

Ian Biringer

Department of Mathematics
Boston College
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Positions held

July 2012 – present Boston College
Assistant Professor

August 2009 – June 2012 Yale University
Gibbs Assistant Professor, NSF Postdoctoral Fellow

Degrees and Academic Experience

June 2009 University of Chicago
PhD - Mathematics
Thesis: *Algebra vs. geometry in hyperbolic 3-manifolds*

June 2005 University of Chicago
Master of Sciences - Mathematics

May 2004 Oberlin College
Bachelor of Arts - Mathematics with Highest Honors

May 2004 Oberlin College
Bachelor of Arts - Computer Science

June-July 2003 Oregon State University
Research Experiences for Undergraduates

Honors

September 2017 NSF CAREER Award
Rank, genus and Betti numbers of large-volume manifolds.

September 2016 NSF Grant - Topology

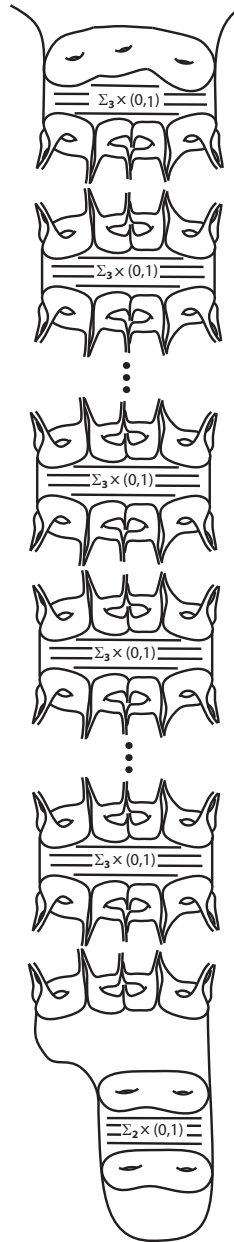
September 2012 NSF Grant - Topology

January 2009 NSF Postdoctoral Fellowship

March 2008 Graves Teaching Prize, University of Chicago

May 2004 Orr Memorial Prize in Mathematics, Oberlin College

2003-2004 Barry M. Goldwater Scholarship



Colloquia and Seminar Talks

- 2017 Brown University, Caltech
- 2016 University of Pittsburgh, Temple University, Yale University
- 2015 MIT, CUNY, Tufts.
- 2014 Colby College (Colloquium), Yale University
- 2013 Brown University, California Institute of Technology.
- 2012 Pennsylvania State University, University of Pennsylvania, Boston College, University of Iowa, University of Wisconsin, University of California - Berkeley.
- 2011 Yale University, University of Michigan, Purdue University, Tufts University, Harvard University, Université Paul Sabatier, UT-Austin, Rice University.
- 2010 Temple University, Pennsylvania State University, University of Maryland, California Institute of Technology, City University of New York, Brown University.
- 2009 University of Texas at Austin, University of Utah, Ohio State University, University of Illinois at Chicago, Université Paul Sabatier, College International of Budapest.
- 2008 University of Chicago, Yale University, Princeton University, Brown University, University of Michigan.

Conference Talks

- 2017 32nd Summer Conference on Topology and its Applications, Dayton, OH.
- 2016 Southern California Topology Conference
- 2015 Workshop on *Asymptotic Invariants of Groups* at Oxford
- 2015 Workshop on *Geometric Structures on 3-Manifolds* at IAS
- 2014 AMS Sectional on *Low-dimensional Topology and Group Theory* at UMBC
- 2013 *2nd Young Geometric Group Theorist Meeting* in Haifa, Israel
- 2013 AMS Sectional on *Hyperbolicity in manifolds and groups* at Temple University
- 2013 CMS Winter Meeting, Ottawa. Two talks: one in *Random Walks and Geometry* and one in *Geometric Group Theory and Low-Dimensional Topology*
- 2012 *Geometric Group Theory on the Gulf*
- 2012 *Kerckhoff 60th Birthday Conference*
- 2012 GEAR Senior Retreat at UIUC
- 2012 AMS sectional meeting on *Hyperbolic Geometry* at the University of Arizona
- 2012 CMS sectional meeting in Montreal, Québec
- 2011 *Filling invariants and asymptotic geometry* at the University of Indiana
- 2011 FRG Workshop organized by Colding, Minicozzi and Gabai at Princeton University

- 2011 AIM Workshop on L^2 -invariants and their relatives for finitely generated groups
- 2011 Wasatch Topology Conference
- 2010 Geometry and Topology of Character Varieties at National University of Singapore
- 2010 AMS sectional meeting at the University of Albuquerque
- 2010 Character varieties in the geometry and topology of low dimensional manifolds
at Banff International Research Station
- 2009 Wasatch Topology Conference
- 2009 AMS sectional meeting at San Francisco State University
- 2008 Ahlfors-Bers Colloquium at Rutgers University, Newark

Conferences Co-organized

- 2017 The 13th William Rowan Hamilton Workshop, Trinity College Dublin.
- 2017 Dynamics on Representation Varieties, in Rennes, France.
- 2014 The 10th William Rowan Hamilton Workshop, Trinity College Dublin.
- 2013 Special Session at the Spring 2013 AMS Sectional Meeting at Boston College
- 2013 GEAR Workshop on Higher Teichmuller Theory, Summer 2013

Papers

- *Thick hyperbolic 3-manifolds with bounded rank*,
with Juan Souto. (in preparation)
- *Iteration in Schottky space*,
with Cyril Lecuire. (in preparation)
- *Unimodular measures on the space of all Riemannian manifolds*,
with Miklos Abert. (submitted)
preprint at <https://arxiv.org/abs/1606.03360>.
- *Invariant random subgroups of semidirect products*,
with Lewis Bowen and Omer Tamuz (submitted).
preprint at <https://arxiv.org/abs/1703.01282>.
- *Metrizing the Chabauty topology*,
(submitted)
preprint at <https://arxiv.org/abs/1610.07396>.
- *On the growth of L^2 -invariants of locally symmetric spaces, II: exotic invariant random subgroups in rank one*,
with M. Abert, N. Bergeron, T. Gelander, N. Nikolov, J. Raimbault and I. Samet.
(submitted)
preprint at <https://arxiv.org/abs/1612.09510>.

