

Jonathan Michael Bloom

CONTACT INFORMATION	Department of Mathematics Massachusetts Institute of Technology Room 2-236, 77 Massachusetts Ave. Cambridge, MA 02139	<i>Voice:</i> (248) 821-9801 <i>Fax:</i> (617) 253-4358 <i>Email:</i> jbloom@math.mit.edu <i>Web:</i> math.mit.edu/~jbloom
PERSONAL	United States citizen. Born in Detroit, Michigan.	
POSITION	Massachusetts Institute of Technology , Cambridge, Massachusetts <i>CLE Moore Instructor and NSF Postdoctoral Fellow</i>	September 2011 - present
RESEARCH INTERESTS	Low-dimensional topology and geometry; knot theory; monopole Floer homology; Heegaard Floer homology; Khovanov homology.	
EDUCATION	Columbia University , New York, New York Ph.D., Mathematics, May 2011 <ul style="list-style-type: none">• Advisor: Peter Ozsváth• Thesis: <i>Monopole Floer Homology, Link Surgery, and Odd Khovanov Homology</i> M.Phil., Mathematics, May 2009 M.A., Mathematics, May 2007	September 2006 - May 2011
	Harvard University , Cambridge, Massachusetts B.A., Mathematics, <i>magna cum laude</i>	September 2000 - June 2004
POSITIONS AND FELLOWSHIPS	NSF Mathematical Sciences Postdoctoral Research Fellowship <i>Postdoctoral Fellow</i>	from September 2011
	Massachusetts Institute of Technology , Cambridge, Massachusetts <i>Exchange Scholar</i>	September 2010 - present
	Mathematical Sciences Research Institute , Berkeley, California <i>Program Associate</i> Organized weekly graduate seminar for the program <i>Homology Theories of Knots and Links</i> .	January 2010 - May 2010
	Harvard University , Cambridge, Massachusetts <i>Instructor and Eliot House Non-Resident Tutor</i> Taught three first-year calculus courses and awarded <i>Certificate of Distinction in Teaching</i> . Advised math majors in Eliot House and organized evening study halls for all math levels.	September 2005 - May 2006
	John Huston Finley Traveling Fellowship , Africa, Middle East, Asia, Australia <i>Finley Fellow</i> Explored math education around the world and taught in a secondary school in Botswana.	July 2004 - June 2005
PUBLICATIONS	J. Bloom. <i>A link surgery spectral sequence in monopole Floer homology</i> . Advances in Mathematics 226 (2011), no. 4, 3216–3281. J. Bloom. <i>Odd Khovanov homology is mutation invariant</i> . Mathematical Research Letters 17 (2010), no. 1, 1–10.	

TEACHING
EXPERIENCE

Massachusetts Institute of Technology, Cambridge, Massachusetts

Recitation Instructor

- Intro. to Probability and Statistics (18.05, 2 sections), Jeremy Orloff Spring 2012
<http://web.mit.edu/jorloff/www/18.05/>
- Differential Equations (18.03, 2 sections), David Jerison Spring 2011

Columbia University, New York, New York

Instructor

- Knots and Dynamics (new undergraduate research seminar) Fall 2009
<http://math.mit.edu/~jbloom/knotdyn.html>
- Calculus IV (multiple integrals and vector calculus) Summer 2008

Teaching Assistant

- Modern Algebra II, Dave Bayer Fall 2009
- Calculus III, Aaron Lauda Fall 2009
- Fixed-point Floer Homology REU, Robert Lipshitz and Tim Perutz Summer 2009
- Algebraic Topology I (graduate), Tim Perutz Fall 2008
- Modern Geometry II (graduate), Michael Thaddeus Spring 2008
- Modern Geometry I (graduate), Michael Thaddeus Fall 2007

Harvard University, Cambridge, Massachusetts

Instructor

- Calculus II (Math Xb, two sections) Spring 2006
- Calculus I (Math Xa) Fall 2005

Teaching Assistant

- Theory and Practice of Teaching Number Theory, John Boller Summer 2003
- Linear Algebra and Multivariable Calculus (Math 23a), John Boller Fall 2001

Math Tutor, Boston, Massachusetts and New York, New York

Fall 2003 - present

Middle school through university level, both private and volunteer.

Mater Spei College, Francistown, Botswana

Summer 2004

Taught algebra and geometry (in English) at a secondary school.

Colegio Franco-Inglés, Viña del Mar, Chile

Summer 2002

Taught math and English (in Spanish and English) at a secondary school.

Ross Mathematics Program, Columbus, Ohio

Summer 2001

Mentored high school students in a challenging number theory program.

