
CONTACT INFORMATION	Department of Mathematics Johns Hopkins University 404 Krieger Hall 3400 N. Charles St. Baltimore, MD 21218 USA	<i>E-mail:</i> bernstein@math.jhu.edu <i>www:</i> http://math.jhu.edu/~bernstein <i>Phone:</i> 1-410-516-6089 <i>Cell:</i> 1-443-967-3090 <i>Fax:</i> 1-410-516-5549
ACADEMIC APPOINTMENTS	<p>Professor Sep. 2021–Present</p> <ul style="list-style-type: none"> Department of Mathematics, Johns Hopkins University On leave Sep. 2022–Present <p>Member Sep. 2022–Present</p> <ul style="list-style-type: none"> School of Mathematics, Institute for Advanced Study <p>Associate Professor Sep. 2017–Aug. 2021</p> <ul style="list-style-type: none"> Department of Mathematics, Johns Hopkins University On leave Jan. 2019–Apr. 2019 <p>Member Jan. 2019–Apr. 2019</p> <ul style="list-style-type: none"> School of Mathematics, Institute for Advanced Study <p>Assistant Professor Aug. 2012–Aug. 2017</p> <ul style="list-style-type: none"> Department of Mathematics, Johns Hopkins University On leave Aug. 2012–Jul. 2013 <p>Research Fellow Aug. 2012–Jul. 2013</p> <ul style="list-style-type: none"> DPMMS, University of Cambridge <p>Postdoctoral Researcher Sep. 2009–Jul. 2012</p> <ul style="list-style-type: none"> Department of Mathematics, Stanford University <ul style="list-style-type: none"> National Science Foundation Postdoctoral Research Fellowship 	
EDUCATION	<p>Massachusetts Institute of Technology</p> <p>Ph.D., Mathematics, Jun. 2009</p> <ul style="list-style-type: none"> Thesis: <i>Conformal and Asymptotic Properties of Embedded Genus-g Minimal Surfaces with One End</i> Adviser: Tobias Colding <p>University of Michigan</p> <p>B.A., Mathematics, May 2005</p>	
REFEREED PUBLICATIONS	<p>J. Bernstein and L. Wang, <i>Topological Uniqueness for Self-expanders of Small Entropy</i>. Camb. J. Math. 10 (2022), no. 4, 785–833.</p> <p>J. Bernstein and L. Wang, <i>Closed hypersurfaces of low entropy in \mathbf{R}^4 are isotopically trivial</i>. Duke Math J. 171 (2022), 1531 – 1558.</p> <p>J. Bernstein and L. Wang, <i>A mountain-pass theorem for asymptotically conical self-expanders</i>. Peking Math J. 5 (2022), 213–278.</p> <p>J. Bernstein, <i>A Sharp Isoperimetric Property of the Renormalized Area of a Minimal Surface in Hyperbolic Space</i>. Proc. Amer. Math. Soc., 150 (2022), no. 10, 4487–4502.</p> <p>J. Bernstein and L. Wang, <i>Relative Expander Entropy in the Presence of a Two-sided Obstacle and Applications</i>. Adv. Math. 399 (2022), 108284.</p>	

