

Curriculum Vitae

Emma H. Pickard

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<https://sites.google.com/view/pickmath/home>

EDUCATION

Wake Forest University May 2023 M.S. Mathematics

University of North Carolina at Chapel Hill May 2021 B.A. Mathematics

Minored in Education (UNC BEST program and NC Teaching Fellow)

HONORS AND AWARDS

Graduate Teaching Assistantship, Wake Forest University April 2020

North Carolina Teaching Fellow, University of North Carolina at Chapel Hill Aug 2019

UNC BEST Program, University of North Carolina at Chapel Hill Jan 2020

SECU People Helping People Scholarship, UNC at Chapel Hill Aug 2019

Burlington Women's Club Scholarship, UNC at Chapel Hill, Aug 2019

Funded speaker and attendee, University of Georgia Topology Conference June 2022

Funded attendee, AWM BRIDGES conference at the University of Utah, June 2022

Funded summer researcher, Wake Forest University June 2022

Invited alumni speaker, Alamance Community College February 2023

RESEARCH

Research Interests:

Algebraic Combinatorics, Algebraic Topology (specifically Khovanov Homology, quantum knot invariants)

Research Experience:

Master's Thesis on Khovanov Homology (Aug 2021-Present)

Advisor: Hugh Howards, additional guidance from postdoc Thomas Kindred

Reading Course on Algebraic Combinatorics (Fall 2022, Spring 2023)

Instructor: Sarah Mason

Directed Reading Program: *The Knot Book* (Aug 2020-May 2021)

Advisor: Andrew Adair, presented on polynomial invariants and their derivation

Work on P-Adic Numbers and Projective Geometry (Spring 2021)

Advisor: Andrey Smirnov

PROFESSIONAL EXPERIENCE

Graduate Teaching Assistant August 2021 – Present Math and Stats Center, *Wake Forest University*

- Gained experience explaining mathematical material clearly to students through tutoring sessions as well as worked alongside professors as a grader and by leading study sessions for Calculus I, Linear Algebra, Calc III

Executive Curriculum Coordinator Summer 2022 – Freedom School, *Wake Forest University*

- Responsible for developing, coordinating, and overseeing the math curriculum for the five weeks of the Freedom School Summer Immersion Program for Title I students

grades K-8

Graduate Student Liaison October 2022 – Present, *Wake Forest University*

- Served as a representative of the math graduate program in faculty meetings, department events, and facilitated efforts intended to create a greater sense of community

Empowering Women of Mathematics Conference Head Organizer March 2023

- Organized a conference involving mathematicians from North Carolina, Virginia, South Carolina, and Georgia focused on empowering women and other underrepresented groups within mathematics

Student Teacher Spring 2021 – Alamance Burlington Early College, *University of North Carolina at Chapel Hill*

- Taught students of all grade levels at the Alamance Burlington Early College through three classes of Math 2, and one Discrete Mathematics course
- Was responsible for lesson planning and administering said lessons throughout the semester under the guidance of Kevin Scharen, and developing the EdTPA profile for potential NC educators (passed)

CONFERENCES

AWM BRIDGES, *University of Utah* (June 2022)

Annual Topology Conference, *University of Georgia* (June 2022)

Topic: Quantum Knot Invariants

Gave a talk on non-zero classes in Khovanov Homology

Triangle Area Graduate Mathematics Conference, (March 2022)

Conference for Undergraduate Women in Mathematics, *University of Nebraska-Lincoln* (January 2021)

Nearly Carbon Neutral Geometric Topology Conference, (September 2022)

Triangle Lectures in Combinatorics, (December 2022)

Triangle Area Graduate Mathematics Conference, (March 2023)

PROFESSIONAL ORGANIZATIONS AND OUTREACH

American Mathematical Society October 2021 – Present

Wake Forest University Chapter, Member

Association for Women in Mathematics August 2019 – Present

Wake Forest University, Officer at Large (Aug 2022 – Present)

University of North Carolina at Chapel Hill, Social Media Officer

EXTRACURRICULARS

AWM Brown Bag Talk Spring 2022, Fall 2022 *Wake Forest Chapter*, Gave two presentations on the derivation of polynomial knot invariants

AWM Math Career Panelist Fall 2022 *Wake Forest Chapter*, Served as a speaker on a panel regarding career paths in mathematics and pursuing graduate studies

FUTURES Program Spring 2021 *NC Science Festival through the Morehead Planetarium*, STEM participant

UNC Splash! Educator *University of North Carolina at Chapel Hill*, January 2020

Alamance Community College Girls Take Over Tech Volunteer, Fall 2018 and 2019

Last Updated: March 4th, 2023