

Nathan Louie

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RESEARCH INTEREST

I am currently interested in surfaces in 4-manifolds, particularly on the Freedman-Quinn, Dax, and Stong invariants.

EDUCATION

University of Texas Austin Austin, TX
Doctor of Philosophy in Mathematics Aug. 2024 - Present

University of Washington: 3.95 Seattle, WA
Bachelor of Science in Mathematics with Distinction
Honor Thesis: "Chern-Gauss-Bonnet Theorem"
Bachelor of Science in Computer Science Sept. 2021 - June 2024

TALKS GIVEN

University of Texas Austin

Lightbulb Smoothing for Surfaces (Anthony Conway seminar) Fall 2025

Introduction to the Square Sum Move (Cerf theory learning seminar) Fall 2025

TEACHING

Graduate Teaching Assistant University of Texas Austin, 2024 - Present

M408D: Sequences, Series, and Multivariable Calculus Fall 2025

M408K: Differential Calculus Spring 2026

AWARDS AND HONORS

Dean's Strategic Fellowship University of Texas Austin, 2024 - 2029

Wisniewski Endowed Scholarship University of Washington, 2024

BAVA Scholarship University of Washington, 2021 - 2024

Washington State Opportunity Scholarship University of Washington, 2021 - 2024

CONFERENCES AND SUMMER SCHOOLS

Virginia Topology Conference University of Virginia - Charlottesville, VA, December 2025

Knots, Groups, and Manifolds UQAM - Montreal, Canada, August 2025

Modern Tools in Low-Dimensional Topology ICTP - Trieste, Italy, June 2025

Georgia International Topology Conference University of Georgia - Athens, GA, May 2025

Grad. Student Topology & Geometry Conference Indiana University - Bloomington, IN, April 2025

South Central Topology Conference IV Texas A&M University - College Station, TX, March 2025

Georgia Topology Summer School University of Georgia - Athens, GA, May 2024

Summer School on Dynamical Systems Northwestern University - Evanston, IL, June 2023

SERVICES AND OUTREACH

Mentor, Directed Reading Project University of Texas Austin, 2024 - Present

Fall 2024: Advay V. (Applied Topology)

Spring 2025: Allison P. (Knotted Surfaces)

Summer 2025: Ishan G. (Differential Geometry)

Fall 2025: Nathan R. (Khovonov Homology)

Volunteer, Sunday Morning Math Group University of Texas Austin, 2024 - Present

Panelist, Meet a Mathematician University of Washington, 2024

Judge, Math Olympiad University of Washington, 2023 - 2024, 2023

Mentor, Undergraduate Reading Group University of Washington, 2022 - 2024

Mentored advanced undergraduate students on graduate-level math courses.