- J. Bernstein and S. Wang, *The level set flow of a hypersurface in \mathbf{R}^4 of low entropy does not disconnect*. *Comm. Anal. Geom.* **29** (2021), no. 7, 1523–1543.
- J. Bernstein, *Colding Minicozzi Entropy in Hyperbolic Space*. *Nonlinear Analysis* **210** (2021), 112401.
- J. Bernstein and F. Maggi, *Symmetry and Rigidity of Minimal Surfaces with Plateau-like Singularities*. *Arch. Ration. Mech. Anal.* **239** (2021), 1177–1210.
- J. Bernstein and L. Wang, *The space of asymptotically conical self-expanders of mean curvature flow*. *Math. Annalen* **380** (2021), 175–230.
- J. Bernstein and L. Wang, *Smooth compactness for spaces of asymptotically conical self-expanders of mean curvature flow*. *Int. Math. Res. Not.* **2021** (2021), no. 12, 9016–9044.
- J. Bernstein, *Self-similar solutions of mean curvature flow*. In M. Langford and T. Bourne (Ed.), *Mean Curvature Flow: Proceedings of the John H. Barrett Memorial Lectures held at the University of Tennessee, Knoxville, May 29–June 1, 2018*. De Gruyter. De Gruyter, (2021), 26-46.
- J. Bernstein, *Asymptotic structure of almost eigenfunctions of drift Laplacians on conical ends*. *Amer. Journal of Math.* **142** (2020), no. 6, 1897–1929.
- J. Bernstein and L. Wang, *Hausdorff Stability of the Round Two-Sphere Under Small Perturbations of the Entropy*. *Math. Res. Lett.* **25** (2018), no. 2, 347–365.
- J. Bernstein and L. Wang, *Topology of Closed Hypersurfaces of Small Entropy*. *Geom. Topol.* **22** (2018), no. 2, 1109–1141.
- J. Bernstein and L. Wang, *A Topological Property of Asymptotically Conical Self-Shrinkers of Small Entropy*. *Duke Math J.* **166** (2017), no. 3, 403–435.
- J. Bernstein and T. Mettler, *Characterizing Classical Minimal Surfaces via the Entropy Differential*. *J. Geom. Anal.* **27** (2017), no. 3, 2235–2268.
- J. Bernstein and L. Wang, *A Sharp Lower Bound for the Entropy of Closed Hypersurfaces up to Dimension Six*. *Invent. Math.* **206** (2016), no. 3, 601–627.
- J. Bernstein and G. Tinaglia, *Topological type of Limit Laminations of Embedded Minimal Disks*. *J. Differential Geom.* **102** (2016), no. 1, 1–23.
- J. Bernstein and T. Mettler, *One-Dimensional Projective Structures, Convex Curves and the Ovals of Benguria & Loss*. *Commun. Math. Phys.* **336** (2015), no. 2, 933–952.
- J. Bernstein and L. Wang, *A Remark on a Uniqueness Property of High Multiplicity Tangent Flows in Dimension Three*. *Int. Math. Res. Not.* **2015** (2015), no. 15, 6286–6294.
- J. Bernstein and T. Mettler, *Two-dimensional Gradient Ricci Solitons Revisited*. *Int. Math. Res. Not.* **2015** (2015), no. 1, 78–98.
- J. Bernstein and C. Breiner, *A Variational Characterization of the Catenoid*. *Calc. Var. and PDE.* **49** (2014), no. 1-2, 215–232.

- J. Bernstein, *Some Singular Limit Laminations of Embedded Minimal Planar Domains*, Int. Math. Res. Not. **2012** (2012), no. 18, 4301–4324.
- J. Bernstein and C. Breiner, *Symmetry of Embedded Genus 1 Helicoids*, Duke Math. J. **159** (2011), no. 1, 83–97.
- J. Bernstein and C. Breiner, *Conformal Structure of Minimal Surfaces with Finite Topology*, Comment. Math. Helv. **86** (2011), no. 2, 353–381.
- J. Bernstein and C. Breiner, *Helicoid-Like Minimal Disks and Uniqueness*, J. Reine Angew. Math. **655** (2011), 129–146.
- J. Bernstein and C. Breiner, *Distortions of the Helicoid*, Geom. Dedicata **137** (2008), no. 1, 143–147.

PREPRINTS

- J. Bernstein and A. Bhattacharya, *Colding-Minicozzi Entropies in Cartan-Hadamard Manifolds*. Available at <http://arxiv.org/abs/2211.14257>.
- J. Bernstein and L. Wang, *An Integer Degree for Asymptotically Conical Self-expanders*. Available at <http://arxiv.org/abs/1807.06494>.

AWARDS

National Science Foundation

- Mathematical Sciences, PI, Grant DMS-2203132, 2022–2025 (\$234,391)
- Mathematical Sciences, PI, Grant DMS-1904674, 2019–2022 (\$214,560)
- Mathematical Sciences, PI, Grant DMS-1609340, 2016–2019 (\$190,528)
- Mathematical Sciences, PI, Grant DMS-1307953, 2013–2016 (\$155,835)
- Mathematical Sciences Postdoctoral Research Fellowship, 2009–12

