Jeffrey F. Brock

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Professional Appointments

Brown University, Providence, RI.

Director, Data Science Initiative, 2016-present.
Chair, Department of Mathematics, 2013-2017.
Professor, Department of Mathematics, 2007-present.
Associate Professor (with tenure), Department of Mathematics, 2003-2007.
Deputy Director, ICERM, 2010-2013. *Associate Director*, 2013-present.

University of Chicago, Chicago, IL.

Assistant Professor, Department of Mathematics, 2000-2003.

Stanford University, Stanford, CA.

Szegö Assistant Professor, Department of Mathematics, 1997-2000.

Visiting Positions

Université Paul Sabatier, Toulouse, France.
Maître de Conférence invité, 2010. *Professeur invité*, 2015.

University of Texas, Austin, TX.
Donald D. Harrington Faculty Fellow, 2003-2004.

Education

University of California, Berkeley, CA.
Ph.D. in mathematics, 1997, under the supervision of Curtis T. McMullen.

Yale University, New Haven, CT.
B.A. Phi Beta Kappa, *Magna Cum Laude*, distinction in mathematics, 1992.

Research Interests
hyperbolic geometry, group theory, low-dimensional topology, moduli spaces

SELECTED INVITED PRESENTATIONS

2017

Geometric Topology in Low Dimensions, Invited Speaker,
Mathematics Institute, University of Warwick, Warwick, UK.

Teichmüller Theory and Geometric Structures on 3-manifolds, Invited Speaker,
University of Luxembourg.

Geometrc Topology in Cortona, Minicourse Speaker, Cortona, Italy.

2016

Geometry, Topology and Dynamics of Moduli Spaces, Main Speaker, Singapore.

Advanced School on Geometric Group Theory and Low-Dimensional Topology, Lecturer in three hour mini-course at ICTP, Trieste, Italy.

2015

Random Lectures in Geometry, Main Speaker, University of Fribourg, Fribourg, Switzerland.

Geometric Topology, Geometric Group Theory & Dynamical Systems, Invited Speaker, Inter-University Centre Dubrovnik, Croatia.

Classical and quantum hyperbolic geometry and topology, Main Speaker, Université Paris Sud, Paris, France.

Hyperbolic Geometry and Minimal Surfaces, IMPA. Rio de Janeiro, Brazil.

Teichmüller theory and surfaces in 3-manifolds, Main Speaker. Centro De Giorgi, Scuola Normale Superiore, Pisa, Italy.

2014

The 10th William Rowan Hamilton Geometry and Topology Workshop, Public Lecture. Dublin, Ireland.

Hyperbolic Geometry and Geometric Group Theory - ICM Satellite Conference, Plenary Speaker. Tokyo, Japan.

Teichmüller theory and surfaces in 3-manifolds, Main Speaker. Centro De Giorgi, Scuola Normale Superiore, Pisa, Italy.

2013

The 9th William Rowan Hamilton Geometry and Topology Workshop, Plenary Speaker. Dublin, Ireland.

The XXII Nevanlinna Colloquium, Plenary Speaker. Henslinki, Finland.

Hyperbolic Geometry and Mapping Class Groups, three-lecture graduate minicourse. Pisa, Italy.

Geometric Topology in Cortona, Plenary Speaker. Cortona, Italy.

2012

The Poincaré Symposium, Brown University, Providence, RI.

Tech Topology Conference, Georgia Institute of Technology, Atlanta, GA.

Gear Junior Retreat, Three lecture mini-course on *Combinatorial Teichmüller Theory*. Urbana, IL.

Geometric Structures on Surfaces, summer@ICERM minicourse. Providence, RI.

Rigidity and Flexibility in Dimensions 2, 3, and 4, Steve Kerckhoff's Birthday Conference. Luminy, France.

Immersed Surfaces in Three-Manifolds Institut Henri Poincaré, Paris, France.

Current Events Bulletin One-hour invited talk at the Joint Meetings of the American Mathematical Society. Boston, MA.

2011

The hyperbolic and Riemannian geometry of surfaces and other manifolds - A conference in honor of Peter Buser, Ascona, Switzerland.

