
CURRICULUM VITAE

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Santa Cruz, CA 95060 phone: 520-730-8707

Education **University of California, Santa Cruz, CA**
Ph.D. Candidate, Mathematics Advanced: Spring 2024
Advisor: **Robert Boltje** Expected: June 2026
M.A., Mathematics Awarded: December 2020

Northern Arizona University, Flagstaff, AZ
B.S., Mathematics, Cum Laude Awarded: May 2019

Coconino Community College, Flagstaff, AZ
A.S., General Studies, Cum Laude Awarded: May 2017

Research Interests **Primary:** Modular representation theory of finite groups, local-to-global conjectures such as Broué’s abelian defect group conjecture, equivalences of blocks, splendid chain complexes.
Secondary: Algebraic combinatorics, combinatorics of Coxeter groups, structure of graphs of reduced words.

Academic Writing **Journal Articles**

J2. **J.V. Breland** and S.K. Miller. Brauer pairs for splendid Rickard equivalences. *Journal of Algebra*, 691:694–729, 2026. [ePrint] [arXiv:2312.10258]

J1. F. Awik, **J.V. Breland**, Q. Cadman, and D.C. Ernst. Braid graphs in simply-laced triangle-free Coxeter systems are partial cubes. *European Journal of Combinatorics*, **118**, 2024. [ePrint] [arXiv:2104.12318]

Submitted/Preprints

S1. J. Barnes, **J.V. Breland**, D.C. Ernst, and R. Perry. Braid graphs in simply-laced triangle-free Coxeter systems are median. [arXiv:2408.16839]

In Preparation

P2. **J.V. Breland** and J.K. Howard. Braid graphs in simply-laced triangle-free Coxeter systems and ribbon polyomino lattices.

P1. **J.V. Breland**. Splendid relatively stable equivalences for blocks of finite groups

Awards & Recognition *Chancellor’s Dissertation-Quarter fellowship* Fall 2025
Merit-based award supporting final-year doctoral research completion.
University of California, Santa Cruz

Regents Fellowship 2019-2025
Multiple merit-based awards for conference travel.
Mathematics Department, University of California, Santa Cruz

Travel Grant for Motivic homotopy, K-theory, and Modular Representations August 2024
University of Southern California

- CALICO Travel Award* May 2024
University of Oregon
- Travel Grant for Representation Theory and Related Geometry Conference* May 2024
University of Georgia
- MATH MIP Fellowship* Spring 2021
Merit-based award for leadership and service.
Mathematics Department, University of California, Santa Cruz
- Outstanding TA Award* 2021
Competitive award recognizing outstanding performance as a Teaching Assistant.
Mathematics Department, University of California, Santa Cruz
- CEFNS Outstanding Senior Award Nominee* May 2019
Nominated by the Department of Mathematics and Statistics. Runner-up for the award.
Northern Arizona University
- Outstanding Student in Mathematics* May 2017
Awarded to the student who went above and beyond the academic standard.
Coconino Community College

- Invited Talks** *Brauer pairs for splendid Rickard complexes* (1201-20-41543)* October 2024
AMS Special Session on Finite Groups, Their Representations, and Related Structures
AMS Fall Western Sectional Meeting 2024
University of California, Riverside (*Invited; canceled due to illness)
- Braid shadows in simply-laced Coxeter systems (1154-05-1071)* January 2020
AMS Special Session on Interactions between Combinatorics, Representation Theory, and Coding Theory
Joint Mathematics Meetings 2020

- Contributed Talks & Posters** *Braid graphs in simply-laced triangle-free Coxeter systems are partial cubes* May 2024
Cascade Lectures in Combinatorics (CALICO)
University of Oregon
- Taxonomy of braid graphs* April 2019
Undergraduate Research and Design Symposium
Northern Arizona University
- Architecture of braid classes in simply-laced Coxeter groups* March 2019
Southwestern Undergraduate Mathematics and Research Conference (SUnMaRC)
University of Arizona
- Braid arrangements, bias matroids, and multinet structures* April 2018
Undergraduate Research and Design Symposium
Northern Arizona University
- Braid arrangements and pointed multinet structures* April 2018
Southwestern Undergraduate Mathematics and Research Conference (SUnMaRC)
University of New Mexico

Teaching Experience For a comprehensive overview of my teaching, including sample syllabi, assignments, student evaluations, and course websites, please view my *Teaching Portfolio* or visit my teaching website at teaching.jadynbreland.com.

University of California, Santa Cruz

Graduate Student Instructor & Teaching Assistant Sept. 2019 - Present
 Mathematics Department

Courses taught as *Instructor of Record*:

- Math 22: Introduction to Calculus of Several Variables Summer 2025
- Summer 2024
- Summer 2021
- Math 117: Advanced Linear Algebra Summer 2023
- Summer 2022
- Math 3: Pre-calculus Fall 2021
- Math 103A: Complex Analysis Winter 2021

Courses taught as *Teaching Assistant*:

- Math 110: Number Theory Winter 2026
- Math 23A: Vector Calculus Spring 2025
- Spring 2023
- Fall 2022
- Fall 2020
- Summer 2020
- Spring 2020
- Math 22: Introduction to Calculus of Several Variables Winter 2025
- Math 117: Advanced Linear Algebra Fall 2024
- Math 19B: Calculus for Scientists & Engineers Spring 2024
- Winter 2024
- Winter 2023
- Spring 2021
- Winter 2020
- Fall 2019
- Math 160: Mathematical Logic Fall 2023
- Math 21: Linear Algebra Summer 2023
- Math 24: Ordinary Differential Equations Summer 2022
- Math 23B: Vector Calculus Spring 2022
- Math 111B: Algebra Spring 2022
- Math 105A: Real Analysis Winter 2022

