
EMPLOYMENT

- 2022-present **Lafayette College**, Assistant Professor
2020-2022 **Swarthmore College**, Visiting Assistant Professor
2019-2020 **Colby College**, Visiting Assistant Professor
2018-2019 **Grinnell College**, Visiting Assistant Professor

EDUCATION

- 2018 **Ph.D. Mathematics**, University of California, Santa Barbara
Thesis: *The Geometry and Topology of the Dual Braid Complex*
Advisor: Jon McCammond
2014 **M.A. Mathematics**, University of California, Santa Barbara
2012 **B.A. Mathematics with Honors**, Grinnell College

AWARDS AND HONORS

- 2021-2022 **MAA Project NExT Fellow** (Gold '21)
2020 **President's Fund for Racial Justice**, Swarthmore College
Course development grant for "Mathematics and Social Justice"
2018 **Excellence in Teaching Award**, UCSB Graduate Student Association
2017 **Outstanding Teaching Assistant**, UCSB Department of Mathematics
2012-2018 **Graduate Fellowship**, National Physical Sciences Consortium

PUBLICATIONS AND PREPRINTS

(mentored undergraduate coauthors denoted with an asterisk*)

7. **The Polyhedral Tree Complex**
Combinatorial Theory, 2-3 (2022)
6. **Geometric Combinatorics of Polynomials I: The Case of a Single Polynomial**
Journal of Algebra, 607-B (2022), with J. McCammond
5. **Boundary Braids**
Algebraic & Geometric Topology, 20-7 (2020), with J. McCammond, S. Witzel
4. **Critical Points, Critical Values, and a Determinant Identity for Complex Polynomials**
Proceedings of the American Mathematical Society, 148-12 (2020), with J. McCammond
3. **Undesired Parking Spaces and Contractible Pieces of the Noncrossing Partition Link**
Electronic Journal of Combinatorics, 25-1 (2018), with J. McCammond
2. **A Decomposition of Parking Functions by Undesired Spaces**
Electronic Journal of Combinatorics, 23-3 (2016), with M. Bruce*, M. Hlavacek*, R. Kudo*, I. Nicolas*
1. **Hankel Transforms of Linear Combinations of Catalan Numbers**
Journal of Integer Sequences, 14-11.5.1 (2011), with C. French, W. Qian, B. Saderholm

UNDERGRADUATE RESEARCHERS SUPERVISED

SWARTHMORE COLLEGE

2022 Stella Cohen, Andrew D. Harsh, and Spencer Park Martin

UNIVERSITY OF CALIFORNIA, SANTA BARBARA

2015 Melody Bruce, Max Hlavacek, Ryo Kudo, and Ian Nicolas

TEACHING EXPERIENCE

LAFAYETTE COLLEGE

Math 104 A World of Mathematics	<i>Spring 2023 (x2)</i>
Math 162 Calculus II	<i>Fall 2022</i>
Math 165 Calculus I+	<i>Fall 2023</i>
Math 351 Abstract Algebra I	<i>Fall 2023 (x2)</i>
Math 358 Topology	<i>Fall 2022</i>
Math 391 Independent Study (Group Theory for Physics)	<i>Fall 2023</i>

SWARTHMORE COLLEGE

Math 20 Mathematics and Social Justice	<i>January 2021</i>
Math 25 Single-Variable Calculus II	<i>Fall 2021 (x2)</i>
Math 27 Linear Algebra	<i>Fall 2020</i>
Math 67 Introduction to Modern Algebra	<i>Spring 2021 (x2), Spring 2022</i>
Math 77 Advanced Topics in Algebra (Geometric Group Theory)	<i>Spring 2022</i>
Math 93 Directed Reading (Reflection Groups and Coxeter Groups)	<i>Fall 2021</i>

COLBY COLLEGE

Math 121 Single-Variable Calculus	<i>Fall 2019 (x2)</i>
Math 122 Series and Multi-Variable Calculus	<i>Spring 2020 (x2)</i>
Math 253 Linear Algebra	<i>Spring 2020</i>

