seminar, University of Oklahoma, Norman, OK, (Spring 2014)
- *A lower bound on tunnel number subadditivity.* Redbud Conference, Stillwater, OK, (October 2013)
- *A lower bound on the Heegaard genus of amalgamated 3-manifolds.* AMS sectional meeting, special session on Topology of 3-manifolds, Iowa State University, Ames, IA, (April 2013)
- *A new result on tunnel number subadditivity.* 27th Summer conference on Topology and its Applications, Minnesota State University, Mankato, MN (July 2012)
- *Computing an upper bound on tunnel number using the Dimer graph.* Baton Rouge Young Topologists Research Retreat, Baton Rouge, LA (January 2012)
- *Free decompositions and tunnel number subadditivity.* Topology Seminar, UC Santa Barbara, Goleta, CA (November 2011).

REFERENCES

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