

# Genevieve S. Walsh

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## Education and Degrees

- Ph.D. University of California at Davis, Mathematics. June 2003.  
Dissertation Advisor: W. P. Thurston.
- M.S. Auburn University, Mathematics. June 1997.  
Thesis Advisor: K. Kuperberg.
- Budapest Semesters in Mathematics. Fall 1994 and Spring 1995.
- B.A. Oberlin College, Mathematics with Honors. June 1994.

## Areas of Specialization

Geometric Topology, Hyperbolic Geometry

## Professional Affiliations

American Mathematical Society, Association of Women in Mathematics

## Awards and Fellowships

- NSF Research Grant (PI). 2008-2011.
- Bernstein Faculty Fellow. Tufts University, 2007-2009.
- NSF VIGRE Postdoctoral Fellowship. University of Texas at Austin, 2003-2006.
- VIGRE Graduate Fellow. University of California at Davis, 2002-2003.
- Dissertation Year Fellow. University of California at Davis, 2001-2002.

## Academic Positions

- Assistant Professor, Tufts University. Fall 2006-present. (on leave Fall 2006)
- Postdoctoral Researcher, Université du Québec à Montréal. Fall 2006.
- VIGRE Postdoctoral Instructor, University of Texas at Austin. Fall 2003-Spring 2006.
- Postdoctoral Associate, Cornell University. Summer 2003.

## Dissertation

- *Great circle links in the three-sphere*. June 2003. Advisor: W. P. Thurston.

## Publications and Submitted Papers

- *Commensurability classes of two-bridge knot complements*. Joint with Alan Reid. **Algebr. Geom. Topol.**, Vol. 8 (2008) pp. 1031–1057. arXiv:math.GT/0612473.
- *Incompressible surfaces and spinnormal form*. Submitted. arXiv:math.GT/050302.
- *Three-manifolds, virtual homology, and group determinants*. Joint with Daryl Cooper. **Geom. Topol.**, Vol. 10 (2006) pp. 2247–2269. arXiv:math.GT/0603152.
- *Virtually Haken fillings and semi-bundles*. Joint with Daryl Cooper. **Geom. Topol.**, Vol. 10 (2006) pp. 2237–2245. arXiv:math.GT/0407328.
- *Great circle links and virtually fibered knots*. **Topology**, Vol. 44 (2005), No. 5, pp. 947–958. arXiv:math.GT/0407361.
- *Double bubbles in the three-torus*. Joint with Miguel Carrión Álvarez, Joseph Corneli and Shabnam Beheshti. **Experiment. Math.**, Vol. 12 (2003) pp. 79–89. arXiv:math.DG/0208120.

## Preprints

- *On commensurability of knot complements*. Joint with M. Boileau and S. Boyer. (May 2008).
- *The automorphism group of the free group of rank two is a  $CAT(0)$  group*. Joint with K. Ruane and A. Piggott. (Sept 2008) arXiv:0809.2034.
- *On the window*. (Sept 2008).

## Non-referreed

- *Surfaces in finite covers and the group determinant*. Part of the conference proceedings for *Low Dimensional Manifolds*. **Oberwolfach Reports** Vol. 2 (2005).

## Conference Talks

- June 2008. Canada / France Congress. Session: “Low-dimensional topology”. Montreal, Canada.
- August 2007. Teichmüller Theory and Kleinian Groups: “Connections for Women” Conference. MSRI, Berkeley, CA.
- August 2007. Geometric Group Theory: “Connections for Women” Conference. MSRI, Berkeley, CA.
- July 2007. “Three-manifold Geometry and Topology”. Warwick Mathematics Institute. Warwick, England.
- September 2006. The 2nd William Rowan Hamilton Geometry and Topology Workshop, “Surface Groups in Low Dimensional Topology and Geometric Group Theory”. Dublin, Ireland.

- July 2006. Institute for Advanced Study/ Park City Math Institute Workshop, “Low Dimensional Topology”. Park City, Utah.
- September 2005. Conference on Low-dimensional Manifolds. Oberwolfach, Germany.
- July 2005. “On Heegaard splittings of 3-manifolds” Conference. Technion, Haifa, Israel.
- March 2005. Spring Topology and Dynamical Systems Conference. (Semi-Plenary Talk) Berry College.
- May 2004. “Trends in three-manifolds” Conference. UQAM. Montreal, Canada.
- March 2004. Spring Topology and Dynamical Systems Conference. (Special Session Talk) UAB.
- October 2003. Texas Geometry and Topology Conference. Rice University.
- September 2003. “Topology in and around dimension three” Conference. Banff, Canada.
- June 2003. Georgia Topology Conference. University of Georgia.