Northern Arizona University

Grader Aug 2018 - May 2019
 Department of Mathematics and Statistics

Coconino Community College

Supplemental Instructor Jan 2017 - May 2019
 Mathematics Department

TRiO Tutor Sep 2016 - Aug 2017
 Student Support Services

Learning Assistant Sep 2016 - Dec 2016
 Student Support Services

Service & Mentorship	University of California, Santa Cruz
	<i>Mentor</i> for UCSC Undergraduate Degree-Defining Experience June 2026 ¹
	Undergraduate workshop on <i>The Burnside Ring</i>
	Centro de Ciencias Matemáticas UNAM, Morelia, México
	<i>Leader</i> for AWM Mathematics Prelim Study Sessions Spring 2025
	<i>Mentor</i> for Directed Reading Program (DRP)
	Quincy Strange, <i>Polynomial Representations of the Symmetric group</i> Fall 2025
	Gregory Souza, <i>Finite Fields</i> Spring 2025
	Lingyu (Stephanie) Shuai, <i>Jordan Canonical Form</i> Fall 2024
	Ben Avny, <i>Sylow Theorems</i> , Spring 2024
	Nora Jones, <i>Representation Theory of the Symmetric group</i> Winter 2022
	Nora Jones, <i>Ordinary Character Theory of Finite Groups</i> Fall 2022
<i>Mentor</i> for Graduate Peer Mentorship Program	
Xuguang Liu 2021-2022	
Reading Seminars	Bouc, <i>Biset Functors for Finite Groups</i> Sep 2021-May 2022
	Aschbacher, Kessar, & Oliver, <i>Fusion Systems in Algebra & Topology</i> Sep 2021-Mar 2022
	<i>The Block Theory of Finite Group Algebra</i> June 2021-Dec 2021
	Sagan, <i>The Symmetric Group</i> Summer 2020
Conferences Attended	<i>Motivic homotopy, K-theory, and Modular Representations</i> August 2024
	University of Southern California, Los Angeles, CA
	<i>Representation Theory and Related Geometry: Progress and Prospects</i> May 2024
	University of Georgia, Athens, GA
	<i>Cascade Lectures in Combinatorics</i> May 2024
	University of Oregon, Eugene, Oregon
	<i>Advances in Lie Theory, Representation Theory, and Combinatorics</i> May 2024
	Simons Laufer Mathematical Sciences Institute , Berkeley, CA
	<i>AMS Spring Western Sectional</i> May 2024
	San Francisco State University, San Francisco, CA
	<i>Joint Mathematics Meetings</i> January 2024
	San Francisco, CA
<i>Topics in Representation Theory: Biset Functors</i> June 2023	
Centro de Ciencias Matemáticas UNAM, Morelia, México	
<i>Joint Mathematics Meetings</i> January 2020	
Denver, CO	
<i>Undergraduate Research and Design Symposium</i> April 2019	
Northern Arizona University, Flagstaff, AZ	
<i>Southwestern Undergraduate Mathematics and Research Conference</i> April 2019	
University of Arizona, Tucson, AZ	
<i>Undergraduate Research and Design Symposium</i> April 2018	
Northern Arizona University, Flagstaff, AZ	
<i>Southwestern Undergraduate Mathematics and Research Conference</i> April 2018	
University of New Mexico, Albuquerque, NM	

¹upcoming workshop

Professional Development *Intentional, Inclusive, & Effective Peer Mentorship* September 2021
 CITL workshop, UC Santa Cruz
Preparing for Inclusive Teaching September 2019
 CITL workshop, UC Santa Cruz

Honors **Northern Arizona University**
Dean’s List Spring 2019
 Fall 2018
 Spring 2018
 Fall 2017

Coconino Community College
President’s List Spring 2017
 Fall 2016
Vice President’s List Spring 2016

Other Math Activities *Putnam Exam Participant (score: 1)* December 2018
 December 2017
Flagstaff STEM Night Volunteer March 2017

Other Skills Proficient in \LaTeX and MatLab. Some Python experience.

Professional Memberships American Mathematical Society (AMS)
 Association for Women in Mathematics (AWM)
 Mathematical Association of America (MAA)

Professional References **Robert Boltje** e-mail: boltje@ucsc.edu
 Professor of Mathematics, UC Santa Cruz
 Relationship: PhD Advisor

Markus Linckelmann e-mail: markus.linckelmann.1@citystgeorges.ac.uk
 Professor of Mathematics, City St George’s, University of London
 Relationship: External Research Evaluator

Dana C. Ernst e-mail: dana.ernst@nau.edu
 Professor of Mathematics, Northern Arizona University
 Relationship: Research Collaborator

Frank Bäuerle e-mail: bauerle@ucsc.edu
 Teaching Professor of Mathematics, UC Santa Cruz
 Relationship: Teaching Supervisor

Pedro Morales-Almazan e-mail: pmorale5@ucsc.edu
 Associate Teaching Professor of Mathematics, UC Santa Cruz
 Relationship: Teaching Mentor