

MENGWEI HU

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EDUCATION

Ph.D. in Mathematics, Yale University 2020–2026

Advisor: Prof. Ivan Losev

B.Sc. (Honor) in Mathematics, Sichuan University 2016–2020

RESEARCH INTERESTS

Geometric representation theory and its connections to algebraic and symplectic geometry. In particular, geometric tools for unitary representations of Lie groups and involutions of quiver varieties.

PUBLICATIONS

- Hu, M. On certain Lagrangian subvarieties in minimal resolutions of Kleinian singularities. *Submitted*. DOI: 10.48550/arXiv.2504.08717.
- Hu, M. Presentations of diagram categories. *PUMP J. Undergrad. Res.* 2019, 3, 1–25. DOI: 10.46787/pump.v3i0.2256.

FELLOWSHIPS & AWARDS

- **Fan Family Fellowship**, Yale University 2020–2021
- **Conference Travel Fellowship**, Yale University 2025
- **Symposium Travel Grant**, Association for Women in Mathematics 2025

INVITED TALKS

- Seattle Noncommutative Algebra Conference, University of Washington Dec 2025
- AMS Central Sectional (Geometry, Representation Theory & Noncommutative Algebra), SLU Oct 2025
- Representation Theory Seminar, UMass Amherst Nov 2025
- Algebra Seminar, University of Georgia Oct 2025
- Topology Seminar, Johns Hopkins University Sep 2025
- Algebra Seminar, University at Buffalo Sep 2025
- Algebra Seminar, Syracuse University Sep 2025
- AWM Research Symposium (Mathematical Physics & Representation Theory), UW-Madison May 2025
- Algebra Seminar, University of Oregon Mar 2025
- Algebra Seminar, UCLA Mar 2025
- Geometry, Symmetry and Physics Seminar, Yale Jan 2025
- AMS Western Sectional (Geometric & Categorical Representation Theory), UC Riverside Oct 2024
- AMS Eastern Sectional (Singularities in Commutative Algebra), UAlbany Oct 2024

Contributed Presentations

- International Congress of Mathematicians (ICM) 2026, Philadelphia (short communication) Jul 2026
- Categorification and Symplectic Duality Workshop, Northeastern University (poster) Jun 2025

TEACHING

- **Instructor of Record**, Yale University
 - MATH 115: Calculus of Functions of One Variable II *Fall 2024, Spring 2026*
 - MATH 112: Calculus of Functions of One Variable I *Fall 2022, Fall 2023*
 - MATH S118E: Introduction to Functions of Several Variables, *Syllabus Summer 2024*
- **Certificate of College Mathematics Teaching Preparation** *2025*
- Teaching Assistant: Linear Algebra, Calculus *Spring, Summer, Fall 2021, Summer 2023*

MENTORING

- **REU Mentor**, Superalgebras and Polynomial Spaces *Summer 2025*
- Mentor, American Women in Mathematics Mentor Network *2025–present*
- Mentor, Yale Math Buddies Program for First-Year Graduate Students *Fall 2022*
- Mentor, Yale Take an Undergraduate to School *Spring 2022*

SERVICE AND OUTREACH

Professional Service

- Reviewer, zbMATH Open *2025–present*
- Graduate School Panelist, Women in Mathematics in New England *Sep 2024*
- Graduate Instructor Panelist, Lang Teaching Seminar at Yale *Mar 2024*

Organizational Service

- Organizer, Joint Yale-Columbia Representation Seminar *Fall 2022*
- Organizer, Yale Graduate Student Seminar *Spring 2022*

Community Service

- Sports Chair, Yale Research Experience for Undergraduate Students *Summer 2025*
- Committee Member, Yale Graduate Student Advisory Committee *2023–2026*
- Network Member, American Women in Mathematics Research Networks: WINART, WICA *2025–present*