Matthew Scalamandre

Contact Information

Department of Mathematics
University of Notre Dame
255 Hurley Hall
Notre Dame, IN 46556 USA

Research Interests

Geometric group theory, group cohomology, arithmetic and S-arithmetic groups, Bieri-Eckmann duality, buildings, algebraic K-theory, algebraic number theory.

Education

University of Notre Dame

Ph.D. Candidate, Mathematics (expected May 2024)

- Advisor: Andrew Putman

University of Chicago

B.S. in Mathematics, June 2019

With general and departmental honors

Papers

1. *A Solomon-Tits Theorem for Rings.* Preprint.

Honors and Awards

2019–2024	Arthur J. Schmitt Leadership Fellowship University of Notre Dame
2015–2019	Dean's List, University of Chicago
2015–2019	National Merit Scholar

Talks:

A Solomon-Tits Theorem for Rings — September 2023
University of Oklahoma Geometry and Topology Seminar

A Solomon-Tits Theorem for Rings — September 2023
Purdue Topology Seminar

A Solomon-Tits Theorem for Rings — July 2023
Stability in Topology, Arithmetic, and Representation Theory

Expository Talks:

Subgroups of Free Groups are Free — August 2023
Notre Dame Math Graduate Orientation

Poincaré Duality for Groups — April 2023
Notre Dame Graduate Student Topology Seminar

Word Problems and Geometry — April 2023
Notre Dame Graduate Student Logic Seminar

Unipotent Representations and Where to Find Them — April 2023
Notre Dame Graduate Student Algebra Seminar

Characteristic Classes of Surface Bundles — October 2022
Notre Dame Graduate Student Topology Seminar

Amenable Groups — October 2022

Notre Dame Graduate Student Logic Seminar

Morse Theory — September 2022
Notre Dame Graduate Student Seminar

Minicourse (4 talks): *Groups acting on the Circle* — Fall 2021
Notre Dame Graduate Student Topology Seminar

Homological Stability for Arithmetic Groups — April 2021
Notre Dame Graduate Student Topology Seminar

Group Cohomology and $SL_n(Z)$ — November 2020
Notre Dame Graduate Student Topology Seminar

Wall's Finiteness Obstruction — October 2019
Notre Dame Graduate Student Topology Seminar

An Introduction to Equivariant Cohomology — August 2018
University of Chicago Mathematics REU

Seminars Organized

Notre Dame Graduate Student Topology Seminar — Fall 2021

University of Chicago Undergraduate Math Club — Fall 2018-Spring 2019

Teaching Experience

Fall 2023	Teaching Assistant, Honors Calculus 1
Fall 2022	Teaching Assistant, Principles of Calculus
Spring 2022	Instructor, Calculus B
Fall 2021	Teaching Assistant, Calculus III
Spring 2021	Teaching Assistant, Linear Algebra and Differential Equations
Fall 2020	Teaching Assistant, Calculus A

Mentorship

Mentor for Notre Dame Summer Research Opportunities Program — Summer 2022

Student:
- Tomás Aguilar-Fraga: *A Computational Investigation into the Representation Theory of the Mapping Class Group*

Mentor for University of Chicago Mathematics REU — Summer 2020

Students:
- Vivek Sasse: *Classification of the 17 Wallpaper Groups*
- Cathy Wang: *The Lovasz Local Lemma, k-Colorings, and Applications in Graph Theory*

Conferences Attended

Stability in Topology, Arithmetic, and Representation Theory — July 2023
Purdue University

Stability in Topology, Arithmetic, and Representation Theory — March 2022
Purdue University

Cohomology of Arithmetic Groups — October 2021
Banff International Research Center

Joint Mathematics Meetings — January 2021
Online

Midwest Topology Seminar — October 2019
University of Chicago

Undergraduate Research Experience

University of Chicago Mathematics REU — Summer 2018
Expository Paper: Bredon Cohomology and the Conner Conjecture

Reading and Research course with Prof. Peter May — Fall 2017
Expository Paper: Brown Representability

University of Chicago Mathematics REU — Summer 2017
Expository Paper: Harmonic Analysis on LCA Groups

Extracurricular Activities

University of Chicago Math Club — 2016-2019
President, 2018-2019

Proficiencies

Languages: English, Mandarin, Italian
Programming Languages: C, Python, Lisp, Sage