Massachusetts Institute of Technology

- Norman Levinson Fellowship, 2006
- Presidential Fellowship, 2005

INVITED TALKS

- Analysis Seminar, UT Austin, Nov. 9, 2022
- Nirenberg Lectures in Geometric Analysis, CRM, Nov. 3rd and 4th, 2022
- Joint Northwestern-UChicago Geometric Analysis Seminar, University of Chicago, Oct. 29, 2022
- Geometric Analysis Seminar, Rutgers, Oct. 18, 2022
- Analysis and Mathematical Physics Seminar, IAS, Oct. 12, 2022
- Mean Curvature Flow and Related Topics, Queen Mary University London, July 6, 2022
- Rutgers Geometric Analysis Conference, Rutgers University, May 17, 2022
- Geometric Analysis Seminar, Brown University, Apr. 5, 2022
- Calculus of Variations in Probability and Geometry, IPAM, Feb. 7–11, 2022
- 2019 Lehigh University Geometry and Topology Conference, Lehigh University, Jun 21, 2019
- Geometric Analysis Seminar, Rutgers University–New Brunswick, Apr 9, 2019
- Workshop on Geometric Functionals: Analysis and Applications, Institute for Advanced Study, Princeton, Mar. 4–8, 2019
- Calculus of Variations Workshop, Mathematisches Forschungsinstitut Oberwolfach (MFO), July 31, 2018

- Barrett Lectures, University of Tennessee–Knoxville, May 29, 2018
- Howard Math Department Colloquium, Howard University, Washington D.C., Jan 26, 2018
- Workshop on Mean Curvature Flow and Ricci Flow, Fields Institute, Toronto, Nov. 6–Nov 10, 2017
- 31st Brazilian Mathematics Colloquium, Instituto de Matemática Pura e Aplicada (IMPA), Rio de Janeiro, Jul 31–Aug 4, 2017
- 2017 NCTS Mini-Course and Workshop on Ricci Flow and Related Aspects, National Center for Theoretical Sciences (NCTS), Taipei, May 31–Jun 15, 2017
- Geometric Analysis Seminar, University of Chicago, May 23, 2017
- Geometry-Topology Seminar, University of Pennsylvania, Apr. 13, 2017
- Geometric Analysis Seminar, City University of New York, Mar. 23, 2017
- Joint UCI-UCR-UCSD Seminar, University of California–San Diego, Jan 17, 2017
- Young Geometric Analysts Forum 2017, Tsinghua Sanya International Mathematics Forum, Sanya, Jan 9, 2017
- Colloquium, Michigan State University, Dec. 8, 2016
- Lehigh Geometry Seminar, Lehigh University, Dec. 6, 2016
- Clay Research Conference: Mean Curvature Flow, Oxford University, Sep. 29, 2016
- Princeton Rutgers Geometric PDEs Seminar, Rutgers University–New Brunswick, Apr. 5, 2016
- Geometric Analysis Colloquium, Fields Institute, Toronto, Mar. 22, 2016
- Geometry and Topology Seminar, University of Wisconsin–Madison, Oct. 16, 2015
- Informal Geometric Analysis Seminar, University of Maryland–College Park, Oct. 1, 2015
- Bay Area Differential Geometry Seminar, Stanford University, Feb. 21, 2015
- Analysis Seminar, University of North Carolina–Chapel Hill, Oct. 22, 2014
- Geometry and Topology Seminar, University of Massachusetts–Amherst, Apr. 18, 2014
- Geometry and Analysis Seminar, Columbia University, Mar. 13, 2014
- Pure Math Seminar, Arizona State University, Feb. 28, 2014
- Recent Progress in Geometric and Complex Analysis, Joint Mathematics Meetings, Baltimore, Jan. 16, 2014
- Geometric Variational Problems, Banff International Research Station, Banff, Dec. 15, 2013
- RU-CUNY Symposium on Geometric Analysis, City University of New York, Dec. 13, 2013
- Research Program, Park City Math Institute, Jul. 5, 2013
- Variational Problems and Geometric PDEs, University of Granada Jun. 18, 2013
- Advances in Surface Theory, University of Leicester, Jun. 13, 2013
- Geometry Day IV, King’s College London, May 10, 2013
- Geometry Seminar, University of Bath, Apr. 23, 2013
- Geometry Seminar, IMPA, Rio de Janeiro, Jan. 24, 2013
- Analysis Seminar, ETH–Zurich, Dec. 11, 2012
- Geometry and Analysis Seminar, Imperial College London, Nov. 22, 2012
- Geometric Analysis Seminar, University of Warwick, Nov. 1, 2012
- Geometric Variational Problems and Evolution Equations, Free University – Berlin, Jun 29, 2012
- Analysis Seminar, Northwestern University, May. 7, 2012
- Geometric Analysis and PDE Seminar, Cambridge University, Feb. 27, 2012
- Departmental Seminar, Johns Hopkins University, Feb. 8, 2012
- Departmental Seminar, Boston College, Jan. 25, 2012

