

Brian Hepler

CONTACT INFORMATION	Department of Mathematics University of Wisconsin-Madison 480 Lincoln Drive Madison, Wisconsin 53706 USA	bhepler@wisc.edu brain-helper.com
RESEARCH INTERESTS	The local topology of complex analytic spaces, perverse sheaves, and microlocal sheaf theory. More recently: enhanced ind-sheaves, and subanalytic geometry.	
EDUCATION	Northeastern University Ph.D. in Mathematics, May 2019 <ul style="list-style-type: none">• Dissertation Topic: Hypersurface Normalizations and Numerical Invariants• Thesis Advisor: David B. Massey M.S. in Mathematics, May 2014 <ul style="list-style-type: none">• GPA: 3.96/4.00 Boston University B.A. in Mathematics, May 2012 <ul style="list-style-type: none">• Cum Laude with Distinction in Mathematics• Undergraduate Advisor: Emma Previato• GPA: 3.58/4.00	
EMPLOYMENT	University of Wisconsin-Madison Van Vleck Visiting Assistant Professor, August 2019–Current.	
PUBLICATIONS	<ol style="list-style-type: none">6. Hepler, B., “Enhanced Perverse Ind-Sheaves and Vanishing Cycles at a Fixed Angle”, in preparation (2021).5. Hepler, B., “The Weight Filtration on the Constant Sheaf on a Parameterized Space”, in <i>Arxiv e-prints (2019)</i> https://arxiv.org/abs/1811.04328 (submitted for publication).4. Hepler, B. “Deformation Formulas for Parameterizable Hypersurfaces,” in <i>Arxiv e-prints (2019)</i> https://arxiv.org/abs/1711.11134 (Accepted, <i>Inst. Ann. Fourier</i>).3. Hepler, B., “Rational Homology Manifolds and Hypersurface Normalizations,” in <i>Proc. Amer. Math. Soc.</i> 147 (2019), 1605-16132. Hepler, B. and Massey, D.B., “Some Special Cases of Bobadilla’s Conjecture”, in <i>Top. and Appl.</i> 217 (2017), pp. 56-69.1. Hepler, B. and Massey, D.B., “Perverse Results on Milnor Fibers inside Parameterized Hypersurfaces”, in <i>Publ. RIMS Kyoto Univ.</i> 52 (2016), pp. 413-433.	
INVITED TALKS AND PRESENTATIONS	<ol style="list-style-type: none">19. <i>The Riemann-Hilbert Correspondence for Good Meromorphic Connections</i>. Expository Talk. Summer School on the Irregular Riemann-Hilbert Correspondence, ERC Nedag & ANR CatAG at Centre Paul Langevin. Aussois, France. September 19-24, 2021.18. <i>Enhanced Ind-Sheaves and Vanishing Cycles at Fixed Angle</i>. Metric Geometry of Singularities, University of Chicago Center in Paris. Paris, France. June 2-4, 2021.	

17. *Irregular Perverse Sheaves in Dimension One*. Expository talk. UW-Madison topology and singularities seminar, UW-Madison, WI, USA. October 19th, 2020.
16. *Sabbah-Mochizuki-Kedlaya's Hukuhara-Levelt-Turrittin Theorem and Deligne's Stokes structures*. Expository talk. UW-Madison topology and singularities seminar, UW-Madison, WI, USA. October 12, 2020.
15. *The Weight Filtration on a Parameterized Surface*. Geometry and Topology Seminar, University of Western Ontario, Ontario, Canada. February 10, 2020.
14. *Deformation Formulas for Parameterizable Hypersurfaces*. HYPERjarcs, memorial conference for Stefan Papadima. University of Tokyo, Tokyo, Japan. December 1-6, 2019.
13. *The Weight Filtration on a Parameterized Surface*. AMS Special Session on Geometry and Topology of Singularities, UW-Madison, Madison, Wisconsin, USA, September 14-15, 2019.
12. *The Weight Filtration on a Parameterized Surface*. Non-Isolated Singularities and Derived Geometry, 60th Birthday Celebration of David Massey. UNAM, Cuernavaca, Mexico, July 29-August 3, 2019.
11. *Hypersurface Normalizations and Numerical Invariants*. D-Modules, Quantum Geometry, and Related Topics. RIMS, Kyoto, Japan, December 3-7 2018. Poster.
10. *The Comparison Complex on a Local Complete Intersection*. 15th International Workshop on Real and Complex Singularities, ICMC São Carlos, Brazil, July 22-28 2018. Poster.
9. *The Comparison Complex on a Local Complete Intersection*. Mixed Hodge Modules and Birational Geometry, SFB/TRR 45 Summer School. Mainz, Germany, July 9-13 2018. Poster.
8. *Perverse Sheaves, Finite Maps, and Numerical Invariants*. AMS Special Session on Singularities of Spaces and Maps, Northeastern University, USA, April 21-22, 2018.
7. *Deformation Formulas for Parameterizable Hypersurfaces*. Singularities, Toric Geometry and Differential Equations, Technische Universität Chemnitz, Germany, March 19-23, 2018. Poster.
6. *Perverse Results on Milnor Fibers inside Parameterized Hypersurfaces* Geometry and Topology Seminar, University of Wisconsin at Madison. December 8th, 2017.
5. *Perverse Sheaves and Singularities*. Boston Graduate Math Colloquium (BGMC), Boston University. October 21st, 2017.
4. *Deformation Formulas for Parameterizable Hypersurfaces: Generalizing Milnor's Double-Point Formula*. Algebraic Geometry Northeast Series (AGNES), Northeastern University. October 14, 2017. Poster
3. *The Lê numbers of one-parameter families of parameterized hypersurfaces*, Geometry, Algebra, Singularities, Combinatorics Seminar Seminar (GASC), Northeastern University. October 23rd, 2017.
2. *The Lê numbers of one-parameter families of parameterized hypersurfaces*. Third Pacific Rim Mathematical Association (PRIMA), Oaxaca, MX. (Special Session: Singularities of Spaces and Mappings). August, 2017.
1. *Perverse Results on Parameterized Hypersurfaces*. Northeastern University Graduate Student Seminar. September 30th, 2016.

