Alexander Wilson

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Employment

Oberlin College, *Visiting Assistant Professor.*   **Sep 2023–**

Education

Dartmouth College.   **Sep 2018–Jun 2023**
- Ph.D., Mathematics
- Thesis Advisor: Rosa Orellana

Michigan State University.   **Sep 2014–May 2018**
- Bachelor of Science in Advanced Mathematics
- Minor in German

Publications

Categorifying Restriction Coefficients, *In Progress.*

Coloring Groups (with Ben Adenbaum), *Submitted.*

A Super Multiset Insertion Algorithm and a Mixed Multiset Partition Algebra, *Submitted.*

A Diagram-Like Basis for the Multiset Partition Algebra, *Algebraic Combinatorics (to appear).*

Closed Forms of Recursive Polynomials and Applications (with Michelle Haver, Kathleen Lee, William McDermott, Wei-Hsuan Yu and Aklilu Zeleke), *Ars Combinatoria, 142 (2019), 175-195.*

Presentations

Invited Conference Talks

Special Session on Research Community in Combinatorics, *Joint Math Meetings*, Boston, MA.   **Jan 2023**

Session on Algebraic Combinatorics and Representation Theory, *Winter Meeting of the CMS*, Toronto, ON.   **Dec 2022**

Young Voices in Combinatorics, *AMS 2022 Fall Eastern Sectional Meeting*, Amherst, MA.   **Oct 2022**

Invited Seminar Talks

University of Georgia at Athens, *Algebra Seminar.*   **January 2024**

The Ohio State University, *Quantum Symmetries Seminar.*   **January 2024**

Cleveland State University, *Colloquium.*   **October 2023**

UW Milwaukee, *Algebra Seminar.*   **Apr 2023**

Washington University in St. Louis, *Combinatorics Seminar.*   **Mar 2023**

UMass Amherst, *Discrete Math Seminar.*	**Mar 2023**
Michigan State University, *Combinatorics and Graph Theory Seminar.*	**Sep 2022**
University of Vermont, *Combinatorics Seminar.*	**May 2022**
Dartmouth College, *Combinatorics Seminar.*	**Feb 2022**

Other

A Diagram-Like Basis for the Multiset Partition Algebra, *Contributed Talk*, Spectra LGBTQ+ in Mathematics Conference.	**Aug 2021**
Schur-Weyl Duality and Centralizer Algebras, *Graduate Student Seminar (virtual)*, Dartmouth College.	**Oct 2020**
Building Character(s): Representation Theory of Finite Groups, *Graduate Student Seminar*, Dartmouth College.	**Feb 2020**
Classic Bases of Symmetric Functions and Transition Matrices, *Combinatorics Seminar*, Dartmouth College.	**Nov 2019**
Some Bases of Symmetric Functions, *Graduate Student Seminar*, Dartmouth College.	**Oct 2019**
Manifolds with Boundary, *Geometry and Topology Student Seminar*, Michigan State University.	**Sep 2017**
Obtaining a Projective Toric Variety from a Polytyope, *Seminar on Toric Varieties*, Michigan State University.	**Jun 2017**
REU Symposium, *Poster Session*, Arlington, VA.	**Oct 2016**
Mathfest, Columbus, OH.	**Aug 2016**

Teaching

Oberlin College, *Instructor.*   **Sep 2023–**
- Math 133: Calculus I (Spring 2024)
- Math 220: Discrete Mathematics (Fall 2023)
- Math 234: Differential Equations (Fall 2023)

Dartmouth College, *Instructor.*   **Sep 2020–Jun 2023**
- Math 22: Linear Algebra with Applications (Fall 2022)
- Math 3: Calculus (Fall 2021)
- Math 1: Introduction to Calculus (virtual, Fall 2020)

Dartmouth College, *Teaching Assistant.*   **Sep 2018–Jun 2020**
- Math 10: Introductory Statistics (Spring 2020, online over Zoom)
- Math 11: Accelerated Multivariable Calculus (Fall 2019)
- Math 8: Calculus of Functions of one and Several Variables (Winter 2019)
- Math 1: Introduction to Calculus (Fall 2018)

Michigan State University, *Math Learning Center Supervisor.*   **Sep 2015–May 2018**
- Managed a center of around twenty tutors, conducting evaluations and mentoring tutors on effective tutoring techniques.

Michigan State University, *Undergraduate Learning Assistant.*   **Sep 2015–May 2018**
- Taught a recitation of around twenty students in business calculus, calculus II, honors calculus III, and honors linear algebra.

Lyman Briggs College, *Worksheet Author.*   **Summer 2017**

- Composed worksheets for a biology-based calculus course which connected calculus concepts to biology through mathematical modelling.

Service

K-12 Outreach

Co-Organizer, *Sonia Kovalevsky Math Day at Dartmouth.*   **Apr 2022**

Camp Leader, *Exploring Mathematics at Dartmouth: Cryptography and Graph Theory (virtual).*   **Summer 2020**

Graduate Leader, *Sonia Kovalevsky Math Day at Dartmouth.*   **Apr 2019**

Dartmouth Mathematics Directed Reading Program

Mentor, *Magical Mathematics by Diaconis and Graham.*   **Winter 2023**

Mentor, *Integer-Point Enumeration in Polyhedra by Beck and Robins.*   **Spring 2022**

Mentor, *Representation Theory of Finite Groups by James and Liebeck.*   **Winter 2020**

Other

Co-facilitator, *Dartmouth Math Department Racial Justice Discussion Group.*   **Aug 2020–May 2021**

Honors and Awards

Project NExT Green '23 Cohort.   **2023-2024**

TA Award for Excellence in Teaching, *MSU Mathematics Department.*   **Apr 2017**

Richard E. Phillips Memorial Scholarship, *MSU Mathematics Department.*   **Apr 2017**

Leroy G. Augenstein Award, *MSU College of Natural Science.*   **Apr 2017**

Languages

Natural

German: Proficient

Programming

Mathematica: Proficient

Python/Sage: Proficient