

Genevieve S. Walsh

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CURRENT AS OF OCTOBER 1 2015

Education

- 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, Geometric Group Theory

Professional Affiliations

American Mathematical Society, Association for Women in Mathematics

Awards and Fellowships

- NSF Research Grant (PI) 2012- 2015. No-cost extension 2015-2016.
- NSF Research Grant (PI) 2008-2011. No-cost extension 2011- 2012.
- Bernstein Faculty Fellow. Tufts University, 2007-2009.
- VIGRE Postdoctoral Fellowship. University of Texas at Austin, 2003-2006.

Positions subsequent to PhD

- Associate Professor, Tufts University. Fall 2013-present.
- Visitor, ICERM. Fall 2013.
- Assistant Professor, Tufts University. Fall 2006-Spring 2013.
- Visitor, Harvard University. Spring-Fall 2010.
- 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.

Postdoctoral Institutions and Advisors

Cornell University - William P. Thurston

University of Texas at Austin - Alan W. Reid

Université du Québec à Montréal - Steven Boyer

Dissertation

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

Refereed Papers

- *Knot complements, hidden symmetries, and reflection orbifolds*. Joint with M. Boileau, S. Boyer, and R. Cebanu. To Appear, **Annales de la Faculté des Sciences de Toulouse**.
- *Right-angled Coxeter groups, hyperbolic cubes, and acute triangulations*, Joint with S.-H. Kim, To Appear, **Journal of Topology**. arXiv:1306.6025.
- *Big Dehn surgery space and the link of S^3* , Joint with N. Hoffman, To Appear, **Proceedings of the American Mathematical Society, Series B**. arXiv:1311.3980.
- *The bumping set and the characteristic submanifold*. **Algebraic and Geometric Topology** Vol. 14 (2014) 283–297. arXiv:1208.1700.
- *Knot commensurability and the Berge conjecture*. Joint with M. Boileau, S. Boyer, and R. Cebanu. **Geometry and Topology** Vol. 16 (2012) 625–664. arXiv:1008.1034.
- *Orbifolds and commensurability*. “Interactions Between Hyperbolic Geometry, Quantum Topology, and Number Theory”. **Contemporary Mathematics** Vol. 541 (2011) 221–231. arXiv:1003.1335.
- *The automorphism group of the free group of rank two is a $CAT(0)$ group*. Joint with A. Piggott and K. Ruane. **Michigan Mathematical Journal** Vol. 59 (2010) 297–302. arXiv:0809.2034.
- *Commensurability classes of two-bridge knot complements*. Joint with A. Reid. **Algebraic and Geometric Topology** Vol. 8 (2008) 1031–1057. arXiv:math.GT/0612473.
- *Three-manifolds, virtual homology, and group determinants*. Joint with D. Cooper. **Geometry and Topology** Vol. 10 (2006) 2247–2269. arXiv:math.GT/0603152.
- *Virtually Haken fillings and semi-bundles*. Joint with D. Cooper. **Geometry and Topology** Vol. 10 (2006) 2237–2245. arXiv:math.GT/0407328.
- *Great circle links and virtually fibered knots*. **Topology** Vol. 44 No. 5 (2005) 947–958. arXiv:math.GT/0407361.
- *Double bubbles in the three-torus*. Joint with M. Carrión Álvarez, J. Corneli and S. Beheshti. **Experiment. Math.** Vol. 12 (2003), No. 1, 79–89. arXiv:math.DG/0208120.

Works in progress

- *Limit sets and boundaries*, Joint with P. Haïssinsky and L. Paoluzzi, in progress.
- *On lassos*, Joint with S.-H. Kim and T. Koberda, in progress.

Non-refereed, reviews

- Review of “Mostly Surfaces”, by R. E. Schwartz, **American Mathematical Monthly**, Vol. 121 (2014) 954–956.
- *Surfaces in finite covers and the group determinant*. Part of the conference proceedings for *Low Dimensional Manifolds*. **Oberwolfach Reports** Vol. 2 (2005) 2 pages.

Research Talks and Research Visits

Talks are in research seminars unless otherwise noted.

