

Jeff Hicks

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Appointments and Education

University of Edinburgh School of Mathematics, EPSRC Postdoctoral Fellow	<i>Fall 2022 - Present</i>
University of Edinburgh School of Mathematics, Research Associate Supervisor: Nick Sheridan	<i>Fall 2021 - Spring 2022</i>
University of Cambridge Department of Mathematics, Research Associate Supervisor: Mark Gross	<i>Fall 2019 - Spring 2021</i>
ETH Zürich Department of Mathematics, Visiting Scholar Sponsor: Paul Biran	<i>Fall 2018</i>
University of California, Berkeley Department of Mathematics, PhD Advisor: Denis Auroux Thesis: Tropical Lagrangians and Homological Mirror Symmetry	<i>Fall 2013-Spring 2019</i>
University of California, Los Angeles Department of Mathematics, BSc, MA	<i>Fall 2009-Spring 2013</i>

Research Activities

Publications and Preprints

<i>Some cute app. of Lag. cob. towards examples in quant. symp. geo. (w. Cheuk Yu Mak)</i> Submitted; Preprint at arXiv:2208.14498	2022
<i>Realizability in tropical geometry and unobstructedness of Lagrangian submanifolds</i> Submitted; Preprint at arXiv:2204.06432	2022
<i>Lagrangian cobordisms and Lagrangian surgery</i> Submitted; Preprint at arXiv:2102.10197	2021
<i>Functoriality and homological mirror symmetry for toric varieties (w. Andrew Hanlon)</i> <i>Advances in Mathematics</i> , 401	2022
<i>Observations on disks with tropical Lagrangian boundary</i> <i>2019-20 MATRIX Annals</i>	2021
<i>Tropical Lagrangians in del-Pezzo surfaces</i> <i>Selecta Mathematica</i> , 27	2021
<i>Tropical Lagrangian hypersurfaces are unobstructed</i> <i>Journal of Topology</i> , 13	2020

Conference talks

University of Warwick, <i>3CinG:Symp. Vs Alg. Geometry</i>	May 2022
Realization in Tropical Geometry and Unobstructedness of Lagrangian Submanifolds	
U. Uppsala & U. Nantes, <i>Workshop on Lagrangian Cobordisms and Floer Theory</i>	October 2021
Speculation on Floer Theory of Lagrangian Cobordisms via Decomposition	
Uppsala Universitet (Virtual), <i>Braids, Mutations and Twists in Algebra and Geometry</i>	May 2021
Lagrangian Cobordisms and Mutations	
Simons Collab. on HMS (Virtual), <i>Floer-Th. and Alg.-Geo. Asp. of SYZ Mirror Sym.</i>	September 2020
Revisiting HMS for Toric Varieties	
MATRIX, <i>Tropical Geometry and Mirror Symmetry</i>	December 2019
Sample Computations for Tropical Lagrangians	
Chicheley Hall, <i>Fano Varieties and Mirror Symmetry II</i>	September 2019
Lagrangian Mutations for Tropical Lagrangians	
Fields Institute, <i>New Structures in Alg. Geo. and Their Symp. Interpretations</i>	August 2019
Tropical Lagrangian Tori in $\mathbb{C}P^2 \setminus E$	
Université du Québec à Montréal, <i>Current Trends in Symplectic Geometry</i>	July 2019
Tropical Lagrangians in Mirror Symmetry	
Università Statale degli Studi di Milano, <i>Seminario Di Natale</i>	December 2018
Tropical Lagrangian Submanifolds from Lagrangian Cobordisms	

Lecture Series

PIMS, <i>Summer School on Floer Homotopy Theory</i>	July 2022
3 Courses on: Applications of Floer Theory	
ETH Zürich,	January 2020
5 Courses on: Lagrangian Submanifolds in Toric Fibrations	