The 7th William Rowan Hamilton Geometry and Topology Workshop, Invited to give minicourse on Teichmüller theory, Dublin, Ireland.

Aspects of hyperbolicity in geometry, topology, and dynamics – A workshop in honor of Caroline Series' 60th Birthday, Warwick, England.

2010

Fourth *de Brún Workshop on Group Actions* (four-lecture minicourse), NUI Galway, Galway, Ireland.

Geometry and Analysis of Riemann Surfaces and Their Moduli (Scott Wolpert's birthday conference), U. Maryland, College Park, MD.

Geometry Topology and Dynamics of Character Varieties, NUS, Singapore.

Advanced School and Workshop on Discrete Groups in Complex Geometry, ICTP, Trieste, Italy.

M. E. Hamstrom Memorial Lecture, University of Illinois, Urbana-Champaign.

2009

 Dynamics and Geometry of Teichmüller Space, Luminy, France.

 The *Evans-Hall Memorial Lecture*, Emory University, Atlanta, GA.

 The *Julia Wells Bower Lecture*, Connecticut College, New London, CT.

2007-2008

 MSRI-Evans Lecture, Berkeley, CA, 2007.

 William Thurston's 60th Birthday Conference, Princeton, NJ, 2007.

 Teichmüller Space and Outer Space, Marseille, France, 2007

 Geometry of Moduli Spaces, Stanford, CA, 2007.

 MAA Invited Adress, AMS-MAA National Meetings, New Orleans, LA, 2007.

2005-2006

 Three-lecture series, *3-Manifolds After Perelman*, Edinburgh, Scotland, 2006.

 Three-lecture series, *Trois Journées de Topologie á Orsay*, Orsay, France, 2005.

 Low-dimensional topology meeting, Oberwolfach, Germany, 2005.

 Geometry and Topology of Three Manifolds, Trieste, Italy, 2005.

pre-2005

 AMS Invited Address, Pittsburgh, PA, 2004.

 Main Lecturer, VIGRE mini-course, Salt Lake City, UT, 2004.

 Cornell Topology Festival, Ithaca, NY, 2004.

 Georgia Topology Conference, Athens, GA, 2002.

 Plenary Address, *Ahlfors-Bers Colloquium*, Storrs, CT, 2001.

 Iberoamerican Congress on Geometry, Guanajuato, Mexico, 2001.

Colloquia and Seminars

 Colloquia: U. Bonn, Brown, Boston College, Johns Hopkins, U. Minnesota, Northwestern, OK State, U.I.C., U. Pittsburgh, Rutgers-Newark, U. Rochester, U. Toronto, U. Washington, Vanderbilt, Yale.

 Seminars: Caltech, Columbia, CUNY, GA Tech, Harvard, Princeton, Stony Brook, Stanford, U.C. Berkeley, U.C. Davis, U.C. Santa Barbara, U. Chicago, U.I.C., U. Michigan, U. Maryland, USC, U. Texas, Yale.

ACADEMIC HONORS

Elected Fellow, American Mathematical Society, 2017.

Sabbatical Fellowship, Simons Foundation, (declined), 2016.

John Simon Guggenheim Fellow, 2008.

Donald D. Harrington Faculty Fellow, University of Texas at Austin 2003-2004.

NSF Postdoctoral Fellow, Stanford University, 1997-2000.

Alfred P. Sloan Doctoral Dissertation Fellow, U.C. Berkeley, 1996-1997.

Outstanding Graduate Student Instructor Award, U.C. Berkeley, 1996.

NSF Graduate Fellow, U.C. Berkeley, 1993-1996.

Stanley and DeForest Mathematics Prizes, Yale University, 1991 and 1992.

GRANT SUPPORT

PI, NSF CCF TRIPODS Institute Grant 1740741
Foundations of Model Driven Discovery from Massive Data. Amount: $1,482,177.
Eli Upfal, Stuart Geman, Bjorn Sandstede, Joseph Hogan, Co-PIs.

