

Lucy Yang

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EMPLOYMENT

Columbia University

Joseph Fels Ritt Assistant Professor of Mathematics

New York, NY

July 2023–

EDUCATION

Harvard University

Ph.D. in Mathematics

Cambridge, MA

May 2023

University of Minnesota, Twin Cities

Bachelor of Science in Mathematics, Minor in Physics

Minneapolis, MN

May 2018

RESEARCH INTERESTS

Derived algebraic geometry, Grothendieck–Witt theory via Poincaré motives & real trace methods, categorical dynamics

PREPRINTS & PAPERS

- ▶ Artin–Mazur formal groups and Milne duality via unipotent spectra *with S. Mondal and T. Moulinos* Oct. 2025
preprint available at [arXiv:2510.06152](https://arxiv.org/abs/2510.06152).
- ▶ Involutive Brauer groups and Poincaré rings *with V. Burghardt and N. Riggenbach* Sept. 2025
preprint available at [arXiv:2509.25737](https://arxiv.org/abs/2509.25737).
- ▶ A filtered Hochschild–Kostant–Rosenberg theorem for real Hochschild homology March 2025
submitted, preprint available at [arXiv:2503.03024](https://arxiv.org/abs/2503.03024).
- ▶ Equivariant Witt Complexes and Twisted Topological Hochschild Homology *with A. M. Bohmann, T. Gerhardt, C. Krulewski, and S. Petersen* 2025
in *Topology and its Applications*, Volume 376.
- ▶ Normed \mathbb{E}_∞ -rings in genuine equivariant C_p -spectra 2025
in *Int. Math. Res. Not.* Volume 2025, Issue 3.
- ▶ Categorical dynamics on stable module categories. Dec. 2022
submitted, preprint available at [arXiv:2212.09964](https://arxiv.org/abs/2212.09964).
- ▶ A descent view on Mitchell’s theorem *with E. Elmanto & D. Nardin.* 2025
in *Israel J. Math.*

INVITED TALKS

- ▶ Involutions and the Brauer group in derived algebraic geometry *Young homotopy theorists*
ICMS Edinburgh Oct. 2025
- ▶ Involutions and the Brauer group in derived algebraic geometry *Wuppertal* June 2025
- ▶ Involutions and the Brauer group in derived algebraic geometry *Isaac Newton Institute* June 2025
- ▶ Involutions and the Brauer group in derived algebraic geometry *Maryland Brin Center* June 2025
- ▶ Involutions and the Brauer group in derived algebraic geometry *Duke University* April 2025

► Involutions and the Brauer group in derived algebraic geometry	<i>JMM Special Session in homotopy theory Jan. 2025</i>
► Involutions and the Brauer group in derived algebraic geometry	<i>UBC Jan. 2025</i>
► Normed \mathbb{E}_∞ -rings in genuine equivariant C_p -spectra	<i>UVA Oct. 2024</i>
► Normed \mathbb{E}_∞ -rings in genuine equivariant C_p -spectra	<i>AMTRAK Sept. 2024</i>
► A real Hochschild–Kostant–Rosenberg theorem	<i>Casa Matemática Oaxaca June 2024</i>
► A real Hochschild–Kostant–Rosenberg theorem	<i>Real algebraic K-theory and trace methods, Paris May 2024</i>
► A real Hochschild–Kostant–Rosenberg theorem	<i>Midwest Topology April 2024</i>
► Categorical dynamics on stable module categories	<i>Notre Dame March 2024</i>
► Categorical dynamics on stable module categories	<i>LAGOON Webinar January 2024</i>
► Categorical dynamics on stable module categories	<i>JMM January 2024</i>
► Normed \mathbb{E}_∞ -rings in genuine equivariant C_p -spectra	<i>JMM January 2024</i>
► Categorical dynamics on stable module categories	<i>MSU Nov. 2023</i>
► Categorical dynamics on stable module categories	<i>University of Regensburg Nov. 2023</i>
► Fractals, fractional dimension, and Julia sets	<i>Columbia Undergrad Math Society October 2023</i>
► Normed \mathbb{E}_∞ -rings in genuine equivariant C_p -spectra	<i>AMS Central Sectional October 2023</i>
► The algebra of vector bundles	<i>ENYGMMA Sept. 2023</i>
► Categorical dynamics on stable module categories	<i>Johns Hopkins April 2023</i>
► Categorical dynamics on stable module categories	<i>UIUC Feb. 2023</i>
► Fractals, fractional dimension, and Julia sets	<i>University of Kentucky Math Club Feb. 2023</i>
► Categorical dynamics on stable module categories	<i>University of Kentucky Feb. 2023</i>
► A real Hochschild–Kostant–Rosenberg theorem	<i>University of Warwick Dec. 2022</i>
► A real Hochschild–Kostant–Rosenberg theorem	<i>UPenn Dec. 2022</i>
► Categorical dynamics on stable module categories	<i>Columbia University Dec. 2022</i>
► A real Hochschild–Kostant–Rosenberg theorem	<i>UCLA Nov. 2022</i>
► A real Hochschild–Kostant–Rosenberg theorem	<i>UChicago Oct. 2022</i>
► A real Hochschild–Kostant–Rosenberg theorem	<i>Northwestern University Oct. 2022</i>

CONTRIBUTED TALKS

► The character map for tempered cohomology	<i>Regensburg Oberseminar June 2022</i>
► Algebraic surgery for regular coherent rings	<i>Regensburg Oberseminar June 2021</i>
► Dieudonné modules	<i>Talbot workshop Oct. 2021</i>
► Descent and vanishing in chromatic algebraic K-theory	<i>Thursday Seminar March 2021</i>
► Poincaré ∞ -categories	<i>Regensburg Oberseminar Dec 2020</i>
► Condensed sets	<i>Thursday seminar Sept. 2020</i>
► Formality of the little n -disks operad	<i>Feb. 2020</i>
► Cyclotomic spectra and TC	<i>European Talbot June 2019</i>

TEACHING EXPERIENCE

- ▶ Instructor for Algebraic Topology (graduate) *Columbia Spring 2025–*
- ▶ Instructor for Algebraic Topology (undergraduate) *Columbia Spring 2024*
- ▶ Instructor for Calculus II *Columbia Fall 2023–*
- ▶ TA for Math 22A, Harvard *Fall 2021 & Fall 2022*
- ▶ TA for PHYS 1302W, UMN *Fall 2015*

SERVICE AND ORGANIZATIONAL ACTIVITIES

- ▶ Co-mentor, Algebraic Geometry Summer Research Institute bootcamp *July 2025*
Topic: Derived algebraic geometry
- ▶ Organizer, learning seminar on derived deformation theory *Fall 2024*
- ▶ Organizer, Algebraic geometry learning seminar at Columbia *Fall 2024*
Topic: Shifted symplectic structures
- ▶ Organizer, Algebraic Topology seminar at Columbia *Fall 2023–*
- ▶ Mentor, Directed reading program at Harvard *2019*
Mentored undergraduate reading projects on knot theory and category theory
- ▶ Mentor, MIT PRIMES program *2021*
Mentored a research project on topological data analysis for high school students
- ▶ Organizer, Harvard Real Representation lunches (formerly Womxn in Math) *2019-2021*
- ▶ Organizer, Talbot Workshop *2019-2023*
- ▶ Organizer, Juvitop seminar *Spring 2020-Spring 2021*

HONORS AND AWARDS

- ▶ NSF Graduate Fellowship *2018-2023*