Andrew Yarmola

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Employment & Education

Jul 2018 Current	*Postdoctoral Research Associate*, **Princeton University**, Princeton, NJ Research Coordinator: David Gabai
Sept 2016 Mar 2018	*Postdoctoral Researcher*, **University of Luxembourg**, Luxembourg Research Coordinator: Jean-Marc Schlenker
May 2016	*Ph.D. in Mathematics*, **Boston College**, Chestnut Hill, MA Thesis: *Convex hulls in hyperbolic 3-space and generalized orthospectral identities* Advisor: Martin Bridgeman
Sept 2015 May 2016	*Visiting Student Research Collaborator*, **Princeton University**, Princeton, NJ Research Coordinator: David Gabai
June 2010	*B.S. in Mathematics with Honors*, **Stanford University**, Stanford, CA Thesis: *Persistence and Computation of the Cup Product* Advisor: Mikael Vejdemo-Johansson

Research Interests

Low-dimensional topology, Kleinian groups, (Higher) Teichmüller Theory, geometric identities, circle packings, and computational geometry and topology.

Papers and Preprints

Hyperbolic 3-manifolds of low cusp volume.
In preparation* (joint with David Gabai, Robert Haraway, Robert Meyerhoff, and Nathaniel Thurston)

Random triangles on surfaces.
In preparation* (joint with Olivier Glorieux)

Properness for circle packing and Delaunay circle patterns in complex projective surfaces.
Submitted (joint with Jean-Marc Schlenker)

The Two-Eyes Lemma: a kissing problem for horoballs.
Submitted (joint with David Gabai and Robert Meyerhoff)

Improved bounds for average bending on the convex core of a Kleinian group
Preprint

Basmajian's identity for higher Teichmüller-Thurston theory
Journal of Topology, September 2017. (joint with Nicholas G. Vlamis)

The Bridgeman-Kahn identity for manifolds with cusped boundary
Geometriae Dedicata, August 2017 (joint with Nicholas G. Vlamis)

A new bound for Sullivan's Theorem for simply connected domains
Proc. London Math. Soc., January 2016 (joint with Martin Bridgeman and Richard D. Canary)

* An article is in preparation if it is in the process of being edited or the core theorems have (drafts of) proofs written.

Invited Talks and Presentations

Apr 2018	**Rutgers University - Newark**, Colloquium
May 2017	**National University of Singapore**, Geometric structures and representation varieties
Feb 2017	**Université de Strasbourg**, Séminaire GT3
Dec 2016	**Université de Fribourg**, Oberseminar Geometrie
Nov 2016	**INRA Nancy**, LORIA Seminar
Sep 2016	**Université du Luxembourg**, Geometry and Topology Seminar
Jul 2016	**Université d'Avignon**, Séminaire de Systèmes dynamiques, Analyse et Géométrie

Apr 2016	**Brown University**, 3rd Annual Graduate Student Math Conference
Feb 2016	**Princeton University**, NSF RTG Geometry & Topology Day
Jan 2016	**Joint Mathematics Meetings**, Seattle WA MAA General Contributed Paper Session on Geometry, II
Dec 2015	**Temple University**, Geometry-Topology Seminar
Oct 2015	**Princeton University**, Graduate Student Seminar
May 2015	**Temple University**, Graduate Student Conference in Algebra, Geometry, & Topology
Oct 2014	**Harvard University**, New Results on Hyperbolic Volume Seminar organized by C. McMullen and M. Bridgeman.
May 2014	**Georgia Institute of Technology**, Topology Student Workshop
May 2014	**University of Michigan**, GEAR Junior Retreat
Jan 2013	**University of Florida**, Topology and Dynamics Seminar
Aug 2011	**Trinity College Dublin**, 8th William Rowan Hamilton Geometry & Topology Conference Poster Session
Various	Seminar and informal talks : **Interdisciplinary Lunch Seminar**, **Stanford Computation Topology Reading Group**, **Stanford Undergraduate Student Seminar**, **Boston College Graduate Student Seminar**, and **Princeton University Graduate Student Seminar**

