

Joshua M. Sabloff

Haverford College
370 Lancaster Ave.
Haverford, PA 19041

+1 610 795 3366
jsabloff@haverford.edu
www.haverford.edu/math/jsabloff

Education

Stanford University <i>Ph.D.</i>	2002
Cambridge University <i>M.Math. (Part III) with distinction</i>	1997
Harvard University <i>A.B. summa cum laude</i>	1996

Professional Positions

Haverford College <i>J. McLain King 1928 Professor of Mathematics</i>	2018–
<i>Professor of Mathematics</i>	2015–
<i>Department Chair for Mathematics and Statistics</i>	2011–13, 2018–21
<i>Associate Professor of Mathematics</i>	2010–15
<i>Assistant Professor of Mathematics</i>	2003–10
Institute for Advanced Study <i>Member</i>	Fall 2016, 2021–22
Mathematical Sciences Research Institute <i>Research Member</i>	Spring 2010
University of Pennsylvania <i>Lecturer in Mathematics</i>	2002–03

Grants and Awards

National Grants

National Science Foundation Research Grant <i>Legendrian Submanifolds in Contact and Smooth Topology</i> NSF-DMS 1406093. PI.	2014–18
National Science Foundation Research Grant <i>Knotting Phenomena in Symplectic and Contact Topology</i> NSF-DMS 0909273. PI in a collaborative proposal with L. Traynor.	2009–13
National Science Foundation Training Grant <i>Noyce Teaching Scholarship Program at Bryn Mawr and Haverford</i> NSF-DUE 0934831. Co-PI with V. Donnay (PI) and R. Fairman, A. Lesnick, and P. Brodfuehrer (co-PIs).	2009–15
American Institute of Mathematics SQuaREs Grant <i>Augmentations, Rulings, and Generating Families</i>	2009–13

With L. Traynor, P. Melvin, D. Fuchs, D. Rutherford, M. B. Henry.

ARCS Foundation Fellowship	2000–01
National Science Foundation Graduate Research Fellowship	1997–2000
Winston Churchill Foundation Scholarship	1996–97

Awards

Phi Beta Kappa Chapter Prize for teaching and mentoring <i>Haverford College</i>	2019
Lindback Distinguished Teaching Award <i>Haverford College</i> This is Haverford’s highest teaching award	2010
Walter J. Gores Award <i>Stanford University</i> This is Stanford’s highest teaching award	2001
Centennial Teaching Assistant Award <i>Stanford University</i>	2001
Phi Beta Kappa <i>Harvard University</i>	1995

Local Grants

Mellon Tri-Co Seed / Root Grants <i>Philadelphia Area Contact / Topology Seminar</i> with P. Melvin, L. Traynor, and T. Hunter	2014–
<i>Philadelphia Area Math Teachers’ Circle</i> with A. Johnson and A. Myers	2015–19
<i>Math and Philosophy Working Group</i> with A. Baker, M. Goodwin, T. Hunter, and D. Macbeth	2007–09
<i>Faculty-Student Seminar in Topology</i> with P. Melvin, L. Traynor, and J. Talvacchia	2004–06
Teaching with Technology Grants <i>Refining Technological Resources in Flipped Introductory Math Classes</i> with R. Everett, D. Lippel, and R. Manning	2021
<i>iPads in a Moore Method Topology Class</i>	2013
Faculty Research / Support Fund For summer research students	2004–06, 2008–09, 2013–14, 2016, 2018

