



Nick Meyer

Assistant Professor of Mathematics

- Winona, MN
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About me

I am an Assistant Professor of Mathematics at Winona State University specializing in low-dimensional topology. I'm primarily interested in knot theory and manifold decompositions in dimensions three and four.

Professional Experience

- August 2026 – Present **Assistant Professor of Mathematics**
Winona State University
- August 2024 – June 2026 **Assistant Professor of Mathematics**
University of Central Missouri
- August 2018 – July 2024 **Graduate Assistant**
University of Nebraska – Lincoln

Education

- July 2024 **Ph.D. in Mathematics**
Advised by Dr. Alex Zupan
University of Nebraska – Lincoln
- May 2020 **M.S. in Mathematics**
University of Nebraska – Lincoln
- May 2018 **B.S. in Mathematics**
Winona State University
Cum Laude with a minor in Physics

Courses Taught

- Topology I and II
- Multivariable Calculus
- Discrete Mathematics
- Foundations of Geometry
- Calculus I and II
- Number Theory
- Graph Theory
- College Algebra

Publications

- December 2025 **Extending Fibrations of the 3-Torus and Applications to Torus Surgery in 4-Manifolds.**
Pre-Print. Submitted. [arXiv:2512.17595](#)
- July 2024 **Torus Surgery, Fibrations, Multisections, and Spun 4-Manifolds**
PhD Dissertation. [ProQuest](#)
- July 2023 **Pants distances of knotted surfaces in 4-manifolds**
Joint work with R. Aranda, S. Blackwell, D. Gulati, H. Karimi, G. Kim, and P. Pongtanapaisan.
Submitted. [arXiv:2307.13874](#)
- June 2023 **Tri-plane Diagrams for simple surfaces in S^4**
Joint work with W. Allred, M. Aragón, Z. Dooley, A. Goldman, Y. Lei, I. Martinez, D. Peters, S. Warrander, A. Wright, and A. Zupan. In *Journal of Knot Theory and its Ramifications*.
[doi:10.1142/S0218216523500414](#)

Student Advising and Mentoring

- August 2025–May 2026 **Parker Smiley, UCM**
Master's Thesis: *Vanishing Obstructions to Sliceness of Weaving Links*
- January 2026 – May 2026 **Bethany Harms, UCM**
Master's Project: *Polynomial Invariants of Knots and Links*
- Summer 2021 **Polymath REU Jr. 2021**
Mentored for an undergraduate research program with Alex Zupan on bridge trisections and knotted surfaces.



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Awards and Fellowships

April 2025

Mathematical Association of America Project NExT (Missouri Section)

Selected for a teaching fellowship through the Missouri section of the Mathematical Association of America.

Service to the Profession

April 2026

Kappa Mu Epsilon Awards Committee

Chair of Awards Committee for the 2026 Regional Convention of Kappa Mu Epsilon at Washburn University

December 2025 – Present

July 2025 – June 2028

Reviewer for *Algebraic & Geometric Topology* Mathematical Association of America Committee for Minority Participation in Mathematics (CMPM)

Member of the Mathematical Association of America CMPM, supporting national efforts to advance diversity, equity, and inclusion in mathematics.

April 2025 – March 2026

Vice Chair of Mathematical Association of America Missouri Section

Assisted the Chair in overseeing section activities.

March 2025

Kappa Mu Epsilon Awards Committee

Member of Awards Committee for the 47th Biennial Convention of Kappa Mu Epsilon

Selected Talks

March 2026

Telling the Warp from the Weft – Fiberings and Surgery in Dimension 4

University of Arkansas Topology Seminar

March 2026

Extending Fibrations of the 3-Torus and Applications to Torus Surgery in 4-Manifolds

American Mathematical Society Western Sectional, Boise State University

November 2024

Morse Theory in Dimensions One and Two

Kappa Mu Epsilon, University of Central Missouri

October 2023

Torus surgeries on the Hopf surface

American Mathematical Society Fall Central Sectional Meeting, Creighton University

March 2023

Group Deficiencies from a 4-manifolds perspective

Groups, Semigroups, and Topology Seminar, UNL

September 2022

The Casson-Gordon signature invariant and sliceness obstructions

Groups, Semigroups, and Topology Seminar, UNL

August 2022

Slice Knots and Classical Sliceness Obstructions

Graduate Students Talking Groups, Semigroups, and Topology Seminar, UNL

June 2022

Meier-Zupan Square Links and The Andrews-Curtis Conjecture

New Developments in Four Dimensions, University of Victoria

February 2022

A quest for residual finiteness: Geometrization and the word problem for 3-manifolds

Groups, Semigroups, and Topology Seminar, UNL

June 2021

A Geometric Introduction to Heegaard Splittings and Trisections

Graduate Online Seminar Series, Online



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Conference/Workshop Participation

April 2026	Kappa Mu Epsilon Regional Convention
March 2026	Mathematical Association of America, Missouri Section Meeting
March 2026	American Mathematical Society, Western Sectional
June 2025	Trisectors Workshop 2025
April 2025	Mathematical Association of America, Missouri Section Meeting
March 2025	Kappa Mu Epsilon National Convention
January 2025	Joint Mathematics Meeting
June 2024	Trisectors Workshop 2024
June 2022	New Developments in Four Dimensions
June 2022	Junior Trisectors Retreat
July 2021	Gauge Theory in Geometry and Topology, Summer Graduate School at MSRI
June 2021	Summer Trisectors Workshop 2021
December 2020	Winter Trisectors Workshop 2020
June 2020	Nearly Carbon Neutral Topology Conference
September 2019	Midwest Geometry Conference

Technologies and Software

- $\text{\LaTeX}$
- Desmos
- Word

- Python
- SageMath
- Excel