Nicholas Wawrykow

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RESEARCH INTERESTS Algebraic topology: configuration spaces, stability patterns, topological complexity, geometric group theory, group cohomology

EMPLOYMENT

University of Chicago, Chicago, Illinois
L.E. Dickson Instructor (postdoc) September 2023 – August 2026

EDUCATION

University of Michigan, Ann Arbor, Michigan
Ph.D. in Mathematics, April 2023
Thesis: *Higher Order Representation Stability and Disk Configuration Spaces*
Advisor: Jennifer Wilson

Yale University, New Haven, Connecticut
M.S. in Mathematics, May 2017

Yale University, New Haven, Connecticut
B.S. in Mathematics, May 2017
Cum laude with distinction in mathematics

PAPERS and PREPRINTS

11. *The sequential (distributional) topological complexity of the ordered configuration space of disks in a strip*,
Bulletin of the London Mathematical Society, Volume 57, No. 7, (2026).
10. *The* 15 *Puzzle and homological stability in the space direction*, with Jesús González and Matthew Kahle,
https://arxiv.org/pdf/2602.21300 (2026).
9. *Representation stability for disks in a strip*,
Journal of Topology and Analysis, Volume 18, 139–205 (2026).
8. *Representation asymptotics in the homology of pure graph braid groups*, with Louis Hainaut and Ben Knudsen,
https://arxiv.org/pdf/2510.00201 (2025).
7. *A discrete model for surface configuration spaces*,
https://arxiv.org/pdf/2504.10406 (2025).
6. *Homology Generators and Relations for the Ordered Configuration Space of a Star Graph*,
Transactions of the American Mathematical Society, Series B, Volume 12, 1188–1222 (2025).
5. *The topological complexity of the ordered configuration space of disks in a strip*,
Proceedings of the American Mathematical Society, Series B, Volume 11, 638–652 (2024).
4. *On the symmetric group action on rigid disks on a strip*,
Journal of Applied and Computational Topology, Volume 7, 427–472 (2022).

3. *Secondary representation stability and the ordered configuration space of the once-punctured torus*,
Topology and its Applications, Volume 319 (2022).
2. *Chip-firing on Trees of Loops*, with Vivian Kuperberg and Sameer Kailasa
Electronic Journal of Combinatorics, Volume 25.1 (2018).
1. *Realization of Groups with Pairing as Jacobians of Finite Graphs*, with Louis Gaudet, David Jensen, Dhruv Ranganathan, and Theodore Weisman
Annals of Combinatorics, Volume 22, 781–801 (2017).

TEACHING EXPERIENCE

University of Chicago:

Winter '25, Autumn '25	Math 29700	Proseminar in Mathematics (reading course)	Instructor
Spring '26	Math 27000	Basic Complex Variables	Instructor
Autumn '24	Math 26700	Representation Theory of Finite Groups	Instructor
Autumn '23	Math 26200	Point-Set Topology	Instructor
Spring '24, '25, '26	Math 16300	Honors Calculus III	Instructor
Winter '24, '25, '26	Math 16200	Honors Calculus II	Instructor
Autumn '23, '24, '25	Math 16100	Honors Calculus I	Instructor

University of Michigan:

Fall '18, '19, '20, '21, '22, & Winter '19, '20, '21	Math 116	Calculus II	Instructor
Fall '17, Winter '18	Math 115	Calculus I	Instructor

AWARDS

- AMS-Simons Travel Grant, American Mathematical Society (2023-2025)
- Allen L. Shields Memorial Fellowship, University of Michigan Mathematics Department (2022)
- Edwin Wilkinson Miller Prize, University of Michigan Mathematics Department (2021)
- George Beckwith Prize for Excellence in Mathematics, Yale University (2016)

TALKS

- Configuration Spaces Summer School/Colloquium, University of Michigan, May 2026
- No Boundaries/Geometry and Topology Seminar, University of Chicago, April 2026
- Special Session on Configuration Spaces and Applications, AMS Spring Eastern Sectional Meeting, March 2026
- Topology Seminar, Colorado State University, March 2026
- Colloquium, Lehigh University, November 2025
- Special session on LS-Category and Topological Complexity: Theory and Applications, AMS Eastern Virtual Sectional Meeting, October 2025
- Topology Seminar, University of Michigan, September 2025
- AMS Special Session on Topological and Algebraic Properties of Additive Manufacturing, Joint Mathematics Meeting, January 2025
- RTG Seminar on Geometry, Dynamics and Topology, University of Michigan, October 2024

- Topology Seminar, The Ohio State University, September 2024
- Configuration Spaces and Related Topics (conference), Daegu, South Korea, August 2024
- Topological Complexity Seminar, Applied Algebraic Topology Research Network (virtual), June 2024
- Topology Seminar, University of Minnesota (virtual), March 2024
- Special session on modern developments in the theory of configuration spaces, Joint Mathematics Meetings, January 2024
- Geometry and Topology Seminar, University of Illinois Chicago, October 2023
- Geometry and Topology Seminar, University of Chicago, October 2023
- Stability in Topology, Arithmetic, and Representation Theory (conference), West Lafayette, IN, July 2023
- Topology Seminar, University of Notre Dame, April 2023
- New England Algebraic Topology and Mathematical Physics Seminar, Boston, MA, April 2023
- Tech Topology Conference (lightning talk), Georgia Institute of Technology, December 2022
- Topology Seminar, University of Michigan, November 2022
- Binghamton University Graduate Combinatorics, Algebra and Topology Conference, Binghamton University, November 2022
- Stability in Topology, Arithmetic, and Representation Theory (conference), West Lafayette, IN, March 2022
- Graduate Student Conference in Algebra, Geometry, and Topology, Philadelphia, PA (virtual), May 2021
- Topology Seminar, Purdue University (virtual), February 2021

SERVICE

- Co-organizer, No Boundaries/Geometry and Topology Seminar, University of Chicago (2024-2026)
- Co-organizer, Geometry and Topology Seminar, University of Chicago (2023-2024)
- Mentor, Mathematics REU, University of Chicago (Summer 2024, 2025)
- Co-host, JAMS Workshop: Research statement writing, University of Michigan (April 2023)
- Leader, Qualifying Exam Review Session for Complex Analysis, University of Michigan (Summer 2021, 2022, Fall 2022)