Porter Morgan

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Education

2020-Present **University of Massachusetts Amherst**
- Ph.D. student in Mathematics
- Advisor: İnanç Baykur
- Expected graduation May 2026
- GPA: 3.97

2014-18 **Kenyon College**
- B.A. in Mathematics and Classics
- GPA: 3.63

Awards

2025 Graduate Student Leadership award, University of Massachusetts Amherst math department

2024 Richard Elis Memorial Prize, University of Massachusetts Amherst math department

2020 and 2022 Mathematics fellowship, University of Massachusetts Amherst

Papers and preprints

4. **Irreducible 4-manifolds with order two fundamental group and even intersection form,** with Mihail Arabadji. *Submitted* (2025). [PDF]

3. **On nonorientable 4-manifolds,** with R. İnanç Baykur. *Submitted* (2025). [PDF]

2. **Geography of irreducible 4-manifolds with order two fundamental group,** with Mihail Arabadji. *Submitted* (2025). [PDF]

1. **Belted sum decompositions of fully augmented links**, with Brian Random, Dean Spyropoulos, Rolland Trapp, and Cameron Ziegler. *New York J. Math*, 31 (2025):1-42, 2024. [PDF]

Research Talks

September 2025 Princeton Topology Seminar

June 2025 Trisectors workshop 2025, hosted at UT Austin.

May 2025	"Women and Gender Minorities in Symplectic and Contact Geometry and Topology," special session of the AWM Research Symposium in Madison, Wisconsin.
April 2025	MIT Geometry and Topology Seminar.
February 2025	Geometry and Topology Seminar at the University of Massachusetts, Amherst.
February 2025	Geometry and Topology Seminar at Louisiana State University.
July 2024	Braids reunion workshop, hosted by ICERM in Providence, Rhode Island.
June 2024	Topology Student Workshop at Vanderbilt University.
May 2024	Georgia Topology Conference at University of Georgia (lightning talk).
March 2024	New England Algebraic Topology and Mathematical Physics Seminar at Amherst College.
February 2024	Geometric Topology Grad and Postdoc Seminar (zoom).
July 2023	Graduate Student Geometry and Topology Conference, hosted at Harvard (zoom).

Expository Talks

January 2025	Foliations on 3-manifolds: log cabin workshop in St George, UT
March 2024	Undergraduate math club at UMass Amherst.
February 2024	Reading seminar on automorphism groups of manifolds at UMass Amherst.
November 2023	Reading seminar on automorphism groups of manifolds at UMass Amherst.
September 2023	Undergraduate math club at UMass Amherst.
February 2023	Math department lunch seminar at Smith College.
November 2023	Topological quantum field theory learning seminar at UMass Amherst.
October 2023	Topological quantum field theory learning seminar at UMass Amherst.
March 2022	Floer homotopy theory reading seminar at UMass Amherst.

Teaching

UMass Amherst Department of Mathematics and Statistics

Teaching Assistant

Math 132	*Calculus II (2020-3)*
Math 132H	*Calculus II Honors (Fall 2022)*
Math 235	*Linear Algebra (Summer 2023, online)*
Math 331	*Differential Equations (Summer and winter terms 2024-6, online)*
Math 405	*Mathematical Computing; Python-based course (Spring 2024)*
Math 481	*Knot Theory (Fall 2023)*

Grader

Math 233H *Calculus III Honors (Fall 2024)*
Math 411 *Abstract Algebra I (Fall 2023)*
Math 412 *Abstract Algebra II (Spring 2025)*
Math 421 *Complex Variables (Spring 2025)*
Math 481 *Knot Theory (Fall 2023)*
Math 456 *Mathematical Modeling (Fall 2024)*
Math 671 *Point Set Topology (Fall 2024)*
Math 672 *Algebraic Topology (Spring 2024, Spring 2025)*
Math 790 *Topological Data Analysis (Fall 2024)*

UMass Amherst Jail Education Initiative

Fall 2025 Lead instructor for online introductory math course at Bristol County Jail in North Dartmouth, Massachusetts

Winter 2023 Teaching assistant for in-person introductory math course at Hampshire County Jail in Northampton, Massachusetts

University of Michigan

Summer 2023 Calculus I instructor at summer connections program, hosted by Ross School of Business

White Mountain School, Bethlehem NH

2018-2020 High school AP Calculus teacher

2018-2020 High school Precalculus teacher

Service, mentoring, and outreach

2023-4 and 2024-5 school years Co-chair of Graduate Student Action Committee, University of Massachusetts Amherst math department

2023-4 school year Organizer for reading seminar on automorphism groups of manifolds, University of Massachusetts Amherst

2023-4 school year Organizer of Undergraduate Math Club, University of Massachusetts Amherst

February 2024 Judge for Hack(h)er codeathon competition at University of Massachusetts Amherst

Fall 2023 Mentor for directed reading program in point set topology, University of Massachusetts Amherst

November 2023 Graduate student panelist Q&A session hosted by Society of Industrial and Applied Math

September 2023 Graduate student panelist at WIMIN conference, hosted by Smith College

2021-2 Recruitment committee for Graduate Student Action Committee, University of Massachusetts Amherst math department

Refereeing

Advances in Mathematics
Algebraic & Geometric Topology
Geometriae Dedicata

Other conferences and workshops attended

August 2025   Knots, Groups, and Manifolds conference hosted at CRM in Montréal, Québec

June 2025   Summer School and Conference on Modern Tools in Low-Dimensional Topology, at ICTP in Trieste, Italy

May 2024   Georgia Topology Summer School at the University of Georgia

Computer programming

2025   Built a food blog from scratch using Django, a Python-based web framework. Website is publicly available at lemonhead.ink and source code for the project is available on GitHub.

2022   Independently completed an introductory C++ course on Udemy. Topics included OOP fundamentals, polymorphism, and I/O streams.