Academic Work Experience

	University of Luxembourg
Fall 2016	Instructor for *Introduction to Programming* (MAMATH-100)
Spring 2017	Instructor for a reading course on hyperbolic geometry
Fall 2017	Instructor for *Analysis for Applications*
	Boston College
Fall 2014	Instructor for *Finite Probability and Applications* (MATH1004)
Fall 2011/2012/2013	Instructor for *Calculus I* for small classes of non-science majors (MT100)
Spring 2012/2013/2014	Instructor for *Calculus II* for small classes non-science majors (MT101)
Fall 2010 & Spring 2011	Teaching Assistant for *Calculus I* and *Mathematics for Management Science*
Nov 2010 - Nov 2011	**Center for Retirement Research at Boston College**, *Software Developer* Developed new actuarial prediction and analysis software for state pension retiree benefit plans.
Jun 2008 - Sep 2008	**Stanford University Mathematics Camp**, *Teaching Assistant* Supervised high school students on topology and knot theory research projects.
Various	**Tutor, Grader, and Mentor** *Stanford University Mathematics Department*, *ActiveMinds Tutoring LLC*, *Boston College*, and *Princeton, NJ*

Awards and Certificates

July 2014	GEAR REGS: Geometric identities for Higher Teichmüller-Thurston Theory. Summer research grant to work with Prof. Greg McShane at Joseph Fourier University.
2013-2014	Donald J. White Teaching Excellence Award
2010 - 2016	Member of the AMS
Summer 2008	VPUE Grant in Mathematics
2006 - 2008	Toombs/LaRue and Elizabeth & Lawrence Dalgero Scholarships

Computational Experience

Advanced Knowledge	C/C++, Python, Objective-C, bash, Perl, MATLAB, Haskell, SQL.
Experience	Computer-assisted proofs, actuarial software, remote system administration, iOS Development, networking software, version control (git/svn/mercurial), iOS, Linux, macOS, Microsoft Windows.

Service

2016 - 2017	**Organizer**, *Reading Seminar on Geometry*, Université du Luxembourg
2014 - 2015	**Treasurer**, *Mathematics Graduate Student Mathematics*, Boston College
2014 - 2015	**Treasurer**, *AMS Graduate Student Chapter*, Boston College
2008 - 2010	**Financial Officer**, *Stanford University Mathematics Organization*
2007 - 2010	**Financial Officer and Founder**, *Stanford Ceramics Studio*

Conferences Attended

Aug 22 - 26 2017	*The 13th William Rowan Hamilton Geometry and Topology Workshop: Geometry and Dynamics of Moduli Spaces*, Trinity College Dublin.
Jul 31 - Aug 11 2017	*GEAR Retreat & Junior Retread*, Stanford University.
May 3 - 5 2017	*Geometric Structures and Representation Varieties*, National University of Singapore.
Feb 20 - 23 2017	*Asymptotic Geometry of Groups and Spaces*, Heidelberg University.
Jan 9 - 13 2016	*Quantization and Moduli Spaces*, University of Luxembourg.
Dec 1 - 2 2016	*Journées SL2R*, University of Luxembourg.
Jun 27 - 30 2016	*Ecole d'été : Geometric Analysis, Metric Geometry and Topology*, Institut Fourier.
Apr 5 2016	3rd *Annual Graduate Student Math Conference*, Brown University.
Jan 6 - 9 2016	*Joint Mathematics Meetings*, WSCC Seattle WA
Oct 5 - 9 2015	*Workshop on Geometric Structures on 3-Manifolds*, IAS
Apr 13 - 17 2015	*Dynamics on Moduli Spaces*, MSRI.
Jan 20 - 23 2015	*Introductory Workshop*: Dynamics on Moduli Spaces of Geometric Structures, MSRI.
Aug 26 - 30 2014	*The 10th William Rowan Hamilton Geometry and Topology Workshop: Homological Invariants in Low-dimensional Topology and Geometry*, Trinity College Dublin.
Jun 9 -13 2014	*Topology Student Workshop*, Georgia Institute of Technology.
May 23 - June 1 2014	*GEAR Junior Retreat*, University of Michigan.
May 2 - 4 2014	*RTG Workshop: Geometric structures and discrete groups*, University of Texas at Austin.
Mar 1 2013	*AMS Graduate Student Math Conference*, Brown University.
Sep 16 - 20 2013	*Exotic Geometric Structures*, ICERM.
Aug 27 - 31 2013	*The 9th William Rowan Hamilton geometry and topology workshop : Geometry and groups after Thurston*, Trinity College Dublin.
Apr 6 - 7 2013	*AMS Sectional Meeting*, Boston College.
Aug 30 - Sept 3 2011	*The 7th William Rowan Hamilton geometry and topology workshop : Geometry and dynamics on Teichmüller space*, Trinity College Dublin.