Emily Stark

Technion - Israel Institute of Technology
Department of Mathematics
Haifa, Israel

Education

Ph.D. in Mathematics, Tufts University   2015
   Thesis advisor: Genevieve Walsh
M.S. in Mathematics, Tufts University   2011
B.A. in Mathematics, Pomona College   2009
Budapest Semesters in Mathematics   Fall 2007

Employment

Postdoctoral fellow, Technion - Israel Institute of Technology   2016- present
Postdoctoral fellow, University of Haifa, Department of Mathematics   2015-2016

Research Interests

My research is in geometric group theory and low-dimensional topology. My interests include quasi-isometric classification and rigidity, notions of commensurability, boundaries of groups, surfaces and 3-manifolds, and hyperbolic and CAT(0) geometry.

Awards and Honors

Zuckerman STEM Leadership Fellowship $2017 - 2019$
National Science Foundation Graduate Research Fellowship $2009 - 2012$
Tufts University Provost Fellowship   2009

Papers

(1) Nonplanar graphs in boundaries of CAT(0) groups. (Joint with K. Schreve)
   arXiv:1807.02439. *Submitted,* (2018).

(2) The visual boundary of hyperbolic free-by-cyclic groups. (Joint with Y. Algom-Kfir and A. Hilion.)
   arXiv:1801.04750. *Submitted,* (2018).

(3) Quasi-isometric groups with no common model geometry. (Joint with D. Woodhouse.)
   arXiv:1711.05026. *Submitted,* (2017).

(4) Detecting a subclass of torsion-generated groups.
   arXiv:1710.05684. *Submitted,* (2017).

(5) Surface group amalgams that (don't) act on 3-manifolds. (Joint with C. Hruska and H. Tran.)
   American Journal of Mathematics. To appear, (2018).

(6) Topological rigidity fails for quotients of the Davis complex.
   Proceedings of the American Mathematical Society. To appear, (2017).

(7) Commensurability for certain right-angled Coxeter groups and geometric amalgams of free groups. (Joint with P. Dani and A. Thomas.) *Groups, Geometry, and Dynamics.* To appear, (2017).

(8) Abstract commensurability and quasi-isometry classification of hyperbolic surface group amalgams.
   Geometriae Dedicata. (2017) 186(1), 39-74.

(9) Intrinsically linked graphs in $\mathbb{R}P^3$. (Joint with J. Federman, J. Foisy, K. McNamara.) *Involve Journal of Mathematics.* (2017) Vol.10-1, $1-20$.

(10) Intrinsically linked graphs in projective space. (Joint with J. Bustamante, J. Federman, J. Foisy, K. Kozai, K. Matthews, K. McNamara, K. Trickey.) *Algebraic and Geometric Topology.* **3** (2009) No. 9, $1255-1274$.

Invited Conference Talks

Summer Conference on Topology and its Applications, WKU (Semi-plenary speaker)	July 2018
Topological and Homological Methods in Group Theory, Bielefeld, Germany	April 2018
Structure of 3-manifold groups, CIRM, Luminy, France	February 2018
Israeli Mathematical Union Annual Meeting	May 2017
Spring Topology and Dynamics Conference, Jersey City	March 2017
Non-Positive Curvature in Action, Cambridge, England	January 2017
Israeli Mathematical Union Annual Meeting	June 2016
Topological Methods in Group Theory, Ohio State University	June 2014
Workshop in Geometric Topology, University of Wisconsin-Milwaukee	June 2014
AWM Research Symposium poster session, Santa Clara, CA	March 2013
Binghamton University Graduate Conference in Algebra and Topology	November 2012
Southern California Student Conference on Spatial Graphs, Caltech	April 2009
U. Nebraska Conference for Undergraduate Women in Mathematics	January 2009
Joint Mathematical Meetings undergraduate poster session	January 2009

Invited Seminar Talks and Colloquia

University of California Santa Barbara Topology Seminar	June 2018
University of Wisconsin-Milwaukee Topology Seminar	April 2018
CUNY Geometry and Topology Seminar	April 2018
University of Haifa Geometry and Topology Seminar	December 2017
University of Michigan Topology Seminar	October 2017
Tufts University Geometric Group Theory and Topology Seminar	October 2017
Technion University Geometry and Topology Seminar	January 2017
MSRI Seminar, Berkeley, CA	October 2016
Tufts University Geometric Group Theory and Topology Seminar	September 2016
Technion University Geometry and Topology Seminar	December 2015
University of Haifa Geometry and Topology Seminar	November 2015
CCNY Mathematics Colloquium	October 2015
University of Illinois-Chicago Geometry, Topology, and Dynamics Seminar	April 2015
University of Wisconsin-Milwaukee Topology Seminar	April 2015
Brandeis University Topology Seminar	April 2015
Louisiana State University Topology Seminar	February 2015
Bowdoin College Mathematics Colloquium	December 2014
CUNY Geometry and Topology Seminar	November 2014
Tufts University Geometric Group Theory and Topology Seminar	February 2014
Claremont Colleges Topology Seminar	October 2008

Teaching experience

Teaching Assistant, Summer@ICERM, Brown University	2015

Research experience for undergraduates program
Mentor to research groups in applied topology and dynamics

Graduate Student Teaching Assistant, Tufts University   2012-2015
    Primary Instructor:
        Math 30, *Introduction to Calculus* (Fall 2012)
        Math 34, *Calculus II* (Summer 2013)
        Math 36, *Applied Calculus II* (Spring 2013, Fall 2013, Spring 2014)
    Teaching Assistant:
        Math 61, *Discrete Math* (Fall 2014)
        Math 19, *Math of Social Choice* (Spring 2015)

Teaching Assistant, CIRM, Luminy, France   January 2014
    Hyperbolic groups mini-course

Teaching Mentor & Grader, Pomona College   2008-2009
    Calculus III, Real Analysis I, Galois Theory

Service

Organizer and founder, Tufts University Graduate Student Seminar   2010-2015
Co-organizer, MRC Special Session in Geometric Group Theory,
    Joint Mathematical Meetings, Baltimore, MD   January 2014

Outreach

Math Circles for elementary and secondary students   2012 - 2015
    Instructor, Harvard Math Circle (Fall 2013, Spring 2014, Fall 2014, Spring 2015)
    Lead organizer, Tufts Math Circle (Fall 2013)
    Instructor, Tufts Math Circle (Spring 2012, Fall 2012, Spring 2013, Fall 2013)
    Guest Lecturer, Northeastern Math Circle (Spring 2013)

Volunteer tutor, Community Learning Center, Cambridge, MA   Jan. 2011 - Jan. 2012
    Weekly one-on-one sessions with an adult learner

Volunteer instructor, Museum of Science, Boston   Oct. 2009 - Jan. 2011
    Facilitated weekly activities in the Discovery Center

Selected programs attended

Mathematical Research Communities: Geometric Group Theory, Snowbird, UT   June 2013
PCMI-IAS Graduate Summer School in Geometric Group Theory, Park City, UT   July 2012
University of Nebraska IMMERSE Summer Program   June-July 2009

Citizenship: United States of America

August 12, 2018