



# Nicholas (Nick) Meyer

Assistant Professor of Mathematics

 <https://nickmeyer.phd>

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 [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

## Sample Courses

- |                         |                   |
|-------------------------|-------------------|
| Topology I and II       | Calculus I and II |
| Multivariable Calculus  | Number Theory     |
| Discrete Mathematics    | Graph Theory      |
| Foundations of Geometry | 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 DiagrAmerican Mathematical Society 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*

**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

  $\text{\LaTeX}$


 Desmos

 Markdown

 Perl


 Word

 Python

 Mathematica

 R

 WeBWorK

 Excel



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## Conference/Workshop Participation

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