- 2016
 - Invited Workshop Speaker: ICERM workshop: “Effective and Algorithmic Methods in Hyperbolic Geometry and Free Groups”, planned May 2016
 - Invited Speaker: Distinguished Women in Mathematics Lecturer, University of Texas at Austin, planned March 2016.
- 2015
 - Invited Workshop Speaker: “Geometric Structures on 3-manifolds Workshop”, Institute for Advanced Study. “Groups, Geometry and 3-Manifolds”, Conference in Honor of Daryl Cooper, Berkeley CA.
 - Invited Speaker: Temple University, Harvard University Reading Group Conference University of Michigan, Ann Arbor, (Planned November 2015) Ohio State, (Planned Dec 2015) AMS Special Session, NJ. (Planned November 2015).
- 2014
 - Invited Seminar/Special Session Speaker: Joint AMS/MAA meetings, CUNY graduate center, AMS sectional meeting in Baltimore, Cornell University .
 - Colloquium Speaker: Tufts University, Cornell University.
- 2013
 - Invited Speaker: “Topology, Geometry and Group Theory, Informed by Experiment ICERM, Providence RI. “Geometry and Groups after Thurston”, Dublin, Ireland. “Low-dimensional Topology and Geometry in Toulouse”, on the occasion of Michel Boileau’s 60th birthday, Toulouse, France. “The Topology of 3-dimensional Manifolds” Workshop, Montréal, Canada.
 - Invited Seminar/Special Session Speaker: Yale University, Boston College, Temple University, Harvard University (7 minute talk), AWM symposium in Santa Clara, AMS special session in Boston.

- (2011-2012)
 - Invited Speaker: “Cannon” meeting at the Fourier Institute (Grenoble), Wellesley College, Dartmouth College Korea Advanced Institute of Science and Technology (4 talks).
 - Research Program Participant: Institute for Advanced Study/Park City Mathematics Institute Workshop “Geometric Group Theory”.
 - Researcher: 2-week “Research in Pairs” stay, Oberwolfach, Germany.
 - Invited Speaker: “Workshop on Dehn Surgery”, Austin, TX. Cornell University, Temple University, Association of Women in Mathematics 40th Anniversary Conference (Special Session in Geometric Group Theory).
 - Invited Speaker and Conference Participant: “Geometry and Topology Down Under: A Conference in Honor of Hyam Rubinstein”, Melbourne, Australia.
- (2010-2011)
 - Invited Speaker, American Mathematical Society (AMS) Meetings: Worcester MA (2 special sessions), Newark, NJ (special session).
 - Invited Speaker: City University of New York, University of Oklahoma, Oklahoma State (Colloquium), Harvard University, Boston College. CIRGET Reunion Conference, Montréal Canada.
- (2009-2010)
 - Invited Speaker: American Mathematical Society (AMS) special session, Albuquerque, NM. Harvard University (twice).
 - Invited Speaker and Conference Participant: “Quasi-isometric rigidity in low-dimensional topology” 5-day workshop. Banff International Research Station.
- (2008-2009)
 - Invited Speaker: Yale University, Wesleyan University, Colby College (Colloquium). Canada / France Congress. Special Session: “Low-dimensional topology”. Montréal, Canada. Moab Topology Conference. Moab, Utah.
 - Invited Speaker and Workshop Participant: “Interactions between Hyperbolic Geometry, Quantum Topology and Number Theory” Workshop and Conference, Columbia University, New York, NY (3 lectures).
- (2007-2008)
 - Invited Speaker: University of Texas at Austin, Williams College (Colloquium). Teichmüller Theory and Kleinian Groups: “Connections for Women” Conference. MSRI, Berkeley, CA (August 17 2007). Geometric Group Theory: “Connections for Women” Conference. MSRI, Berkeley, CA (2 lectures) (August 23 2007).
 - Invited Speaker and Conference Participant: “Three-manifold Geometry and Topology” Conference. Warwick, England.
 - Invited Speaker: Special Session on Low-dimensional Topology, Joint meeting of the American Mathematical Society and the Sociedad Matemática Mexicana (SMM) Zacatecas, Mexico.