Publications

Peer-Reviewed Journal Articles¹

22. Joshua M. Sabloff. On a refinement of the non-orientable 4-genus of torus knots. Preprint available as arXiv:2206.11200, 2022
21. Linyi Chen*, Grant Crider-Phillips*, Braeden Reinoso*, Joshua M. Sabloff, and Leyu Yau*. Non-orientable Lagrangian fillings of Legendrian knots. Preprint available as arXiv:2203.16605, 2022
20. Joshua M. Sabloff, David Shea Vela-Vick, and C.-M. Michael Wong. Upper bounds for the Lagrangian cobordism relation on Legendrian links. Preprint available as arXiv:2105.02390, 2021
19. Roberta Guadagni, Joshua M. Sabloff, and Matthew Yacavone*. Legendrian satellites and decomposable cobordisms. Preprint available as arXiv:2103.03340, 2021
18. Joshua M. Sabloff and Lisa Traynor. The relative Gromov width of Lagrangian cobordisms between Legendrians. *J. Symplectic Geom.*, 18(1):217–250, 2020
17. Erin R. Lipman* and Joshua M. Sabloff. Lagrangian fillings of Legendrian 4-plat knots. *Geom. Ded.*, 198(1):35–55, 2019
16. Joshua M. Sabloff and Lisa Traynor. The minimal length of a Lagrangian cobordism between Legendrians. *Selecta Math. (N.S.)*, 23(2):1419–1448, 2017
15. Joshua M. Sabloff and Michael Sullivan. Families of Legendrian submanifolds via generating families. *Quantum Topol.*, 7(4):639–668, 2016
14. Frédéric Bourgeois, Joshua M. Sabloff, and Lisa Traynor. Lagrangian cobordisms via generating families: Construction and geography. *Algebr. Geom. Topol.*, 15(4):2439–2477, 2015
13. Kyle Hayden* and Joshua M. Sabloff. Positive knots and Lagrangian fillability. *Proc. Amer. Math. Soc.*, 143(4):1813–1821, 2015
12. Chang Cao*, Nathan Gallup*, Kyle Hayden*, and Joshua M. Sabloff. Topologically distinct Lagrangian and symplectic fillings. *Math. Res. Lett.*, 21(1):85–99, 2014
11. Joshua M. Sabloff and Lisa Traynor. Obstructions to Lagrangian cobordisms between Legendrian submanifolds. *Algebr. Geom. Topol.*, 13:2733–2797, 2013
10. Joan Licata and Joshua M. Sabloff. Legendrian contact homology in Seifert fibered spaces. *Quantum Topol.*, 4(3):229–264, 2013
9. Joan Licata and Joshua M. Sabloff. Rational Seifert surfaces in Seifert fibered spaces. *Pacific J. Math.*, 258(1):199–221, 2012
8. Gokhan Civan*, John B. Etnyre, Paul Koprowski*, Joshua M. Sabloff, and Alden Walker*. Product structures for Legendrian contact homology. *Math. Proc. Camb. Phil. Soc.*, 150(2):291–311, 2011
7. Joshua M. Sabloff and Lisa Traynor. Obstructions to the existence and squeezing of Lagrangian cobordisms. *J. Topol. Anal.*, 2(2):203–232, 2010
6. Tobias Ekholm, John B. Etnyre, and Joshua M. Sabloff. A duality exact sequence for Legendrian contact homology. *Duke Math. J.*, 150(1):1–75, 2009

¹Undergraduate co-authors are indicated by a *.

5. Joshua M. Sabloff. Duality for Legendrian contact homology. *Geom. Topol.*, 10:2351–2381 (electronic), 2006
4. Lenhard L. Ng and Joshua M. Sabloff. The correspondence between augmentations and rulings for Legendrian knots. *Pacific J. Math.*, 224(1):141–150, 2006
3. Joshua M. Sabloff. Augmentations and rulings of Legendrian knots. *Int. Math. Res. Not.*, (19):1157–1180, 2005
2. Joshua M. Sabloff. Invariants of Legendrian knots in circle bundles. *Comm. Contemp. Math.*, 5(4):569–627, 2003
1. John B. Etnyre, Lenhard L. Ng, and Joshua M. Sabloff. Invariants of Legendrian knots and coherent orientations. *J. Symplectic Geom.*, 1(2):321–367, 2002

Invited Articles

3. Joshua M. Sabloff. Ruling and augmentation invariants of Legendrian knots. In Allison Henrich Louis H. Kauffman Lewis D. Ludwig Sam Nelson Colin Adams, Erica Flapan, editor, *Encyclopedia of Knot Theory*, pages 403–410. CRC Press, 2021
2. Joshua M. Sabloff. What is . . . a Legendrian knot? *Notices Amer. Math. Soc.*, 56(10):1282–1284, 2009
1. Philip Eiseman*, Jon Lima*, Joshua M. Sabloff, and Lisa Traynor. A partial ordering on slices of planar Lagrangians. *J. Fixed Point Theory Appl.*, 3(2):431–447, 2008