- *Packing curves on surfaces with few intersections*,
with Tarik Aougab and Jonah Gaster.
under revision at IMRN.
preprint at <https://arxiv.org/abs/1610.06514>.
- *Nielsen equivalence in mapping tori over the torus*,
to appear in Conformal Geometry and Dynamics.
preprint at <https://arxiv.org/abs/1610.07528>.
- *Ends of unimodular random manifolds*,
with Jean Raimbault.
PAMS (2017).
preprint at <http://arxiv.org/abs/1411.0561>.
- *On the growth of L^2 -invariants for sequences of lattices in Lie groups*,
with M. Abert, N. Bergeron, T. Gelander, N. Nikolov, J. Raimbault and I. Samet.
Annals of Mathematics (2017)
preprint at <http://arxiv.org/abs/1210.2961>.
- *Automorphisms of the compression body graph*,
with Nick Vlamis.
JLMS (2017).
preprint at <http://arxiv.org/abs/1508.02993>.
- *Intersection growth in groups*,
with Khalid Bou-Rabee, Martin Kassabov and Francesco Matucci.
TAMS (2016)
preprint at <http://arxiv.org/abs/1309.7993>.
- *Unimodularity of invariant random subgroups*,
with Omer Tamuz.
TAMS (2016).
preprint at <http://arxiv.org/abs/1402.1042>.
- *Ranks of mapping tori via the curve complex*,
with Juan Souto.
Crelle's Journal (2015).
preprint at <http://arxiv.org/abs/1409.1878>.
- *Extending pseudo-Anosov maps to compression bodies*,
with Jesse Johnson and Yair Minsky.
Journal of Topology (2013).
preprint at <http://arxiv.org/abs/1011.0021>.
- *On the growth of Betti numbers of locally symmetric spaces*,
with M. Abert, N. Bergeron, T. Gelander, N. Nikolov, J. Raimbault and I. Samet.
Comptes Rendus Mathematique (2011).
preprint at <http://arxiv.org/abs/1104.5559>.
- *Algebraic and geometric convergence of discrete representations into $\mathrm{PSL}_2 \mathbb{C}$* ,

with Juan Souto.
 Geometry and Topology (2010).
 preprint at <http://arxiv.org/abs/1010.0459>.

- *A finiteness theorem for hyperbolic 3-manifolds*,
 with Juan Souto.
 Journal of the London Mathematical Society (2011).
 preprint at <http://arxiv.org/abs/0901.0300>.
- *The three gap theorem and Riemannian geometry*,
 with Benjamin Schmidt.
 Geometriae Dedicata (2008).
 preprint at <http://arxiv.org/abs/0803.1250>.
- *Geometry and rank of fibered hyperbolic 3-manifolds*,
 Algebr. Geom. Topol. (2009).
 preprint at <http://arxiv.org/abs/0803.1253>.
- *Algebra versus geometry in hyperbolic 3-manifolds*,
 Ph.D. Thesis - The University of Chicago (2009).

Teaching experience

Jul 2012 – present Assistant Professor at Boston College
 Intro to Abstract Math, Linear Algebra (Honors), Analysis 1, Euclidean and Non-Euclidean
 geometry, Lie Groups, Differential Geometry, Introduction to Analysis, Differential
 Topology, Multivariable Calculus, Random Methods in Geometry

Aug 2009 – Jun 2012 Gibbs Assistant Professor at Yale University
 Honors linear algebra and multivariable calculus, Graduate algebraic topology

Sep 2006 – June 2009 Instructor at the University of Chicago
 IBL honors calculus, Multivariable calculus and linear algebra, IBL geometric group theory

Sep 2006 – Dec 2008 Mentor, University of Chicago DRP
 Directed reading program for undergraduates in mathematics

Summers 2006 – 2008 Mentor, University of Chicago REU
 Research experiences for undergraduates in mathematics

June 2008 – Aug 2008 Instructor, CAAP
 Chicago Academic Achievement Program – Precalculus

Oct 2005 – June 2006 College Fellow at the University of Chicago
 Teaching assistant for IBL honors calculus

June 2002 – Aug 2002 Tutor at UW-Fox Valley.

Jan 2001 – May 2004 Grader and Assistant at Oberlin College

Personal information

My birthdate is September 16, 1982. I am a US citizen.

References

Juan Souto (PhD advisor)
Université de Rennes
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Benson Farb (secondary PhD advisor)
University of Chicago
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Yair Minsky (NSF postdoctoral mentor)
Yale University
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Richard Canary
University of Michigan
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Jeffrey Brock
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Alan Reid
University of Texas at Austin
areid@math.utexas.edu

Roger Howe (teaching reference)
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Solomon Friedberg (teaching reference)
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