NSF Grant, DMS-1608759, 9/2016-9/2019.
Volume and Combinatorics, in Hyperbolic Geometry. Amount: $239,997.

NSF Grant, DMS-1207572, 6/2012-6/2016.
Combinatorics, Models, and Bounds in Hyperbolic Geometry. Amount: $364,703.

Co-PI, NSF Mathematical Sciences Research Institute Grant, DMS-0931908.
The Institute for Computational and Experimental Research in Mathematics.
Amount: $15,495,376.

NSF Grant, DMS-0906229, 8/2009-8/2012.
Teichmüller theory, Kleinian groups, and the complex of curves. Amount: $210,754.

NSF FRG Grant, DMS-0553694, (Co-PIs Bromberg, Canary, and Minsky), 6/2006-6/2009.
Geometry and Deformation Theory of Hyperbolic 3-Manifolds. Amount: $255,420.

NSF Grant DMS-0354288, 6/2005-6/2008.
Effective Rigidity, Combinatorial Models and Parameter Spaces for Low-Dimensional Hyperbolic Manifolds. Amount: $294,624.

NSF Grants DMS-0204454 (Chicago) and DMS-0354288 (Brown), 6/2002-6/2005.
The Classification Problem for Hyperbolic 3-Manifolds. Amount: $101,601.

Postdoctoral Associate, NSF Research Grant DMS-0072133, 2000-2002.

NSF Mathematical Sciences Postdoctoral Research Fellow, Stanford University, 1997-2000.

SERVICE

Departmental Diversity Committee, Mathematics Department, 2017-present.

Organizer, Summer@ICERM Undergraduate Research Program, ICERM, 2017

Scientific Advisory Board, ICERM, 2017-present.

Committee on Committees, American Mathematical Society, 2017-present.

Steering Committee, Brown University Data Science Initiative, 2015

Co-Chair, Search Committee, ICERM Director, 2014-2015

Chair, Department of Mathematics, 2013-2017

Graduate Admissions Committee, 2012.

Tamarkin Assistant Professor Committee, 2011.

Tenure Promotion and Appointments Committee, 2010-2012

Organizer, *Geometry and Dynamics in Surfaces and 3-Manifolds, II*,
  Summer 2009 FRG conference.

Director of Undergraduate Studies, 2008-2009.

Undergraduate Science Education Committee, 2006-2007.

Organizer, *Kleinian groups and Teichmüller Theory*, Fall 2007 MSRI program.

Organizer, *Geometry and Dynamics in Surfaces and 3-Manifolds*,
  Spring 2007 FRG conference.

Freshman Advisor, 2005-2006.

Colloquium Chair, 2004-2006.

Senior Appointments Committee, 2005-2006.

Tamarkin Assistant Professor Committee, 2004-2005.

Organizer, *Tameness in Texas*, Harrington Conference at U.T. Austin, 2004.

NSF-VIGRE REU Instructor, U. Chicago, summers 2001, 2002.

RESEARCH SUPERVISION

NSF Postdoctoral Sponsor for Kathryn Mann, Brown University 2017-present.

NSF Postdoctoral Sponsor for Tarik Aougab, Brown University 2015-present.

Postdoctoral Mentor for Sara Maloni, Brown University 2013-2016.

NSF Postdoctoral Sponsor for Johanna Mangahas, Brown University 2011-2014.

NSF Postdoctoral Sponsor for Richard Kent, Brown University 2006-2010.

NSF Postdoctoral Sponsor for David Dumas, Brown University 2005-2008.

Ph.D. Thesis Advisor for Ali Gokturk, 2006-2011; Yunhui Wu, 2008-2012;
  Isaac Solomon, 2014-present;
  Peihong Jiang, Ashley Weber, and Sunny Yang, 2015-present.

Undergraduate Thesis Advisor for Ilya Kopysitsky, Brown University 2005-2006.

UTRA Supervisor, Yuji Kosugi, Brown University, Summer 2006.

Secondary graduate advisor to Dan Margalit and Pallavi Dani,
  University of Chicago.

PUBLICATIONS

For publications and preprints, see `http://www.math.brown.edu/~brock/`.