Educational Materials

3. Joshua M. Sabloff and Steven Wang. Cross sections of graphs of functions of two variables. Wolfram Demonstrations Project, 2009. Available at www.demonstrations.wolfram.com
2. Joshua M. Sabloff and Steven Wang. Second-order partial derivatives. Wolfram Demonstrations Project, 2009. Available at www.demonstrations.wolfram.com
1. Jennifer Morse and Joshua M. Sabloff. The community math teaching project. In C. Hadlock, editor, *Mathematics in Service to the Community*, number 66 in MAA Notes, pages 225–236. The Mathematical Association of America, 2005

Professional Activities

Invited Conference Talks

AMS Central Sectional Meeting, Legendrian knots and surfaces Session	<i>Apr. 2021</i>
Mini-workshop on Legendrian submanifolds (UQAM)	<i>Nov. 2018</i>
Geometric Methods in Symplectic and Contact Topology	<i>Aug. 2018</i>
AMS Central Section Meeting, Knot Theory and Floer-Type Invariants Session	<i>Mar. 2015</i>
Workshop on Parameterized Morse Theory in Low-Dimensional and Symplectic Topology (Banff International Research Station)	<i>Mar. 2014</i>
Workshop on Legendrian submanifolds, holomorphic curves and generating families (Académie Royale de Belgique)	<i>Aug. 2013</i>

Redbud Topology Conference (University of Arkansas)	<i>Mar. 2013</i>
Georgia Topology Conference	<i>May 2012</i>
Tokyo Workshop on Low-Dimensional Topology (Tokyo Institute of Technology)	<i>Mar. 2012</i>
AMS Southeast Sectional Meeting, Low Dimensional Topology and Geometry Session	<i>Sept. 2011</i>
University of Nantes Special Trimester on Contact and Symplectic Topology, Thematic Week on Generating Families (five-part mini-series given jointly with Lisa Traynor)	<i>May 2011</i>
AMS Northeast Sectional Meeting, Low Dimensional Topology Session	<i>Oct. 2008</i>
American Institute of Mathematics (AIM) Workshop on Legendrian and Transverse Knots (Opening lectures)	<i>Sept. 2008</i>
New Perspectives and Challenges in Symplectic Field Theory (YashaFest at Stanford)	<i>Jun. 2007</i>
AMS Northeast Sectional Meeting, Symplectic and Contact Topology Special Session	<i>Apr. 2006</i>
AMS Western Sectional Meeting, Contact and Symplectic Geometry Session	<i>Apr. 2004</i>
Frontiers of PDEs and Dynamics Conference (Rutgers)	<i>May 2003</i>
AMS Southeast Sectional Meeting, Symplectic and Contact Topology Session	<i>Mar. 2002</i>

Colloquia and Lecture Series

Wesleyan University Colloquium	<i>Apr. 2009</i>
Washington University in St. Louis Colloquium	<i>Feb. 2009</i>
Penn State Colloquium	<i>Oct. 2008</i>
Dartmouth Colloquium	<i>Apr. 2008</i>
Washington University in St. Louis Colloquium	<i>Feb. 2008</i>
NYU / Courant Institute (four-lecture mini-course)	<i>Spring 2003</i>

Seminar Talks

Princeton / Institute for Advanced Study Symplectic Geometry Seminar	<i>Apr. 2022</i>
Institute for Advanced Study Seminar in Analysis and Geometry	<i>Feb. 2022</i>
Louisiana State University Geometry and Topology Seminar	<i>Oct. 2018</i>
Georgia Tech Geometry-Topology Seminar	<i>Feb. 2018</i>
IAS / Princeton Symplectic Geometry Seminar	<i>Oct. 2016</i>
University of Pennsylvania Geometry and Topology Seminar	<i>Jan. 2016</i>
University of Pennsylvania Geometry and Topology Seminar	<i>Apr. 2015</i>
University of Pennsylvania Deformation Theory Seminar	<i>Jan. 2015</i>
Tetrahedral Geometry and Topology Seminar (Lancaster Valley colleges)	<i>Nov. 2014</i>
University of Virginia Geometry-Topology Seminar	<i>Feb. 2014</i>

