



Nick Meyer

Assistant Professor of Mathematics



Winona, MN



<https://nickmeyer.phd>



nick.meyer@winona.edu



[nick5435](#)



[nicholas-meyer-math](#)

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. Pongtanapaian. 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.

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.



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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

Reviewer for *Algebraic & Geometric Topology*

July 2025 – June 2028

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 Toplogy Seminar, UNL

September 2022

The Casson-Gordon signature invariant and sliceness obstructions

Groups, Semigroups, and Toplogy 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 Toplogy Seminar, UNL

June 2021

A Geometric Introduction to Heegaard Splittings and Trisections

Graduate Online Seminar Series, Online

Technologies and Software



Desmos



Word



SageMath



Excel



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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