Nathaniel Bottman

CONTACT INFORMATION

215 Simonyi Hall
School of Mathematics
Institute for Advanced Study
1 Einstein Dr, Princeton, NJ 08540

Email: nbottman@math.ias.edu

PROFESSIONAL APPOINTMENTS

Member, Institute for Advanced Study, Princeton, NJ, 2016–2019.
This will be a research-only appointment.

Postdoctoral Research Fellow, Princeton University, Princeton, NJ, 2016–2019.

Instructor, Northeastern University, Boston, MA, 2015–2016.
Duties include teaching two calculus classes and one graduate-level geometry class, and conducting research.

RESEARCH INTERESTS

Symplectic geometry, Fukaya categories, J-holomorphic curves, polyfolds, mirror symmetry

EDUCATION

Massachusetts Institute of Technology, Cambridge, MA

Ph.D., Mathematics, September 2015

- Dissertation topic: "Pseudoholomorphic quilts with figure eight singularity"
- Advisor: Katrin Wehrheim

University of Washington, Seattle, WA

B.S., Mathematics, B.A., Slavic Languages and Literatures, June 2010

HONORS AND AWARDS

National Science Foundation Mathematical Sciences Postdoctoral Research Fellowship, 2016–2019

National Science Foundation Graduate Research Fellowship, 2010–2015

University of Washington Dean's Medal, 2010 (given to the top graduating senior in the natural sciences)

Goldwater Scholarship, 2008

Davidson Fellowship, 2007

PUBLICATION IN PREPARATION

2-associahedra. Nathaniel Bottman, expected Spring 2017.

Moduli spaces of witch balls. Nathaniel Bottman, expected Spring 2017.

PUBLICATIONS

Gromov compactness for squiggly strip shrinking in pseudoholomorphic quilts. Nathaniel Bottman, Katrin Wehrheim. Preprint available at http://arxiv.org/abs/1503.03486.

Pseudoholomorphic quilts with figure eight singularity. Nathaniel Bottman. Preprint available at http://arxiv.org/abs/1410.3834.

Elliptic solutions of the defocusing NLS equation are stable. Nate Bottman, Bernard Deconinck, Michael Nivala. J. Phys. A 44 (2011), no. 28, 24 pp.

KdV cnoidal waves are spectrally stable. Nathaniel Bottman, Bernard Deconinck. Discrete Contin. Dyn. Syst. 25 (2009), no. 4, 1163–1180.

INVITED TALKS

Mirror Symmetry Seminar, Kansas State University, March 2017.

Members Seminar, Institute for Advanced Study, December 2016.

Deformation Theory Seminar, University of Pennsylvania, Spring 2016

Quantum Fields and String Seminar, Perimeter Institute, Spring 2016

Jonathan Weitsman's Seminar, Northeastern University, December 2015

University of Massachusetts, Boston; Mathematics Colloquium, November 2015

Summer School on Moduli Problems in Symplectic Geometry, IHES, July 2015

Columbia Symplectic Geometry, Gauge Theory, and Categorification Seminar, April 2015

Rutgers Geometry, Symmetry, and Physics Seminar, March 2015

AMS Sectional Meeting, Michigan State University, March 2015

Northeastern University Analysis and Geometry Seminar, January 2015

Harvard Gauge Theory Seminar, October 2014

S. T. Yau's Seminar, Harvard University, October 2014

Workshop on Moduli Spaces of Pseudo-holomorphic Curves II, Simons Center, June 2014

Northern California Symplectic Geometry Seminar, Stanford University, March 2014

University of Texas Geometry Seminar, February 2014

OTHER TALKS

Graduate Workshop on Symplectic and Contact Topology, Simons Center, October 2012

MIT and Princeton graduate student seminars, Fall 2011.

TEACHING

Instructor, Math 2321 (multivariable calculus for engineers), Northeastern University, Fall 2015.

Recitation instructor, 18.01A/02A (single- and multivariable calculus), MIT, Fall 2013. Overall rating **6.5/7.0**.

Teaching assistant, Math 334/5/6 (second-year accelerated honors calculus), University of Washington, September 2008–June 2009.

ACTIVITIES ORGANIZED

Co-organizing the Symplectic Geometry Seminar at the IAS and Princeton University during 2016–17.

Co-organized a Special Session on Moduli Spaces in Symplectic Geometry at the 2016 Joint Mathematical Meetings in Seattle, WA.

Co-organized the Geometry, Physics, and Representation Theory Seminar at Northeastern during 2015–16.

Co-organized a learning seminar with Katrin Wehrheim in Spring 2014 at UC Berkeley on symplectic convolution, in which 5 participants took turns lecturing.

Co-organized the 2013 MIT-RTG Geometry Workshop in Big Bear Lake, CA. With five other MIT students, arranged a weeklong workshop where 30 graduate students and postdocs lectured on mirror symmetry, under the supervision of Mark Gross.

Organized the MIT Symplectic Coffee Seminar during Spring 2013. Invited speakers and arranged the logistics for a weekly research seminar.

Co-organized the 2012 MIT-RTG Geometry Workshop in Watsonville, CA. With Jiayong Li, arranged a weeklong workshop where 35 graduate students and postdocs lectured on the theory of polyfolds, under the supervision of Helmut Hofer.