Duke / UNC Topology Seminar	<i>Sept. 2013</i>
MIT Geometry-Topology Seminar	<i>Nov. 2012</i>
Duke University Geometry-Topology Seminar	<i>Apr. 2011</i>
Columbia Symplectic Geometry and Gauge Theory Seminar	<i>Apr. 2010</i>
Research Seminar (MSRI)	<i>Mar. 2010</i>
Seminar on Quantitative Floer Theory (MSRI)	<i>Feb. 2010</i>
Workshop on Mirror Symmetry, Symplectic Geometry, and Related Topics (MIT)	<i>Jun. 2009</i>
Contributed talk as invited participant	
University of Pennsylvania Deformation Theory Seminar	<i>Feb. 2009</i>
Duke University Geometry-Topology Seminar	<i>Nov. 2008</i>
Temple Geometry Seminar	<i>Oct. 2008</i>
AIM Workshop on Legendrian and Transverse Knots (Given jointly with Lisa Traynor)	<i>Sept. 2008</i>
Georgia Institute of Technology Geometry Seminar	<i>Apr. 2008</i>
Dartmouth Geometry-Topology Seminar	<i>Apr. 2008</i>
University of Pennsylvania Geometry-Topology Seminar	<i>Feb. 2008</i>
Brussels-Cologne Joint Seminar (at Université Libre de Bruxelles)	<i>Apr. 2007</i>
University of Pennsylvania Geometry-Topology Seminar	<i>Nov. 2006</i>
Georgia Institute of Technology Geometry Seminar	<i>Nov. 2005</i>
UMass-Amherst Geometry Seminar	<i>Oct. 2005</i>
The Lafayette/Lehigh Geometry and Topology Seminar	<i>Feb. 2005</i>
University of Pennsylvania Geometry-Topology Seminar	<i>Feb. 2005</i>
University of Southern California Geometry Seminar	<i>Oct. 2004</i>
George Washington University Topology Seminar	<i>Mar. 2004</i>
University of Pennsylvania Geometry-Topology Seminar	<i>Jan. 2002</i>

Undergraduate-Oriented Colloquia and Seminars

Louisiana State University Undergraduate Colloquium	<i>Oct. 2018</i>
Temple University Math Club	<i>Jan. 2015</i>
MathILy (a math camp for high school students)	<i>Jul. 2014</i>
Wesleyan University Math Club	<i>Apr. 2009</i>
Penn State MASS Colloquium	<i>Oct. 2008</i>
University of Pennsylvania Undergraduate Colloquium	<i>Oct. 2006</i>
Gettysburg College Colloquium	<i>Nov. 2005</i>
Bi-College Mathematics Colloquium	<i>Feb. 2005</i>
Swarthmore College Colloquium	<i>Nov. 2004</i>

Conference and Seminar Organization

Co-Organizer, Philadelphia Area Topology (Contact / Hyperbolic) Seminar	<i>Fall 2009–</i>
Co-Organizer, Philadelphia Area Contact / Topology Seminar	<i>Fall 2003–</i>
Co-Organizer, AMS Special Session on Contact and Symplectic Geometry (AMS Sectional Meeting)	<i>Oct. 2013</i>
Co-Organizer, Mini-Conference on Symplectic Field Theory	<i>Spring 2006</i>
Co-Organizer, MAA-Project NExT Session on “Being a Good Consumer of Mathematics Education Research” (AMS/MAA Joint Meetings)	<i>Jan. 2004</i>
Co-Organizer, AMS Special Session on Contact and Symplectic Geometry (AMS Sectional Meeting)	<i>Apr. 2003</i>

Professional Service

Member at Large, AMS Committee on Science Policy	<i>2012–15</i>
Panelist for NSF grant review	<i>2011, '18</i>
Winston Churchill Foundation Scholarship Screening Committee	<i>2007, '08, '13</i>
Project NExT Fellow	<i>2003–04</i>

Referee for Ann. Math, Invent. Math., Math. Ann., Adv. Math., Geom. and Topol., J. Topology, J. Symplectic Geometry, Internat. Math. Res. Not., Quantum Topol., Algebr. and Geom. Topol., Pacific J. of Math., International J. Math., Comm. Contemp. Math., Bull. LMS, Topology and its Applications, Mathematical Reviews (MathSciNet), and others.

