

Alexander Wilson

awilson6@oberlin.edu

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

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

A Diagram-Like Basis for the Multiset Partition Algebra, *Submitted*.

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

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 , <i>Graduate Student Seminar (virtual)</i> , Dartmouth College.	Oct 2020
Building Character(s): Representation Theory of Finite Groups , <i>Graduate Student Seminar</i> , Dartmouth College.	Feb 2020
Classic Bases of Symmetric Functions and Transition Matrices , <i>Combinatorics Seminar</i> , Dartmouth College.	Nov 2019
Some Bases of Symmetric Functions , <i>Graduate Student Seminar</i> , Dartmouth College.	Oct 2019
Manifolds with Boundary , <i>Geometry and Topology Student Seminar</i> , Michigan State University.	Sep 2017
Obtaining a Projective Toric Variety from a Polytope , <i>Seminar on Toric Varieties</i> , Michigan State University.	Jun 2017
REU Symposium , <i>Poster Session</i> , Arlington, VA.	Oct 2016
Mathfest , Columbus, OH.	Aug 2016

Teaching

Oberlin College , <i>Instructor</i> .	Sep 2023–
<ul style="list-style-type: none"> Math 220: Discrete Mathematics (Fall 2023) Math 234: Differential Equations (Fall 2023) 	
Dartmouth College , <i>Instructor</i> .	Sep 2020–Jun 2023
<ul style="list-style-type: none"> Math 22: Linear Algebra with Applications (Fall 2022) Math 3: Calculus (Fall 2021) Math 1: Introduction to Calculus (virtual, Fall 2020) 	
Dartmouth College , <i>Teaching Assistant</i> .	Sep 2018–Jun 2020
<ul style="list-style-type: none"> 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 , <i>Math Learning Center Supervisor</i> .	Sep 2015–May 2018
<ul style="list-style-type: none"> Managed a center of around twenty tutors, conducting evaluations and mentoring tutors on effective tutoring techniques. 	
Michigan State University , <i>Undergraduate Learning Assistant</i> .	Sep 2015–May 2018
<ul style="list-style-type: none"> Taught a recitation of around twenty students in business calculus, calculus II, honors calculus III, and honors linear algebra. 	
Lyman Briggs College , <i>Worksheet Author</i> .	Summer 2017
<ul style="list-style-type: none"> Composed worksheets for a biology-based calculus course which connected calculus concepts to biology through mathematical modelling. 	

Service

K-12 Outreach

Co-Organizer , <i>Sonia Kovalevsky Math Day at Dartmouth</i> .	Apr 2022
Camp Leader , <i>Exploring Mathematics at Dartmouth: Cryptography and Graph Theory (virtual)</i> .	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