GRINNELL COLLEGE

Math 131 Calculus I	<i>Fall 2018 (x2)</i>
Math 133 Calculus II	<i>Fall 2018, Spring 2019</i>
Math 444 Senior Seminar (Geometric Group Theory)	<i>Spring 2019</i>

UNIVERSITY OF CALIFORNIA, SANTA BARBARA (INSTRUCTOR OF RECORD)

Math 4A Linear Algebra with Applications	<i>Summer 2016, Summer 2017</i>
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UNIVERSITY OF CALIFORNIA, SANTA BARBARA (TEACHING ASSISTANT)

Math 34A Calculus for the Life and Social Sciences (Head TA)	<i>Winter 2015</i>
Math 3A Calculus I	<i>Winter 2016</i>
Math 3B Calculus II	<i>Winter 2016</i>
Math 4A Linear Algebra with Applications	<i>Spring 2016, Spring 2017</i>
Math 6A Vector Calculus I	<i>Fall 2016</i>

Math 8 Transition to Higher Mathematics

*Fall 2013, Winter 2014, Fall 2014,
Spring 2015, Winter 2017, Spring 2018*

Math 108A Advanced Linear Algebra I

Spring 2014, Fall 2015, Fall 2017

SELECTED RESEARCH TALKS

INVITED TALKS (CONFERENCES AND COLLOQUIA)

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|------|---|---------------------------------|
| 2023 | Spring Topology and Dynamical Systems Conference
<i>Special Session on Geometric Group Theory</i> | <i>Rhodes College (virtual)</i> |
| 2022 | Summer@ICERM REU | <i>Providence, RI</i> |
| 2022 | Bi-College Math Colloquium | <i>Haverford College</i> |
| 2021 | AMS Spring Southeastern Sectional Meeting
<i>Special Session on Groups, Geometry, and Topology</i> | <i>Atlanta, GA (virtual)</i> |
| 2014 | Mathematics and Statistics Student Seminar | <i>Grinnell College</i> |

INVITED TALKS (SEMINARS)

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|------|---|--|
| 2023 | University of California, Santa Barbara | <i>Topology Seminar</i> |
| 2023 | University at Albany | <i>Algebra/Topology Seminar</i> |
| 2022 | Haverford College | <i>PATCH - Philadelphia Area Topology (Contact/Hyperbolic)</i> |
| 2022 | University of Pennsylvania (virtual) | <i>Deformation Theory Seminar</i> |
| 2022 | Temple University | <i>Geometry & Topology Seminar</i> |
| 2020 | Otto-von-Guericke-Universität Magdeburg (virtual) | <i>Algebra & Geometry Seminar</i> |
| 2019 | Georgia Institute of Technology | <i>Geometry & Topology Seminar</i> |
| 2018 | Brown University | <i>Geometry & Topology Seminar</i> |

CONTRIBUTED CONFERENCE TALKS

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| 2020 | Joint Mathematics Meetings
<i>AMS Special Session on The Geometry of Complex Polynomials
and Rational Functions</i> | <i>Denver, CO</i> |
| 2019 | Tech Topology Conference | <i>Atlanta, GA</i> |
| 2019 | Algorithms in Complex Dynamics and Mapping Class Groups | <i>Providence, RI</i> |
| 2019 | Tech Topology Conference | <i>Atlanta, GA</i> |
| 2019 | Tech Topology Conference | <i>Atlanta, GA</i> |
| 2019 | Tech Topology Conference | <i>Atlanta, GA</i> |
| 2019 | Topology Students Workshop | <i>Atlanta, GA</i> |

SERVICE

CONFERENCES AND SEMINARS

- 2022 **Session Co-Organizer** (*Teaching Undergraduate Topology*),
Nearly Carbon Neutral Geometric Topology Conference
- 2020-2022 **Colloquium Helper**, Swarthmore College
- 2018-2019 **Colloquium Organizer** (*Mathematics and Statistics Student Seminar*), Grinnell College
- 2013-2018 **Seminar Organizer** (*Discrete Geometry & Combinatorics Seminar*), UC Santa Barbara
- 2012-2017 **Seminar Co-Organizer** (*Hypatian Seminar*), UC Santa Barbara