Educational Activities

Classes Taught

At Haverford: Intensive Calculus I (113b), Calculus II (114 / 118), Multivariable Calculus (121), The Community Math Teaching Project (123), Mathematics Beyond Calculus (199), Differential Equations (204), Linear Algebra (215), Advanced Calculus (216), Bridge to Advanced Mathematics (299), Analysis I (317), Analysis II (318), Topology I (335), Topology II (336), Differential Geometry (337/391)

At Penn: The Community Math Teaching Project, Calculus I, and Advanced Linear Algebra

Ph.D. Student

M. Brad Henry, 2009. Jointly advised with Rachel Roberts at Washington University in St. Louis. Placement as NSF VIGRE Postdoc at the University of Texas-Austin.

Undergraduate Research Students

C. Kirk Mangels '05, Paul Koprowski '07, Alden Walker '07, Sumana Shrestha BMC '07, Sam Clearman '07, Phil Eiseman '10, Jon Lima '10, Jacob Ralston '10, Stephen Sacchetti '11, Alex Cahill '11, Garrett Vannacore '11, Chang Cao '13, Nate Gallup '13, Kyle Hayden '13, Kae Anderson '13, Aaron Lowe '15, Zachary Kaden '15, Richard Thurim '15, Michael Chinitz '15, Henri Drake

'15, Josh Serota '16, Erin Lipman '17, Braeden Reinoso '18, Natalie Yao '18, Linyi Chen '18, Grant Crider-Philips '18, Matthew Yacavone '19, Yanhan Liu '19, Sipeng Zhou '19, Ziyu Gan '20, Farid Azar Leon '20, Kaito Nakatani '21, Siting Lang '21, Louisa Stoll '21, Jacob van Wiggeren '21, Adam Friedman-Brown '22, Jiajie Ma '22

Talks and Panels

University of Pennsylvania Center for Teaching and Learning Workshop	Feb. 2009
MAA EPaDel Section Meeting Service Learning and Mathematics (panel)	Nov. 2005
MSPGP Math/Science Pedagogy Workshop	May 2005
MAA Session on Service Learning in Mathematics at AMS/MAA Joint Meetings (panel)	Jan. 2004

Educational Service

<i>Leadership Team and Founding Member</i> for the Philadelphia Area Math Teachers' Circle	2011–2019
<i>Departmental supervisor</i> for teaching certificate candidates Stephanie Rexer '04, Ryan Chudd '09, Steven Sacchetti '11, Evren Cakir '12, Emily Scott '14	
<i>Instructor</i> for Haverford Summer Science Institute (HSSI)	2008, '09, '11
<i>Faculty Advisor</i> for Humanities Center Student Seminar entitled “What are Poets and Polynomials For?” organized by David Henry '05 and David Alff '05	2004–05

Consulting and Professional Development

Cantor-TLI Seminar on Inclusive Teaching <i>Seminar Participant</i>	2019
Bi-College Teaching and Learning Initiative Faculty Seminar <i>Seminar Participant</i>	Spring 2009
Bi-College Math / Science Pedagogy Seminar <i>Seminar Participant</i>	2004–06
LearnTempo.com <i>Script Writer for multimedia teacher education software</i>	Summer 2001
Program of Teacher Preparation in Mathematics (Stanford University School of Education and Department of Mathematics) <i>Standards Writer</i>	Winter 2001
Center for Teaching and Learning (Stanford University) <i>Teaching Consultant</i>	2000–01
<i>Video Consultant</i>	1998–99

College-Wide Service

Strategic Curriculum and Personnel Committee	2022–24
--	---------

Alternate Natural Science Representative to Academic Council	2017–20, 2021–22
Faculty Affairs and Planning Committee	2018–20
<i>Chair</i>	2018–19
Ad Hoc Search Committee for two positions in Mathematics	2017–18
Natural Science Representative to the Educational Policy Committee	Spring 2017
At Large Representative to Academic Council	2013–15
Task Force on Academic Enrichment	2012–13
Ad Hoc Search Committee for position in Mathematics	2011–12
Alternate Natural Science Representative to Academic Council	2010–11
Presenter for Reappointment and Promotion Case	2010–11
Committee on College Honors (<i>plus selection of Beckman Scholars in 2005, '06, '08, '11</i>)	2004–05 2008–09
Faculty Admissions Committee	2007–08
Hurford Humanities Center Steering Committee	2005–06

Revised July 5, 2022