- Department Colloquium, University of Oregon, Jan. 20, 2012
- SAGE Conference, University of Texas–Austin, Jan. 11, 2012
- Southeastern Geometry Conference, University of South Carolina, May 7, 2011
- 1071th AMS Meeting, University of Nevada–Las Vegas, May 1, 2011
- Graduate Student and Postdoc Workshop on Low-dimensional Topology and Geometry, Princeton University, Mar. 16, 2011
- Geometry and Topology Seminar, Brown University, Feb. 7, 2011
- Geometric Analysis Seminar, Massachusetts Institute of Technology, Feb. 3, 2011
- Geometry and Topology Seminar, University of Toronto, Jan. 31, 2011
- Geometry Workshop, University of Copenhagen, Jun. 21, 2010
- 1060th AMS Meeting, New Jersey Institute of Technology, May 21, 2010
- Graduate Student and Post-doc Workshop on Mean Curvature Flows and Related Topics, Johns Hopkins University, Mar. 15, 2010
- Geometry and Topology Seminar, University of Granada, Feb. 22, 2010
- Geometry Seminar, King’s College London, Feb. 9, 2010
- Bay Area Differential Geometry Seminar, Mathematical Science Research Institute (MSRI), Berkeley, Nov. 21, 2009
- 1054th AMS Meeting, University of California–Riverside, Nov. 7, 2009
- Arbeitsgemeinschaft: Minimal Surfaces, MFO, Oct. 7, 2009
- Southeastern Geometry Conference, University of Georgia, Apr. 5, 2009
- Geometry Seminar, Princeton University, Feb. 13, 2009
- Geometric Analysis Seminar, University of Warwick, Jan. 20, 2009
- Geometry Seminar, University of California–San Diego, Dec. 4, 2008
- Analysis Seminar, Johns Hopkins University, Oct. 20, 2008
- University of Copenhagen, Jul. 16, 2008
- Ahlfors-Bers Colloquium, Rutgers University–Newark, May 9, 2008

OTHER TALKS

- Analysis and PDE Seminar, Johns Hopkins University, Sep. 22, 2014
- Geometric Analysis and PDE Seminar, University of Cambridge, Oct. 8, 2012
- Stanford Geometry Seminar, Stanford University, Dec. 1, 2010
- Geometry Seminar, Massachusetts Institute of Technology, Mar. 3, 2008
- General Relativity Seminar, Massachusetts Institute of Technology, Nov. 27, 2007
- Center for Theoretical Physics Lunch Club, Massachusetts Institute of Technology, Oct. 26, 2007

TEACHING

Johns Hopkins University

Professor

Fall 2013–Present

- Undergraduate Courses
 - Math 108: Calculus I for Engineering and Physical Sciences (Fall 2015, Summer 2019)
 - Math 201: Introduction to Linear Algebra (Spring 2017)
 - Math 211: Honors Multivariable Calculus (Spring 2021)
 - Math 306: Honors Differential Equations (Fall 2014)
 - Math 405: Introduction to Real Analysis (Spring 2014, Spring 2015, Fall 2019, Fall 2021)
 - Math 416: Honors Analysis II (Spring 2018)
 - Math 407: Honors Complex Analysis (Fall 2017)
- Graduate Courses
 - Math 605: Graduate Real Analysis (Fall 2018, Fall 2019)
 - Math 645: Riemannian Geometry (Fall 2013, Fall 2017, Fall 2020)
 - Math 646: Riemannian Geometry II (Spring 2020)

- Math 731: Topics in Geometric Analysis (Spring 2021)
- Math 742: Topics in PDE (Spring 2016)
- Math 749: Topics in Differential Geometry (Fall 2018)
- Math 764: Topics in Riemannian Geometry (Fall 2014)

