Michael A. Hill

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Education

Massachusetts Institute of Technology Cambridge, MA
Ph.D. in Mathematics, 2006. Thesis Title: *Computational Methods for Higher Real K-theory with applications to tmf*. Thesis Advisor: Michael Hopkins.

Harvard University Cambridge, MA
A.B. in Mathematics, *summa cum laude*, 2002. Phi Beta Kappa.

Employment

University of Minnesota Minneapolis, MN
2024-Present Ordway Professor of Mathematics.

University of California at Los Angeles Los Angeles, CA
2015-24 Professor of Mathematics.

University of Virginia Charlottesville, VA
2010-15 Associate Professor of Mathematics.
2009-10 Assistant Professor of Mathematics.

Harvard University Cambridge, MA
2009-10 Visiting Post-Doc.

University of Virginia Charlottesville, VA
2006-09 Whyburn Instructor of Mathematics.

Harvard University Cambridge, MA
Summer 2006, 2007 Visiting Post-Doc.

Awards, Honors, & Invited Addresses

Awards.

2023	Fellow of the Association for Women in Mathematics - 2023 Class
2022	AMS Veblen Prize with Michael Hopkins and Douglas Ravenel
2020	Fellow of the American Mathematical Society - 2021 Class
2011-15	Alfred P. Sloan Research Fellow

Invited Addresses.

2022	Sampson Lecture at Bates College
2018	Hayden–Howard Lecture at University of Kentucky
2017	Namboodiri Lectures at University of Chicago
2014	ICM Invited Speaker - Seoul International Congress of Mathematicians
2013	AMS Invited Address - Louisville, KY

Visiting Positions.

2025	Rothschild Fellow, Isaac Newton Institute, Cambridge
2023	Distinguished Visiting Professor, Brown University, Providence
2022	Hausdorff Center for Mathematics, Bonn
2019	Research Professor - Derived Algebraic Geometry, MSRI, Berkeley
2017	Institut Mittag–Leffler, Stockholm
2015	Hausdorff Center for Mathematics, Bonn

GRANTS

2022-24	NSF: "Collaborative Undergraduate Research Experiences in the Mathematical Sciences for Community College Students".
2022-27	NSF RTG: "Geometry and Topology Research Training Group".
2021-25	NSF Grant DMS-2105019: "Equivariant Approaches to Chromatic Homotopy".
2021-25	NSF FRG Grant DMS-2052702: "Collaborative Research: Trace methods and applications for cut-and-paste K-theory".
2018-21	NSF Grant DMS–1811189: "Computations in Stable and Unstable Equivariant Chromatic Homotopy".
2016-20	NSF FRG Grant DMS–1563615: "Collaborative Research: Floer Homotopy Theory".
2015-19	NSF Grant DMS–1509652: "Equivariant Derived Algebraic Geometry".
2012-16	NSF Grant DMS–1207774: "Computations in Equivariant Homotopy and Algebraic K-Theory".
2009-13	NSF grant DMS–0906285: "Computations in Classical Chromatic Homotopy Theory, Algebraic K-Theory, and Motivic Homotopy".

Graduate Students

Graduated Students

(1) Kristen Mazur – 2013
(2) Carolyn Yarnall – 2013
(3) Peter Bonventre – 2017
(4) John Bermann – 2018
(5) Andrew Smith – 2021
(6) Hannah Housden – 2022
(7) Christian Carrick – 2022
(8) Bar Roytman – 2023
(9) Benjamin Szczesny – 2023
(10) Alexander Frederick – 2023
(11) Benjamin Spitz – 2024

Current Students

(1) Jason Schuchardt (at UCLA)
(2) Noah Wisdom (at Northwestern)
(3) Spencer Martin
(4) Connor Bass
(5) Melissa Wei
(6) Garrett Credi

Post-docs & Mentoring

Former

(1) Michael Andrews (15-18)
(2) Aaron Royer, NSF (16-19)
(3) Angelica Osorono, Wilson (16-17)
(4) Clover May (18-21)
(5) Jonathan Rubin, NSF (18-21)
(6) Christy Hazel (20-23)
(7) Hood Chatham, NSF (20-23)
(8) Richard Wong (21-24)
(9) Morgan Opie, NSF (21-25)
(10) Brian Shin (22-25)

Select National Service

2014-Present	**Spectra: the association for LGBTQ mathematicians** Cofounder and President for this international organization supporting LGBTQ+ mathematicians
2023-Present	SLMath's Broadening Participation Committee (co-Chair)
2024-25	SLMath SRiM Selection Committee
2020-Present	**Name Change Policy Working Group** Founding member of a group working with publishers and national professional societies to adopt name change policies that better support the lived experiences of scientists
2014-Present	Mentor for the **Math Alliance**
2012-Present	Mentor for the **Association for Women in Mathematics**.