Seminar Talks

University of Edinburgh, <i>Hodge Club</i>	June 2022
An Introduction to A_∞ Algebras	
University of Nottingham (Virtual), <i>Nottingham Online Algebraic Geometry Seminar</i>	Apr 2022
Realizing Tropical Curves via Mirror Symmetry	
University of Edinburgh, <i>Hodge Club</i>	Dec 2021
An Introduction to Tropical Geometry	
U. Geneva & U. Neuchâtel, <i>GeNySys</i>	November 2021
The Support of the Lagrangian Lift of a Tropical Hypersurface	
University of Edinburgh, <i>Hodge Seminar</i>	September 2021
Symplectic to Tropical to Complex Geometry	
Tel Aviv University (Virtual), <i>Geometry and Dynamics Seminar</i>	June 2021
Decompositions of Lagrangian Cobordisms	
Hebrew University, <i>Topology and Geometry Seminar</i>	June 2021
Realizability and Obstruction in Tropical Geometry	
Boston University (Virtual), <i>Geometry and Physics Seminar</i>	November 2020
Lagrangian Submanifolds in Almost Toric Fibrations	
Northwestern University (Virtual), <i>NU Geometry and Physics Seminar</i>	November 2020
Lagrangian Surgery, Antisurgery, and Dimers	
University College London (Virtual), <i>Symplectic Cut</i>	November 2020
Almost Toric Base Diagrams and HMS	

Stanford University (Virtual), <i>Symplectic Geometry Seminar</i> Generating the Mirror to a Toric Variety	June 2020
Online Seminar Series (Virtual), <i>West. Hemisphere Symplectic Geo. Sem.</i> Lagrangian Cobordisms and Lagrangian Surgeries	May 2020
Rutgers University (Virtual), <i>Seminars on Geometry, Symmetry, and Physics</i> Wall Crossings and Lagrangian Cobordisms	April 2020
King's College London, <i>KCL/UCL Geometry Seminar</i> Manipulating Lagrangian Cobordisms in Lefschetz Fibrations	October 2019
Imperial College, <i>London Geometry and Topology Seminar</i> The Support of a Lagrangian	October 2019
ETH Zürich, <i>Symplectic Geometry Seminar</i> Counting Disks on Lagrangian Cobordisms	September 2019
Université du Québec à Montréal, <i>Séminaire Symplectique</i> Wall Crossing and Lagrangian Cobordisms	March 2019
Stanford University, <i>Symplectic Geometry Seminar</i> Floer-Theoretic Support of Tropical Lagrangians	February 2019
Cambridge University, <i>Differential Geometry and Topology Seminar</i> Tropical Lagrangians and Mirror Symmetry	November 2018
Edinburgh University, <i>EDGE Seminar</i> Dimers and Tropical Lagrangians	November 2018
Uppsala University, <i>Geometry and Topology Seminar</i> Tropical Lagrangians and Mutations	October 2018
ETH Zürich, <i>Symplectic Geometry Seminar</i> Tropical Lagrangians from Lagrangian Cobordisms	October 2018
Columbia University, <i>Symplectic, Gauge Theory, and Categorification Seminar</i> Tropical Lagrangians and Mirror Symmetry	September 2018
MSRI, <i>EGN Symplectic Geometry and Mirror Symmetry Seminar</i> Tropical Lagrangians and Mirror Symmetry	May 2018

Teaching and Mentoring

Course Instructor

UC Berkeley, <i>Math 32: Precalculus</i> Teaching Effectiveness: 5.79/7 Course Effectiveness: 5.63/7	Spring 2019
UC Berkeley, <i>Math 191: Introduction to Research with Combinatorial Topology</i>	Spring 2017
UC Berkeley, <i>Math 191: Introduction to Research with Combinatorial Topology</i>	Spring 2015

Discussions and Supervisions

University of Edinburgh, <i>Sev. Var. Calc. and Diff. Eq.</i>	Fall 2022
King's College, <i>Supervisions: Real Analysis</i>	Winter 2021
University of Cambridge, <i>Examples: Symplectic Topology</i>	Winter 2021
King's College, <i>Supervisions: Algebraic Topology</i>	Fall 2020
King's College, <i>Supervisions: Real Analysis</i>	Winter 2020
University of Cambridge, <i>Examples: Symplectic Topology</i>	Winter 2020
UC Berkeley, <i>Math 53: Multivariable Calculus</i>	Fall 2017
UC Berkeley, <i>Math 53: Multivariable Calculus</i>	Spring 2016
UC Berkeley, <i>Math 53: Multivariable Calculus</i>	Fall 2014
UC Berkeley, <i>Math 54: Linear Algebra and Differential Equations</i>	Spring 2014