Stanford University

- Instructor** Spring 2010–Spring 2011
- Math 53: Ordinary Differential Equations (Spring 2010)
 - Math 104: Applied Matrix Theory (Fall 2010)
 - Math 286: Topics in Differential Geometry (Spring 2011)

Massachusetts Institute of Technology

- Teaching Assistant** Fall 2006–Fall 2007
- Instructor** Summer 2007

OTHER TEACHING

- Minicourses
 - Rutgers University–New Brunswick. Topic: Mean Curvature Flow Nov 15, 2017
 - Fields Institute–Toronto. Topic: Mean Curvature Flow Nov 4–5, 2017
 - NCTS–Taipei. Topic: Mean Curvature Flow Jun 4–9, 2017
 - MSRI–Berkeley. Topic: Riemann Surfaces Jul. 28–Aug. 8, 2014
 - IMPA–Rio De Janeiro. Topic: Minimal Surfaces Jan. 2013

ADVISING AND MENTORING

- Postdoctoral Mentoring
 - Alex Mramor (JHU) 2019–2022
- Graduate Advising
 - Elham Matinpour (JHU) 2021–Present
 - Junfu Yao (JHU) 2020–Present
 - Letian Chen (JHU) 2019–Present
 - Shengwen Wang (JHU) 2015–2018
 - Thesis: “Some results on the entropy of closed hypersurfaces and topology through singularities in mean curvature flow”
 - First Position: Postdoc at SUNY-Binghamton
- GBO & PhD Thesis Defense Committees (JHU)
 - Lucas Corcodilos, External Member, Physics & Astronomy, Fall 2021
 - Cheng Zhang, Member, Mathematics Summer 2019
 - Oz Amram, External Member, Physics & Astronomy Fall 2018
 - Chuenyun Luo, Member, Mathematics Summer 2017
 - Chenyang Su, Member, Mathematics Summer 2016
 - Po-Yao Chang, Member, Mathematics Summer 2016
 - Min Xue, Member, Mathematics Summer 2015
 - John Ross, Reader, Mathematics Spring 2015
 - Matthew McGonagle. Member, Mathematics Spring 2014
 - Duncan Sinclair, Member, Mathematics Fall 2013
- Undergraduate Mentoring

- Advika Rajapakse (JHU) Summer 2019
 - Mentored a directed reading on geometric measure theory
- Arran Fernandez (Cambridge) Fall 2012
 - Supervised for Part III Differential Geometry

PROFESSIONAL
SERVICE

- Editorial Board
 - Calculus of Variations and PDE 2022–Present
 - Nonlinear Analysis 2020–Present
- External Reviewer
 - Grants
 - Natural Sciences and Engineering Research Council of Canada (NSERC) Grant Reviewer 2019
 - NSF Panelist 2014, 2017, 2020, 2022
 - Hiring and Promotion
 - Johns Hopkins University 2022
 - National Taiwan University 2020
 - National Tsing Hua University, Taiwan 2020
- Journal Referee
 - Annals of Mathematics
 - American Journal of Mathematics
 - Journal of the American Mathematical Society
 - Duke Math Journal
 - Acta Mathematica
 - Annales de l'institut Fourier
 - Geometry & Topology
 - Advances in Mathematics
 - Commentarii Mathematici Helvetici
 - Communications in Mathematical Physics
 - Communications in Analysis and Geometry
 - Journal of Differential Geometry
 - Mathematische Annalen
 - Journal of Geometric Analysis
 - Transactions of the American Mathematical Society
 - Proceedings of the American Mathematical Society
 - International Mathematics Research Notices
 - Geometriae Dedicata
 - Journal of the London Mathematical Society
 - Annals of Global Analysis and Geometry

UNIVERSITY AND
DEPARTMENTAL
SERVICE

- Director of Graduate Studies at JHU 2019–Present
- Departmental Committees (JHU) 2014–2022
 - JAMI & Visitors (2016, 2018)
 - Library (2014–2016)
 - Graduate (2018–2022)

- Diversity Champion (2017–2018)
- Promotion and Review Committees (2018,2019)
- Seminar Organizer
 - Metro Area Differential Geometry Seminar (JHU) 2014–Present
 - Analysis and PDE Seminar (JHU) 2014–2018
 - Geometry Seminar (Stanford) 2009–2012