- (2006-2007)
 - Invited Speaker: SUNY Buffalo, Columbia University, Cornell University, Brown University, Brandeis University, Michigan State University (2 Lectures), McGill University, Université du Québec à Montréal. Cascade Topology Seminar, Portland State University. Special Session on Low-dimensional Topology, Joint Meeting of the Canadian Math Society and the Sociedad Matemática Mexicana (SMM) Guanajuato, Mexico.
 - Invited Speaker and Workshop Participant: “The Second William Rowan Hamilton Geometry and Topology Workshop” Dublin, Ireland.
 - Invited Speaker: Institute for Advanced Study/Park City Math Institute Workshop, “Low-dimensional Topology” Park City, Utah.
- (2005-2006)
 - Invited Speaker: University of California at Santa Barbara, Rice University, University of British Columbia. Special Session on Low-dimensional Topology. Canadian Math Society Meeting, Victoria, B. C.
 - Invited Conference Participant and Speaker: “Conference on Low-dimensional Manifolds”. Oberwolfach, Germany. “On Heegaard splittings of 3-manifolds” Conference. Technion, Haifa, Israel.
- (2004-2005)
 - Invited Speaker: American Mathematical Society (AMS) special sessions: University of California at Santa Barbara, Vanderbilt University.
 - Invited Speaker: Spring Topology and Dynamical Systems Conference (Semi-Plenary Talk) Berry College.
 - Invited Speaker: Washington University in St. Louis, University of California at Davis.
 - Invited Speaker: “Trends in three-manifolds” Conference Montréal, Canada.
- (2003-2004)
 - Invited Speaker: Tulane University, Princeton University. Texas Geometry and Topology Conference, Rice University. Georgia Topology Conference, University of Georgia.
 - Invited Speaker: Special Session on Low-Dimensional Topology. Joint Meeting of the American Mathematical Society. and the Sociedad Matemática Mexicana (SMM) Houston.
 - Invited Speaker: American Mathematical Society (AMS) special sessions: University of North Carolina at Chapel Hill, Phoenix, Arizona. Spring Topology and Dynamical Systems Conference. Birmingham, AL.
 - Invited Conference Participant and Speaker: “Topology in and around dimension three” Conference, Banff, Canada.

Teaching at Tufts University

- Courses taught: Introduction to Calculus, Calculus II, Discrete Mathematics, Linear Algebra, Honors Linear Algebra, Point Set Topology, Algebraic Topology (undergraduate), Geometry and Topology, Algebraic Topology (graduate), Topics in Hyperbolic Geometry, Topics in Geometric Group Theory.

- Former PhD Student: Emily Stark. Dissertation: “Abstract Commensurability and Quasi-isometric Classification of Hyperbolic Surface Group Amalgams” (2015). First Position: University of Haifa, Postdoctoral Researcher.
- Current PhD students: Burns Healy, Chris O’Donnell.
- Summer Scholars Student: Samir Chowdhury.

Other teaching

- Mini-course Lecturer and member of Scientific Committee, 2008 Women in Mathematics Program. (Hyperbolic Geometry) Institute for Advanced Studies, Princeton N.J.
- Instructor at the University of Texas at Austin: Single and Multi-variable Calculus, Number Theory, Point-set topology, Graduate Topics Course: “Surfaces in three-manifolds”.

Service

- Served on NSF grant-review panel and NSF postdoctoral fellowship panel.
- Organizing Committee, ICERM Semester Program: “Computation, Experiment, and Algorithms in Topology and Geometry” (and on the organizing committee for two conferences), Fall 2013.
- Co-organizer of AMS Special Session: “Hyperbolicity in Manifolds and Groups”, Joint Meetings, Boston MA. 2012.
- Co-organizer of Geometric Group Theory and Topology Seminar, Tufts University: Spring 2007-Fall 2015.
- Administered Oral Exams in Geometry and Topology: Spring 2008, Fall 2008, Spring 2009, Spring 2011, Fall 2011, Spring 2012.
- Organizer for the Wiener lectures, Tufts University Fall 2008. 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.
- Tufts Departmental Committees:
 Hiring Committee, (2007-2008) (2009- 2010) (2012-2013). Chair, (2010-2011), (2015-2016).
 Course Assignment Committee, (2015-2016). Graduate Committee, (2008-2009) (2009 - 2010) (2011-2012) (Spring 2013) (Spring 2014). Curriculum Committee, (Spring 2007).
 Thesis/Dissertation Committees: Maggie LaPlante (2007), Emily Grant (2008), Aaron Brown (2011), Andy Eisenberg (2015).
- Tufts University Committees:
 Work/Life Balance Committee (2014-2015)(2015-2016). Faculty Workload Committee (Spring 2014). Library Committee, (2012-2013). Committee on Information Technology, (2007-2008) (2009-2010) (2010-2011) (2011-2012).

- Referee for: **Algebraic and Geometric Topology, Geometry and Topology, American Mathematical Monthly, Journal of the London Mathematical Society, Geometriae Dedicata, Pacific Journal of Mathematics, Communications in Analysis and Geometry, Proceedings of the American Mathematical Society.**
- Reviewer for Mathematical Reviews.