

CURRICULUM VITAE

Education	University of California, Santa Cruz, CA <i>Ph.D. Candidate, Mathematics</i> Advanced: Spring 2024 Advisor: Robert Boltje Expected: June 2026 <i>M.A., Mathematics</i> Awarded: December 2020 Northern Arizona University, Flagstaff, AZ <i>B.S., Mathematics, Cum Laude</i> Awarded: May 2019 Coconino Community College, Flagstaff, AZ <i>A.S., General Studies, Cum Laude</i> 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	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 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] Journal Articles J2. J.V. Breland and S.K. Miller. Brauer pairs for splendid Rickard equivalences. <i>Journal of Algebra</i> (2025). [arXiv:2312.10258] [ePrint] J1. F. Awik, J.V. Breland, Q. Cadman, and D.C. Ernst. Braid graphs in simply-laced triangle-free Coxeter systems are partial cubes. <i>European Journal of Combinatorics</i> 118 (2024), 103931. [arXiv:2104.12318] [ePrint]
Awards & Recognition	<i>Chancellor’s Dissertation-Quarter fellowship</i> Fall 2025 Merit-based award supporting final-year doctoral research completion. University of California, Santa Cruz <i>Regents Fellowship</i> 2019-2025 Multiple merit-based awards for conference travel. Mathematics Department, University of California, Santa Cruz <i>MATH MIP Fellowship</i> Spring 2025 Merit-based award for leadership and service. 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

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	University of California, Santa Cruz
	<i>Graduate Student Instructor & Teaching Assistant</i> Sept. 2019 - Present Mathematics Department
	Courses taught as <i>Instructor of Record</i> :
	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 <i>Teaching Assistant</i> :
	Math 22: Introduction to Calculus of Several Variables Winter 2025 Math 23A: Vector Calculus Spring 2025 Spring 2023 Fall 2022 Fall 2020 Summer 2020 Spring 2020 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
Service & Mentorship	University of California, Santa Cruz
	<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	
Professional Development	<i>Intentional, Inclusive, & Effective Peer Mentorship</i>	September 2021
	CITL workshop, UC Santa Cruz	
	<i>Preparing for Inclusive Teaching</i>	September 2019
	CITL workshop, UC Santa Cruz	
Honors	Northern Arizona University	
	<i>Dean's List</i>	Spring 2019
		Fall 2018
		Spring 2018
		Fall 2017
	Coconino Community College	
	<i>President's List</i>	Spring 2017
		Fall 2016
	<i>Vice President's List</i>	Spring 2016
Other Math Activities	<i>Putnam Exam Participant (score: 1)</i>	December 2018
		December 2017
	<i>Flagstaff STEM Night Volunteer</i>	March 2017
Other Skills	Proficient in $\text{\LaTeX}$ and MatLab	

Other Skills Proficient in $\text{\LaTeX}$ and MatLab

Professional **Robert Boltje** e-mail: boltje@ucsc.edu
References 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