Service to the American Mathematical Society

2024-Present	AMS Nominating Committee
2024-Present	AMS Fellows Prize Selection Committee
2024-25	AMS representative to the AAAS Human Rights Committee
2017-23	AWM–Birman Prize Selection Committee
2022-25	AMS Committee on Human Rights

Editorial Positions

2025-Present	Managing Editor for Advances in Mathematics
2023-Present	Editor for Tunisian Journal of Mathematics
2020-25	Editor for La Mathematica
2017-21	Editor for Transactions of the AMS
2016-21	Editor for Documenta Mathematica
2015-21	Editor for Mathematische Zeitschrift

Select Conference Organizing & Coorganizing

Dec. 2024	SLMath Hot Topics Workshop: Telescope Conjecture
Jul. 2024	AMS MRC: Homotopical Combinatorics
Jan. 2024	JMM Special Sessions in equivariant homotopy, equivariant algebra, and work of LGBTQ+ mathematicians
Aug. 2023	MFO Workshop: Homotopy Theory
May. 2021	AIM Workshop: Equivariant techniques in chromatic homotopy
Mar. 2020	Banff Workshop: Stable homotopy and p-adic Hodge theory
Aug. 2019	MFO Workshop: Homotopy Theory
Oct. 2017	Winter School in Algebraic Topology at CIMAT-Merida
Apr. 2016	AIM Workshop: Equivariant Derived Algebraic Geometry
Feb. 2016	Banff Workshop: Equivariant Derived Algebraic Geometry
Apr. 2015	Mid-Atlantic Topology Conference
Spring 2014	MSRI Semester: Algebraic Topology
2004 – 2007	Cofounder of "Talbot" young researchers conference (funded by National Science Foundation grant DMS-0512714)

Selected Presentations

(1) INI Rothschild Lecture: "The Shape of Data". June 2025.
(2) New horizons for equivariance in homotopy theory: "The structure of transfer systems". May 2025.

(3) Operads and Calculus: 3 Lectures on N_∞-operads and their algebras. April 2025.
(4) Inclusivity in the Mathematical Sciences: "A Conversation on Professional Norms in Mathematics (Learnings from the AMS publication of the same name)". March 2025.
(5) IMU Executive Council Meeting Colloquium: "Group actions, algebra up to homotopy, and flavors of commutativity". March 2025.
(6) Introductory Workshop for Equivariant Homotopy Theory in Context: "Stabilization in an unstable world". January 2025.
(7) Introductory Workshop for Equivariant Homotopy Theory in Context: "G-commutative monoids". January 2025.
(8) CIMAT-Merida Summer School Lecture Series: Equivariant Homotopy. July 2024.
(9) $Spec(\bar{\mathbb{Q}}(2\pi i))$: "Spectral Algebraic Geometry". June 2024.
(10) Michigan State University Colloquium: "Group actions, algebra up to homotopy, and flavors of commutativity". February 2024.
(11) Homotopy theory, K-theory, and trace methods: "Generalized slice filtrations". July 2023.
(12) A Panorama of Homotopy Theory: "Equivariant slice filtrations". June 2023.
(13) UW Colloquium: "Group actions, algebra up to homotopy, and flavors of commutativity". May 2023.
(14) University of Minnesota Colloquium: "Group actions, algebra up to homotopy, and flavors of commutativity". March 2023.
(15) Homotopy theory in honor of Paul Goerss: "Equivariant approaches to chromatic homotopy". March 2023.
(16) OSTEM Regional Undergraduate Conference. "It's dangerous to go alone". March 2022.
(17) Talbot 2021: "What is Talbot if not friendship persevering". June 2021.
(18) Queen's College Colloquium: "Counting exotic spheres". March 2021.
(19) Hayden–Howard Lecture at University of Kentucky: "Evenness in algebraic topology". September 2018
(20) Young Topologists Meeting lecture series: "Multiplicative transfers". July 2018
(21) Michigan State University Colloquium: "Evenness in Algebraic Topology". November 2017
(22) Namboodiri Lectures at UChicago: "Evenness in Algebraic Topology"
(23) International Congress of Mathematicians: "On the non-existence of elements of Kervaire invariant one", August 2014
(24) Invited Address, AMS Sectional Meeting, Louisville, KY, October 2013: *Framed manifolds and equivariant homotopy: A solution to the Kervaire Invariant One problem*
(25) Copenhagen University, August 2013: 10 lecture Master Class *Computations in equivariant homotopy*
(26) Vietnam Institute for Advanced Study in Mathematics, July 2013: series of 9 lecture *The mathematics around the Kervaire Invariant One problem*
(27) Guterman Lecture, Tufts University (invited address with a focus on undergraduates), April 2013: *Ruler, Compass, and Origami Constructions*
(28) Workshop on the Kervaire Invariant, Israel, May 2011: Series of 7 talks.
(29) Oberwolfach Lecture Series, September 2010: *The Kervaire Invariant One Problem*