INVITED TALKS

Contact and Symplectic Geometry Summer School, Budapest

July 13, 2012

Nineteenth Gökova Geometry / Topology Conference

May 28 and June 1, 2012

Princeton Topology Seminar

October 25 and 27, 2011

Notre Dame Felix Klein Seminar

October 13, 2011

Michigan State Topology Seminar

October 10, 2011

Harvard Gauge Theory and Topology Seminar	September 16, 2011
MIT Geometry and Topology Seminar	September 12, 2011
AMS 2011 Fall Eastern Sectional Meeting, Cornell University	September 10, 2011
MIT QFT Seminar	August 2, 2011
USC Geometry and Topology Seminar	March 7, 2011
Dartmouth Geometry and Topology Seminar	January 11, 2011
Moscow State Knots and Representation Theory Seminar	December 14, 2010
MSRI Graduate Seminar	April 16 and 23, 2010
UCLA Geometry Seminar	March 5, 2010
Distinguished Student Talk, Knots in Washington XXIX	December 6, 2009
MIT Geometry and Topology Seminar	November 23, 2009
Boston College Geometry and Topology Seminar	November 19, 2009
Ohio State Topology Seminar	November 9, 2009
UT Austin Geometry Seminar	November 5, 2009
Princeton Topology Seminar	October 29, 2009
Columbia Undergraduate Math Society Seminar	October 21, 2009
Columbia Geometric Topology Seminar	January 30, 2009
Harvard Undergraduate Mathematics Colloquium	April 27, 2004
<i>This talk earned the Robert Fletcher Rogers Prize.</i>	

CONFERENCES AND WORKSHOPS ATTENDED	<i>Contact and Symplectic Geometry Summer School and Conference</i>	July 9-20, 2012
	Alfrd Rényi Institute of Mathematics, Budapest, Hungary	
	<i>Nineteenth Gökova Geometry / Topology Conference</i>	May 28 - June 2, 2012
	Gökova, Turkey	
	<i>AMS 2011 Fall Eastern Sectional Meeting</i>	September 10-11, 2011
	Cornell University, Ithaca, NY	
	<i>Homological Invariants in Low-Dimensional Topology Workshop</i>	June 13-16, 2011
	Simons Center for Geometry and Physics, Stony Brook, NY	
	<i>Geometric and Algebraic Structures in Mathematics</i>	May 26-29, 2011
	Simons Center for Geometry and Physics, Stony Brook, NY	
	<i>William Rowan Hamilton Geometry and Topology Workshop</i>	September 2-4, 2010
	Trinity College, Dublin, Ireland	
	<i>Workshop on Symplectic Geometry and Mirror Symmetry</i>	July 19-23, 2010
	Massachusetts Institute of Technology, Cambridge, MA	
	<i>Low-Dimensional Topology and Categorification</i>	June 21-25, 2010
	State University of New York, Stony Brook, NY	
	<i>Homology Theories of Knots and Links</i>	January - May, 2010
	Mathematical Sciences Research Institute, Berkeley, CA	
	<i>AMS Joint Mathematics Meetings 2010</i>	January 13-16, 2010
	San Francisco, CA	
	<i>Knots in Washington XXIX</i>	December 4-6 2009
	George Washington University, Washington D.C.	
	<i>Georgia International Topology Conference</i>	May 18-29, 2009

University of Georgia, Athens, GA

Holomorphic Curves: Algebraic Structures and Geometric Applications August 18-29, 2008
Stanford University, Palo Alto, CA

Low Dimensional Topology August 11-15, 2008
Mathematical Sciences Research Institute, Berkeley, CA

XVI Oporto Meeting on Geometry, Topology, and Physics July 5-8, 2007
Universidade do Algarve, Faro, Portugal

New Perspectives and Challenges in Symplectic Field Theory June 25-29, 2007
Stanford University, Palo Alto, CA

Georgia Topology Conference May 14-18, 2007
University of Georgia, Athens, GA

Park City Mathematics Institute: Low Dimensional Topology June 25 - July 15, 2006
Park City, UT

PUBLIC LECTURES **Knots for novices.** 2012 Cambridge Science Festival, MIT Museum of Science April 22, 2012
 It's knot (all) theory! MIT150: Under the Dome, MIT May 8, 2011
 No loose ends. 2011 Cambridge Science Festival, MIT Museum of Science April 30, 2011

MATHEMATICS **Law and Order SVU**, *Hothouse* (Episode 1012) December 5, 2008
CONSULTANT Created math visuals and coached actor playing math prodigy/murder suspect in NBC drama.
 Clip available at: <http://www.math.columbia.edu/~jbloom/blackboards.mov>

REFERENCES Peter Ozsváth petero@math.mit.edu
 Tomasz Mrowka mrowka@math.mit.edu
 Tim Perutz perutz@math.utexas.edu
 Mikhail Khovanov khovanov@math.columbia.edu