DEPARTMENT TALKS

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|------|--|---------------------------|
| 2023 | Pi Mu Epsilon Reception Talk | <i>Lafayette College</i> |
| 2023 | Cryptography Competition Kickoff Talk: Diffie-Hellman Key Exchange | <i>Lafayette College</i> |
| 2022 | Mathematical Adventures and Diversions: Configuration Spaces | <i>Lafayette College</i> |
| 2021 | Interactive Math Colloquium | <i>Swarthmore College</i> |
| 2019 | New Math Faculty Colloquium | <i>Colby College</i> |

LAFAYETTE UNDERGRADUATE THESIS COMMITTEES

Brian Payne '23 (Music)

PEDAGOGICAL AND PROFESSIONAL DEVELOPMENT

- Winter 2018 **Mathlab Coordinator**, UC Santa Barbara
- 2016-2017 **Lead Teaching Assistant** (*Math Department TA Training*), UC Santa Barbara
- 2016 **Session Speaker** (*Campus-wide orientation for new teaching assistants*), UC Santa Barbara

DEPARTMENTAL SERVICE

- 2020-2022 **Community Building Helper**, Swarthmore College
- 2010-2012 **Committee Member** (*Student Educational Policy Committee, Mathematics*), Grinnell College

RESEARCH COMMUNITY

Journal Referee, Journal of Combinatorial Algebra, Proceedings of the AMS

Reviewer, Mathematical Reviews (x2)

OUTREACH

- 2013-2015 **Math Circle Instructor** (4 talks given), UC Santa Barbara

CONFERENCES AND WORKSHOPS ATTENDED

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|------|--|--------------------------------------|
| 2023 | Spring Topology and Dynamical Systems Conference | <i>(virtual)</i> |
| 2022 | Nearly Carbon Neutral Geometric Topology Conference | <i>(virtual)</i> |
| 2022 | MAA MathFest | <i>Philadelphia, PA</i> |
| 2021 | MAA MathFest | <i>(virtual)</i> |
| 2021 | Artin Groups, CAT(0) Geometry, and Related Topics | <i>Columbus, OH (virtual)</i> |
| 2021 | Perspectives on Artin Groups | <i>Edinburgh, Scotland (virtual)</i> |
| 2021 | AMS Spring Southeastern Sectional Meeting | <i>Atlanta, GA (virtual)</i> |
| 2020 | Joint Mathematics Meetings | <i>Denver, CO</i> |
| 2019 | Tech Topology Conference | <i>Atlanta, GA</i> |
| 2019 | Algorithms in Complex Dynamics and Mapping Class Groups | <i>Providence, RI</i> |
| 2018 | Tech Topology Conference | <i>Atlanta, GA</i> |
| 2018 | Young Geometric Group Theory VII | <i>Les Diablerets, Switzerland</i> |
| 2017 | Tech Topology Conference | <i>Atlanta, GA</i> |
| 2017 | Algebraic and Geometric Combinatorics of Reflection Groups | <i>Montréal, Canada</i> |
| 2017 | Young Geometric Group Theory VI | <i>Oxford, England</i> |
| 2017 | Topology Students Workshop | <i>Atlanta, GA</i> |

2016 Tech Topology Conference	<i>Atlanta, GA</i>
2016 MSRI Workshop - Geometry of Mapping Class Groups and $\text{Out}(\mathbb{F}_n)$	<i>Berkeley, CA</i>
2016 FPSAC (Formal Power Series and Algebraic Combinatorics)	<i>Vancouver, Canada</i>
2016 Topology Students Workshop	<i>Atlanta, GA</i>
2015 AMS Spring Western Sectional Meeting	<i>Las Vegas, NV</i>
2014 The Thin Manifold - Graduate Workshop	<i>Iowa City, IA</i>
2014 Joint Mathematics Meetings	<i>Baltimore, MD</i>
2013 A Day of Triangulations	<i>Los Angeles, CA</i>
2013 Joint Mathematics Meetings	<i>San Diego, CA</i>
2010 Iowa Summer Research Symposium	<i>Ames, IA</i>