### **Invited Seminar Talks**

- March 2008. Topology Seminar, University of Texas, Austin.
- November 2007. Williams College Colloquium.
- April 2007. Geometry/Topology Seminar, SUNY Buffalo.
- April 2007. Geometric Topology Seminar, Columbia University.
- April 2007. Topology and Geometric Group Theory Seminar, Cornell University.
- March 2007. Geometry and Topology Seminar, Brown University.
- February 2007. Topology Seminar, Brandeis University.
- February 2007. Geometric Topology Seminar, Boston College.
- November 2006. 3- and 4-Manifolds Seminar, Michigan State University (+ special RTG talk).
- October 2006. Cascade Topology Seminar, Portland State University.
- October 2006. Geometric Group Theory Seminar, McGill University.
- September 2006. Topology Seminar, Université du Québec à Montréal.
- April 2006. Topology Seminar, Rice University.
- December 2005. Topology Seminar, University of British Columbia.
- December 2004. Topology Seminar, Washington University in St. Louis.
- November 2004. Topology Seminar, University of California at Davis.
- April 2004. Topology Seminar, Tulane University.

- January 2004, May 2006. Topology Seminar, University of California at Santa Barbara.
- November 2003. Topology Seminar, Columbia University.
- November 2003. Topology Seminar, Princeton University.

### **Math Society Meeting Talks**

- May 2007. Special Session on Low-dimensional Topology, Joint meeting of the American Mathematical Society and the Sociedad Matemática Mexicana (SMM). Zacatecas, Mexico.
- September 2006. Special Session on Low-dimensional Topology, Joint Meeting of the Canadian Math Society and the Sociedad Matemática Mexicana (SMM). Guanajuato, Mexico.
- December 2005. Topology Session, Canadian Math Society Meeting, Victoria, B. C.
- April 2005. Special Session on Geometric Methods in Three Dimensions. AMS meeting, University of California at Santa Barbara.
- October 2004. Special Session on Geometry of Hyperbolic Manifolds. AMS meeting, Vanderbilt University.
- May 2004. Special Session on Low Dimensional Topology. Joint Meeting of the American Mathematical Society and the Sociedad Matemática Mexicana (SMM). Houston.
- January 2004. Special Session on Low Dimensional Topology. Phoenix, Arizona.
- October 2003. Special Session on Knots, Links, and Embedded Graphs. AMS meeting, University of North Carolina at Chapel Hill.

### **Other Lectures/Colloquia**

- Lecturer, 2008 Women in Mathematics Program: “Surfaces, orbifolds and knots”. Institute for Advanced Studies, Princeton N.J.
- Millican colloquium talk: “Which three-manifold is the universe?”, University of North Texas, May 2005.

### **Teaching Experience**

- Assistant Professor, Tufts University:  
Linear Algebra 26 (Spring 2006), Geometry and Topology 217 (Fall 2007), Calculus 12 (Fall 2007), Algebraic Topology and Surface Theory 218 (Spring 2008).  
Advisor for Jeff Carlson (PhD student Tufts University) Spring 2008 - present.
- Instructor, University of Texas at Austin:  
Single and Multi-variable Calculus, Number Theory (Moore method), Topology (Moore method) Individual reading course on “Knots, links and three-manifolds”, Graduate Topics Course: “Surfaces in three-manifolds”.
- Associate Instructor and Teaching Assistant, University of California at Davis:  
Single and Multi-variable Calculus, Linear Algebra, Topology, Real Analysis.

## Service

- Organizer, 2008 Wiener Lectures at Tufts University. Speaker: Jeff Weeks.
- Co-organizer of special AMS conference “Teichmüller Theory and Low-dimensional Topology, Snowbird Utah June 2008.
- Co-organizer of special session “Geometric Topology/Geometric Group theory” at the 2007 Spring Topology and Dynamical Systems Conference, University of Missouri Rolla.
- Co-organizer of Geometric Group Theory and Topology Seminar, Tufts University, Spring 2007 - present.
- Tufts Departmental and University Committees:
  - Member, Graduate Committee, 2008-2009.
  - Member, Hiring Committee, 2007-2008.
  - Member, Undergraduate Mathematics Committee, Spring 2007.
  - Member, Publicity Committee, 2007-2008.
  - Member, Committee on Information Technology, 2007-2008, 2008-2009
  - Member, Thesis Committee for Maggie LaPlante, Fall 2007. Thesis Committee for Emily Grant, Spring 2008.
- Referee for: **Algebr. Geom. Topol.**, **Amer. Math. Monthly**, **J. London Math. Soc.**, **Geom. Topol.**,
- Reviewer for Math Reviews.
- Indexed **The Geometry and Topology of Three-Manifolds**, W. P. Thurston’s Princeton course notes.