

KACEY AURUM

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EDUCATION

The Ohio State University PhD Mathematics, Pure Track	<i>2026 (expected)</i>
The Ohio State University MS Mathematics	<i>2023</i>
Barrett, the Honors College at Arizona State University BS Mathematics, BS Physics	<i>2020</i>

RESEARCH

Proofs and Generalizations of the Jordan Curve Theorem <i>Advisors: Dr. Matthias Kawski, Dr. Julien Paupert</i>	2018 - 2020 <i>Arizona State University</i>
<ul style="list-style-type: none">· Studied the history and proofs of the Jordan Curve theorem, both algebraic and elementary.· Proved the Jordan curve theorem from an elementary perspective (in the style of J.W. Alexander).· Proved the Jordan-Brouwer theorems from an algebraic perspective (using homology).	

AWARDS

Phil Huneke Distinguished Graduate Teaching Associate Award <i>Ohio State University Department of Mathematics</i>	2023
Graduate Student Award for Distinguished Service <i>Ohio State University College of Arts and Sciences</i>	2023
Tibor Radó Graduate Fellowship <i>Ohio State University Department of Mathematics</i>	2020-2021
Outstanding Presentation Award <i>Arizona State University Sundial Project</i>	2020
Presentation: The Structures You Thought You Knew: No-Nonsense Topology	

CONFERENCE PRESENTATIONS

Knots in Chaos: Untangling the Lorenz Attractor <i>Midwest Dynamical Systems Early Career Conference</i>	2022 <i>Talk</i>
The Structures You Thought You Knew: No-Nonsense Topology <i>Sundial Conference, Virtual</i>	2020 <i>Talk</i>
Topological Proofs of Theorems in Graph Theory <i>Barrett Celebrating Honors Symposium, Virtual</i>	2020 <i>Poster</i>

OTHER PRESENTATIONS

How to Make a Professional Webpage <i>Technology Mini-Workshop Series</i>	2022 <i>Talk</i>
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Field Extensions <i>Ross Mathematics Summer Program, Ohio Dominican University</i>	2022 <i>Talk</i>
Algebra and Topology, But Not Algebraic Topology <i>Ross Mathematics Summer Program, Ohio Dominican University</i>	2022 <i>Talk</i>
An Overview of Tropical Geometry <i>Student Algebraic Geometry Seminar, Ohio State University</i>	2022 <i>Talk</i>

CONFERENCES AND WORKSHOPS ATTENDED (NO PRESENTATION)

Western Algebraic Geometry Symposium (WAGS) <i>University of California Riverside</i>	2022
Midwestern Arithmetic Geometry and Number Theory Conference Series <i>University of Illinois Chicago</i>	2022
Algebraic Geometry Northeastern Series (AGNES) <i>Brown University</i>	2022
$\text{Spec}(\overline{\mathbb{Q}})$ <i>Fields Institute</i>	2022
LGBTQ+ Math Day <i>Fields Institute, Virtual</i>	2021

CONFERENCES AND SEMINARS ORGANIZED

Cycle Conference <i>Ohio State University</i>	2023 <i>Organizer</i>
Technology Mini-Workshop Series <i>Ohio State University</i>	2022 <i>Organizer</i>
Cycle Conference <i>Ohio State University</i>	2022 <i>Organizer</i>

LEADERSHIP EXPERIENCE

LGBTQ+ in Math Alliance Committee, Ohio State University <i>Member</i>	2022-Present
Cycle Committee, Ohio State University <i>Chair</i>	2021-Present
Diversity and Departmental Climate Committee, Ohio State University <i>Graduate Student Representative</i>	2020-Present
Polaris Leadership Committee, Ohio State University <i>Member</i>	2020-Present
Council of Graduate Students, Ohio State University <i>Department of Mathematics Representative</i>	2020-2021
Underrepresented Mathematician Panel <i>Organizer</i>	2021

Undergraduate Involvement in Research Panel, Virtual
Organizer

2020

MENTORING EXPERIENCE

- Individual Mentoring** 2023-Present
Cycle, Ohio State University *Mentor*
- Project: Understanding the Mirror Theorem
- Individual Mentoring** 2022-Present
Graduate Peer Mentoring, Ohio State University *Mentor*
- Ross Mathematics Summer Program** 2022
Ohio Dominican University (paid position) *Senior Counselor*
- Mentored a group of five high school students learning number theory.
- H.S.M. Coxeter, “Regular Polytopes”** 2021
Directed Reading Program, Ohio State University *Mentor*
- Individual Mentoring** 2021
Polaris, Ohio State University *Mentor*
- Project: Constructing the Hyperbolic Plane (SP 2021)
- Group Mentoring** 2021
Polaris, Ohio State University *Mentor*
- Project: Constructing Nonorientable Surfaces (AU 2020)

TEACHING EXPERIENCE

- MATH 1125: Mathematics for Elementary School Teachers I** AU 2023
Ohio State University *Teaching Associate*
- MATH 1193: Cycle Mentoring** SP 2023
Ohio State University *Course Coordinator/Lecturer*
- MATH 2173: Engineering Mathematics B** SP 2023
Ohio State University *Teaching Associate*
- MATH 1193: Cycle Mentoring** AU 2022
Ohio State University *Course Coordinator/Lecturer*
- MATH 1131: Calculus for Business I** AU 2022
Ohio State University *Teaching Associate*
- MATH 1193: Cycle Mentoring** SP 2022
Ohio State University *Course Coordinator/Lecturer*
- MATH 1193: Cycle Mentoring** AU 2021
Ohio State University *Course Coordinator/Lecturer*
- MATH 1131: Calculus for Business I** AU 2021
Ohio State University *Teaching Associate*

EMPLOYMENT HISTORY (NON-TEACHING)

Department of Mathematics <i>Ohio State University</i>	2022-Present <i>Graduate Teaching Assistant (grader)</i>
Ross Mathematics Summer Program <i>Ohio Dominican University</i>	2022 <i>Senior Counselor</i>
Mathematics Tutoring <i>Private Individual</i>	2020-2022 <i>Tutor</i>
Department of Mathematics <i>Ohio State University</i>	2020-2021 <i>Graduate Research Assistant</i>

ADDITIONAL OUTREACH

COSI SciFest 2023 <i>Center of Science and Industry</i>	2023 <i>Volunteer</i>
English as a Survival Language Course <i>Mid-Ohio Workers Association</i>	2022 <i>Volunteer</i>
COSI SciFest 2022 <i>Center of Science and Industry</i>	2022 <i>Volunteer</i>

ORGANIZATIONS

Cycle Mentoring <i>Ohio State University</i>	2021-Present
Polaris Mentoring <i>Ohio State University</i>	2020-Present
Association of Women in Mathematics <i>Ohio State University</i>	2020-Present
Mathematics Graduate Student Association <i>Ohio State University</i>	2020-Present
American Mathematical Society	2017-Present
SUBgroups	2020-2021

Current as of August 2023.