JEFFREY AYERS

Department of Mathematics- UNC Chapel Hill
Phillips Hall ⋄ Chapel Hill, NC, 27599
jeff97@live.unc.edu

EDUCATION

University of North Carolina, Chapel Hill, NC *August 2019-Present*
Ph.D. in Mathematics
Advisor: Andrey Smirnov

University of Massachusetts, Amherst, MA *May 2019*
B.S. in Mathematics

RESEARCH

Preprints

- **J. Ayers**, H. Dinkins"Wreath Macdonald polynomials, quiver varieties, and quasimap counts" `https://arxiv.org/abs/2410.07399`
- **J. Ayers**, A. Smirnov "Capped Vertex Functions for $\mathrm{Hilb}^n(\mathbb{C}^2)$" `https://arxiv.org/abs/2406.00498`- *Submitted for publication*

TEACHING EXPERIENCE

Instructor of Record, UNC Chapel Hill

- Math 521: Advanced Calculus I, Summer 2023
- Math 233: Multivariable Calculus, Summer 2023
- Math 381: Discrete Mathematics, Fall 2022
- Math 130: Precalculus, Spring 2022
- Math 130: Precalculus, Fall 2021

Teaching Assistant, UNC Chapel Hill

- Math 681: Graduate Topology, Fall 2023
- Math 677: Graduate Algebra II, Spring 2024
- Math 676: Graduate Algebra I, Fall 2023
- Math 548: Combinatorics, Spring 2022
- Math 547: Linear Algebra, Spring 2020
- Math 534: Elements of Modern Algebra, Spring 2024
- Math 521: Advanced Calculus I, Summer 2022, Fall 2022, Spring 2023
- Math 381: Discrete Math, Fall 2019, Summer 2022
- Math 119: Intro to Mathematical Modeling, Summer 2020

Recitation Leader, UNC Chapel Hill

- Math 233: Calculus 3, Fall 2020, Fall 2023
- Math 233H: Calculus 3 Honors, Fall 2020
- Math 231: Calculus 1, Spring 2020

AWARDS

UNC Summer Research Fellowship *Summer 2024*

Finalist for the Linker Award
Nominated for the best graduate student instructor *Fall 2022-Spring 2023*

PROFESSIONAL SERVICE

UNC Science Fair Volunteer
Volunteered at a weekend science fair for local families to give demonstrations on Knot Theory and Minimal Surfaces *Spring 2024*

Co-organized Geometric Representation Theory Reading Groups
Organized reading groups on Equivariant Cohomology, Nakajima Quiver Varieties, and Stable Envelopes *Spring 2023-Fall 2023*

UNDERGRADUATE MENTORSHIP EXPERIENCE

Directed Reading Program Advisor
Lie Groups and Lie Algebras *Spring 2024*
Basic Category Theory *Fall 2023*

SEMINAR TALKS

Triangle Area Graduate Mathematics Conference
Title: Capped Vertex Functions with Descendants for $\mathrm{Hilb}^n(\mathbb{C}^2)$ *Spring 2024*

UNC junior Geometric Methods in Representation Theory
Title: What is Equivariant Cohomology? *Spring 2023*

UNC Graduate Student Mathematics Association
Title: Introduction to Equivariant Cohomology *Spring 2023*

CONFERENCES ATTENDED

Summer School in Geometric Representation Theory
MIT *June 2023*
Categorical Methods in Representation Theory and Quantum Topology
University of Virginia *April 2022*
SageDays@ICERM: Combinatorics and Representation Theory
Brown University *July 2018*