Other Teaching and MentoringSummer Research Projects, *Research Advisor*

Daniel Holmes	<i>Aff. Dimers from Char. Polygons.</i> The PUMP J. of UG R., 5	2021
Canada-USA Mathcamp, <i>Mentor</i>		2014-2016
	Developed and taught week-long courses for talented highschool students, as well as overseeing student-led projects.	
Berkeley Mathematics Directed Reading Program, <i>Mentor</i>		
Elliot Stahnke	<i>Drawing Graphs and Laplacians</i>	2017
Har'el Fishbein	<i>Khovanov Homology: Overview of the Jones Polynomial</i>	2017
Melissa Chien	<i>History of the Linking Number</i>	2016
Xindi Ai	<i>A Quick Proof of Leray-Hirsch via Hypercohomology</i>	2015
Brianna Grado-White	<i>Geometry & the Universe: an Exploration of CY-Manifolds</i>	2014
Prison University Project at San Quentin State Prison, <i>Course Instructor</i>		Fall 2017
	Co-taught Intermediate Algebra.	
Los Angeles Math Circle, <i>Instructor</i>		2010-2013
	Developed and taught course materials for grades 4 through 6.	
Other Outreach, <i>Instructor/Assistant</i>		
	Julia Robinson Mathematics Festival (2017), HMP Whitemoor (2019), LMS Undergraduate Summer School (2022)	

Administration and Service**Program Administration**

Canada-USA Mathcamp, <i>Academic Coordinator</i>		Summer 2018
	Designed academic program, invited speakers and mentored graduate students.	
Berkeley Mathematics Directed Reading Program, <i>Co-Founder and Organizer</i>		2014-2017
	Coordinated admissions and presentations, as well as securing program funding to gift textbooks to undergraduates.	
Splash at UCLA, <i>Co-Founder and President</i>		2010-2012
	Worked with LearningU development tools to create an opportunity for undergraduates to teach courses to high school students.	

Seminars Organized

University of Edinburgh, <i>Hodge Seminar</i>		2021-2022
	Co-Organizer	
UC Berkeley, <i>Student Symplectic Geometry Seminar</i>		Fall 2016
	Co-organizer	
UC Berkeley, <i>Student SFT Seminar</i>		Fall 2016
	Co-Organizer	
UC Berkeley, <i>First Year Graduate Student Seminar</i>		Fall 2013
	Co-Organizer	

Service

King's College, <i>Associate of Senior Common Room</i>		2019-2021
Graduate Student Assembly, <i>Math Department Representative</i>		2017-2018
	Introduced resolution to secure funding for Berkeley Connect, a program providing graduate fellowships for undergraduate mentorship.	

UC Berkeley, <i>Advising Council</i> Graduate Student Representative	2017-2018
MIT, <i>Directed Reading Program Workshop 2018</i> Discussion Group Leader	May 2018
Scientific Review Activities, <i>Referee Reports</i> “Adv. in Math”, “Ann. Henri Lebesgue”, “Forum of Math., Sigma”, “J. of Symplectic Geometry”, “J. of Fixed Point Th. and App.”, “Mathematica Slovaca”, “SIGMA”	

Awards and Funding

Funding

EPSRC Postdoctoral Fellowship (EP/V049097/1) (£313,067)	2022
AIM SQuaRE Funding	2019
DRP Collegium Funding (7000 USD)	2016

Awards

Outstanding Graduate Student Instructor Award	2017
Daus Memorial Award	2013
NSF GSRFP Honorable Mention	2013
Departmental Scholar in Mathematics	2012
Highest Honors at Budapest Semesters in Mathematics	2011
Knapp Scholarship	2011
Les and Betty Knesel Scholarship	2010
Regent’s Scholar at UCLA	2009

References

Prof. Denis Auroux Harvard University 539 Science Center 1 Oxford Street Cambridge MA 02138, USA auroux@math.harvard.edu	Prof. Paul Biran ETH Zurich HG G 63.1 Rämistrasse 101 8092 Zürich, Switzerland paul.biran@math.ethz.ch	Prof. Mark Gross DPMMS Centre for Mathematical Sciences Wilberforce Road Cambridge, CB3 0WB, UK m.gross@dpms.cam.ac.uk
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Dr. Ailsa Keating DPMMS Centre for Mathematical Sciences Wilberforce Road Cambridge, CB3 0WB, UK amk50@cam.ac.uk	Prof. Ivan Smith DPMMS Centre for Mathematical Sciences Wilberforce Road Cambridge, CB3 0WB, UK i.smith@dpms.cam.ac.uk
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