Matthew H. Hamil, Ph.D.

Contact Information

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Research Interests

Tensor triangulated categories, tensor triangular geometry, and applications to the representation theory of Lie algebras, Lie superalgebras, algebraic groups, and finite groups.

Employment

J.J. Sylvester Assistant Professor of Mathematics 2025-2026

- Department of Mathematics, Johns Hopkins University, Baltimore, MD.
- Postdoctoral mentor: Mee Seong Im

Graduate Teaching Assistant 2020-2025

- Department of Mathematics, University of Georgia, Athens, GA.

Education

Doctor of Philosophy (Ph.D.) in Mathematics May 2025

- University of Georgia
- Advisor: Daniel K. Nakano
- Dissertation title: *On localizing subcategories of Lie superalgebra representations*

Master of Arts (M.A.) in Mathematics July 2020

- University of Georgia
- Advisors: Brian Boe and Arik Wilbert
- Thesis title: *On parabolic Kazhdan–Lusztig polynomials*

Bachelor of Science (B.S.) in Mathematics December 2019

- University of Georgia
- Graduated Cum Laude

Papers and Preprints

On localizing subcategories of Lie superalgebra representations, submitted, *Adv. Math.* (2025), 15 pages, arXiv:2503.13639.

The homological spectrum and nilpotence theorems for Lie superalgebra representations (with D. Nakano), provisionally accepted in *J. Algebra* (2024), 25 pages, arXiv:2404.04457

Research Talks

15th Southeastern Lie Theory Workshop, College of Charleston, Charleston, SC. May 2025
Localizing subcategories of Lie superalgebra representations in Type A.

Topology Seminar, Department of Mathematics, Johns Hopkins University, Baltimore, MD. April 2025
Localizing subcategories of Lie superalgebra representations.

Joint Mathematics Meetings, Seattle Convention Center, Seattle, WA. January 2025
Classifying localizing subcategories of Lie superalgebra representations.

AMS Spring Western Sectional Meeting, San Francisco State University, San Francisco, CA. May 2024
The homological spectrum and nilpotence theorems for Lie superalgebra representations.

	14th Southeastern Lie Theory Workshop, University of Virginia, Charlottesville, VA. *The homological spectrum via nilpotence theorems for Lie superalgebra representations.*	March 2024
	Algebra Seminar, Department of Mathematics, University of Georgia, Athens, GA. *A nilpotence theorem via homological residue fields for Lie superalgebra representations*.	November 2023
	AMS Fall Southeastern Sectional Meeting, University of South Alabama, Mobile, AL. *Nilpotence theorems via homological residue fields for Lie superalgebra representations.*	October 2023
	13th Southeastern Lie Theory Workshop, North Carolina State University, Raleigh, NC. *Stratifying the stable category of modules over detecting Lie subalgebras.*	May 2023
Conferences Attended	Advances in Lie Theory, Representation Theory, and Combinatorics: Inspired by the work of Georgia Benkart, Simons Laufer Mathematical Sciences Institute, Berkeley, CA.	May 2024
	AMS Spring Southeastern Sectional Meeting, Georgia Institute of Technology, Atlanta, GA.	March 2023
Teaching	**Johns Hopkins University:**	
	MATH 411: Honors Algebra I. Instructor of Record (1 section)	Fall 2025
	MATH 301: Intro to Proofs. Instructor of Record (1 section).	Fall 2025
	University of Georgia:	
	MATH 2260: Calculus II for Science and Engineering. Instructor of Record (1 section)	Spring 2025
	MATH 2250: Calculus I for Science and Engineering. Instructor of Record (1 section).	Fall 2024
	MATH 2250E: Calculus I for Science and Engineering. Instructor of Record (1 section, online).	Summer 2024
	MATH 1113: Precalculus. Instructor of Record (2 sections).	Spring 2024
	MATH 2250: Calculus I for Science and Engineering. Instructor of Record (1 section).	Fall 2023
	MATH 1113: Precalculus. Instructor of Record (2 sections).	Spring 2023
	MATH 1113: Precalculus. Instructor of Record (1 section).	Fall 2022
Service	**Conferences organized:**	
	Representation Theory and Related Geometry, Progress and Prospects, University of Georgia, Athens, GA. Local organizer.	May 2024
	Miscellaneous:	

University of Georgia Department of Mathematics Graduate Student Orientation. Organizer, speaker. — August 2022, 2023, 2024

Honors and Awards

William Armor Wills Memorial Scholarship Award — May 2025

- University of Georgia, Department of Mathematics, Athens, GA.
- Awarded annually for excellence in research.

Charles M. Strahan Award — December 2019

- Awarded annually to the top junior mathematics major.
- University of Georgia, Department of Mathematics, Athens, GA.

Skills

Programming:

- Python, Java, LaTeX, HTML, CSS

Languages:

- English (Native)
- Portuguese (Limited working proficiency)