Alison Rosenblum

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Research Interests

O-minimality and Real Algebraic Geometry

Education

Purdue University (West Lafayette, IN, August 2015 - present)
Candidate for Doctor of Philosophy in Mathematics (GPA 3.99/4.0)

Wisconsin Lutheran College (Milwaukee, WI, August 2011 - May 2015)
Bachelor of Science in Mathematics; Minor in German (Summa cum Laude, GPA 3.9/4.0)

Teaching Experience

Graduate Teaching Assistant (Purdue University, 2015 - present)

- Spring 2023: Math for Elementary Teachers I (Numbers and Operations)
  Prepare activities, promote discussion, grade projects and exams

- Fall 2022: Bridge to Analysis Recitation Instructor
  Graduate course; led problem session and graded assignments

- Spring 2022: Math for Elementary Teachers III (Geometric Reasoning)
  Prepared activities, promoted discussion, graded projects and exams

- Fall 2021: Math Resource Room Supervisor
  Oversaw operations and assisted students in Precalculus and Applied Calculus I and II

- Summer 2021: Calculus I Coordinator and Co-instructor
  Wrote course-wide exams, collaborated to prepare lectures and teach new material

- Spring 2019 - Spring 2020: IMPACT Recitation Instructor, Calculus I and II
  Facilitated group work in active learning setting, led recitations

- Summer 2019: Coordinator, Real Analysis Qualifying Exam Prep Course
  Graduate course; developed problem sets and oversaw class discussion

- Spring 2018, Fall 2018: Applied Calculus I Instructor
  Prepared lectures and taught new material, assisted with exam writing

- Fall 2017: Precalculus Instructor
  Prepared lectures and taught new material

- Summer 2017: Calculus II Co-Instructor
  Collaborated to prepare lectures and teach new material

- Fall 2015, Spring 2017: Calculus I Recitation Instructor
  Led discussion on homework problems and reviewed material, wrote and graded quizzes

Calculus Tutor (Wisconsin Lutheran College Center for Academic Excellence, 2012 - 2015)
Worked individually with Calculus students, coordinated and led group review sessions

Papers

In Preparation

- Saugata Basu and Alison Rosenblum. Equivariance in approximation by compact sets.
  (available upon request)

∿ Saugata Basu and Alison Rosenblum. Vandermonde varieties in type B.
(available upon request)

Selected Presentations

Vandermonde Varieties in Type B
New Directions in Real Algebraic Geometry, Oberwolfach, March 2023
Purdue Model Theory and Applications Seminar, February 2023

A Tourist's Guide to O-minimality
Rose-Hulman Institute of Technology Mathematics Seminar, October 2022
MAA Indiana Section Meeting, September 2021

Safety Protocols for the Cartography of Lands Unknown, Fantastic, and Symmetric
Student Colloquium, Purdue University, April 2022

Symmetry and Approximation by Compact Sets
Student Colloquium, Purdue University, October 2021

Monotonicity and Totally Nonnegative Spaces Lightening Talk
Symmetry, Randomness, and Computations in Real Alg Geometry, ICERM, August 2020

Monotonicity and Totally Nonnegative Spaces
Graduate Research Day, Purdue University, November 2019

Introduction to Model Theory
Purdue O-minimal Geometry/Hodge Theory Seminar, August 2019

Honors and Awards

∿ Excellence in Teaching Award Purdue University Department of Mathematics (2022)
∿ Purdue Research Foundation Summer Research Grant (2020)
∿ Ross Fellowship (2016)
∿ Carl Cowen Exceptional Promise Scholarship (2015)
∿ Gary Sorensen Memorial Endowed Scholarship (2014)
∿ Nicolas Bourbaki Scholarship (2013)
∿ Freshman Honors in Mathematics (2012)
∿ Presidential Scholarship Wisconsin Lutheran College (2011)
∿ National Merit Finalist (2010)

Workshop and Conference Attendance

New Directions in Real Algebraic Geometry
Mathematisches Forschungsinstitut Oberwolfach, Germany, March 2023

Real Algebraic Geometry
CIRM, Marseille, France, October 2022

Topics in Real and Tropical Algebraic Algebraic Geometry
Nordfjordeid, Norway, June 2022

AMS Central Sectional Meetings
Purdue University (held virtually), May 2022
University of Wisconsin Madison, September 2019

MAA Indiana Section Meeting
Virtual Event, September 2021
University of Indianapolis, April 2019

Symmetry, Randomness, and Computations in Real Algebraic Geometry
ICERM, August 2020 (held virtually)

Further Skills

LaTeX, python, C++, html, Brightspace LMS, ADA proctoring

Service and Activities

- Graduate Representative, Purdue Department of Mathematics (2020 - 2021)
- Incoming TA Screening Assistant (Fall 2020)
- Association for Women in Mathematics, Purdue Chapter (Treasurer, 2017 - present)
- Bridge to Research Seminar Coordinator (2017 - 2018)
- Purdue Symphony and String Orchestras (2015 - present)
- Wisconsin Lutheran College Math Club (Vice President, 2013 - 2015)
- Wisconsin Lutheran College Chamber Ensemble (2011 - 2015)