TEACHING EXPERIENCE	Fall	2021	Lecturer. MATH 221: Calculus 1
	Spring	2021	Lecturer. MATH 551: Topology 1
	Spring	2021	Lecturer. MATH 521: Analysis 1
	Fall	2020	Lecturer. MATH 699: Directed Study (Cat. Theory and Sheaves)
	Fall	2020	Lecturer. MATH 221: Calculus 1
	Spring	2020	Lecturer. MATH 340: Linear Algebra
	Spring	2020	Lecturer. MATH 551: Topology 1
	Fall	2019	Lecturer. MATH 521: Analysis 1
	Spring	2019	Teaching Assistant. MATH 3175: Group Theory
	Fall	2018	Teaching Assistant. MATH 2321: Calculus 3 for Sci/ Eng.
	Summer	2018	Mentor. REU-RTG: Regular Abstract Polytopes.
	Spring	2018	Lecturer. MATH 1342: Calculus 2 for Sci/ Eng.
	Fall	2017	Teaching Assistant. MATH 1342: Calculus 2 for Sci/ Eng.
	Summer	2017	Lecturer. MATH 1231: Calculus 1 for Business and Economics.
	Spring	2017	Teaching Assistant. MATH 2321: Calculus 3 for Sci/ Eng.
	Fall	2016	Lecturer. MATH 1213: Interactive Mathematics.
	Spring	2016	Lecturer. MATH 1251: Calculus and Differential Equations for Biology 1.
	Fall	2015	Lecturer. MATH 1213: Interactive Mathematics.
	Spring	2015	Teaching Assistant. MATH 1215: Mathematical Thinking.
	Fall	2014	Lecturer. MATH 1231: Calculus 1 for Business and Economics.
	Spring	2014	Teaching Assistant. MATH 2321: Calculus 3 for Sci/ Eng.
	Fall	2013	Teaching Assistant. MATH 2321: Calculus 3 for Sci/ Eng.
	Spring	2013	Teaching Assistant. MATH 2321: Calculus 3 for Sci/ Eng.
	Fall	2012	Teaching Assistant. MATH 2321: Calculus 3 for Sci/ Eng.
	HONORS AND AWARDS	2021-2023	AMS-Simons Travel Grant, -American Mathematical Society & Simons Foundation
		2017-2018	Best Teaching Assistant Award, -Northeastern University Mathematics Department
2013-2018		Northeastern University Graduate Student Teaching Assistantship	
2012-2013		Robert Brian Massey Fellowship for Mathematics - Worldwide Center of Mathematics http://www.centerofmath.org/	
2012		Robert E. Bruce Prize for Excellence in Mathematics, -Boston University	
RESEARCH EXPERIENCE	2014-2018	Hypersurface Normalizations and Numerical Invariants Doctoral Research Advisor: David Massey, Mathematics Department Northeastern University	
	2011-2012	Tropical Geometry and the Jacobian Variety Independent Work for Distinction in Mathematics Advisor: Emma Previato, Mathematics Department, Boston University.	
	2010-2011	The Riemann Hypothesis for Linear Codes Undergraduate Research Opportunities Program (UROP) Advisor: Emma Previato, Mathematics Department Boston University	

WORK EXPERIENCE	2012–2019	Teaching Assistant Northeastern University, Mathematics Department
	2013, 2015	Bridge to Calculus Mentoring Program -Boston Public Schools https://cos.northeastern.edu/mathematics/about/outreach/bridge-to-calculus/
	2012–2013	Teaching Assistant, Mathematics Co-op -Worldwide Center of Mathematics http://www.centerofmath.org/
	2011–2012	“Math Help” Tutor for all math classes at Boston University - Boston University
RELEVANT SKILLS	Programming:	\LaTeX (advanced proficiency), Python, MatLab, Sage, Singular, Macaulay 2 (proficient)
	Languages:	English (native), French (working proficiency)
SYNERGISTIC ACTIVITIES	2017–2018	Organizer, Boston Graduate Math Colloquium (BGMC) -I am a co-organizer of the BGMC with Boston University, Boston College, and Harvard University. https://sites.google.com/view/bgmc
	2021	Organizer & Moderator, Reddit’s /r/math Topology reading group. -Hosted on Discord with over 100 members from the /r/math community, I lead discussions and assign problems from Munkres’ <i>Topology</i> . We meet every Sunday morning during Summer 2021.