Cashous W. Bortner

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EMPLOYMENT

Assistant Professor of Mathematics   **August, 2022 - Present**
California State University Stanislaus

RESEARCH INTERESTS

Algebraic, combinatoric, and graph theoretic approaches to problems in biological and physical systems; parameter identifiability; algebraic statistics.

EDUCATION

Ph.D. in Mathematics, North Carolina State University   **May, 2022**
    Thesis: "Identifiability Analysis of Two Families of ODE Models"
    Advisor: Seth Sullivant

M.S. in Mathematics, North Carolina State University   **May, 2019**
B.S. in Mathematics, University of Nebraska-Lincoln   **May, 2017**

PUBLICATIONS

1. **Bortner**, **C.**, Gross, E., Meshkat, N., Shiu, A. & Sullivant, S. Identifiability of linear compartmental tree models and a general formula for the input-output equations. *Advances in Applied Mathematics* **146** (May 2023).

2. **Bortner**, **C.** & Sullivant, S. Structural Identifiability of Series-Parallel LCR Systems. *Journal of Symbolic Computation.* **112,** 79–104 (Sept. 2022).

3. **Bortner**, **C.** & Meshkat, N. Identifiable Paths and Cycles in Linear Compartmental Models. *Bulletin of Mathematical Biology.* **84,** 53 (Mar. 2022).

4. Bernstein, P., **Bortner**, **C.**, Coskey, S., Li, S. & Simpson, C. The Set Splittability Problem. *The Australasian Journal of Combinatorics* **75,** 190–209 (Oct. 2019).

INVITED PRESENTATIONS

- Differential Algebra and Related Topics conference, School of Mathematical Sciences, Queen Mary University of London, June 2023
- California State University Long Beach Math Department Colloquium, April 21st, 2023
- Morehead State University Math Department Colloquium, April 14th, 2023
- Santa Clara University Math Department Colloquium, October 11th, 2022
- A Speaker Series for the Quantitatively Curious Colloquium, California State University Stanislaus, September 23rd, 2022

Academic Honors, Awards, and Appointments

Fall 2022-Present	Project NExT Fellow
Spring 2022	NCSU Department of Mathematics Franke Norris Griggs Award for Service
Fall 2021	Funded by the Statistical and Applied Mathematical Sciences Institute Graduate Research Fellowship
Fall 2020-Spring 2021	NCSU Preparing the Professoriate Fellow
Fall 2019-Summer 2020	Funded by the NSF Standard Grant "Mathematical Phylogenetics" under PI Seth Sullivant
Spring 2017	UNL Chair's Prize for Outstanding Graduating Undergraduate
Spring 2017	UNL Parents' Recognition Award for Outstanding Faculty and Staff

Teaching Experience

MATH 3400: Set Theory and Logic	Spring 2023 (21 students)
MATH 2300: Discrete Structures	Spring 2023 (27 students)
MATH 1070: College Algebra	Spring 2023 (35 students)
MATH 1420: Calculus II	Fall 2022 (16 students)
MATH 1410: Calculus I	Fall 2022 (25 students)
MA 103*: Topics in Contemporary Mathematics	Spring 2022 (100 students)
MA 103*: Topics in Contemporary Mathematics Dist. Ed.	Spring 2022 (52 students)
MA 131*: Calculus I for Life and Management Sciences	Summer 2021 (28 students)
MA 225*: Foundations of Adv. Math	Spring 2021 (20 students)
MA 131*: Calculus I for Life and Management Sciences	Summer 2019 (7 students)
MA 141 IEP*: Calculus I Intensive English Program	Spring 2019 (7 students)

North Carolina State University (NCSU)

Service and Leadership

- NSF-MC2 Grant Faculty Fellow, Fall 2022-Present
- S-STEM Grant Planning Meeting, October 11-12, 2022
- Volunteer and Workshop Co-Organizer for Sonia Kovalevsky Day for middle and high school girls interested in math, April 9, 2022
- Triangle Area Graduate Mathematics Conference (TAGMaC) Session Chair, April 2, 2022
- Co-president of Graduate Instructor Support & Tools (GIST), NCSU, Fall 2021-Spring 2022
- Officer of the Math Graduate Student Association, NCSU, Fall 2019-Spring 2022
- Mentor in the First Year Graduate Student MentoRing, NCSU, Fall 2021-Spring 2022
- Member of the Diversity, Equity, and Inclusion Committee, NCSU Math Department, 2020-2022
- Co-founder of the Graduate Alliance for Mental Health in Academia, Fall 2020-Spring 2022
- Executive Committee Member of Undergrads Union Grads Mentorship Organization, NCSU, 2019-2022

Service Presentations

- *What is a Preliminary Exam?*, Math Graduate Student Association, September 10th, 2021
- *What is a Qualifying Exam?*, Math Graduate Student Association, May 12th, 2021
- *What is a Dissertation?*, Math Graduate Student Association, April 2nd, 2021
- *What is an REU?*, Undergrads Union Grads, January 27th, 2021
- *Undergraduate Mentoring Panel*, Workshop for Inclusive Teaching Practices, December 5th, 2020

- *Applying to Grad School*, Undergrads Union Grads, November 11th, 2020
- *Learning LaTeX Tutorial*, Undergrads Union Grads, September 29th, 2020

Workshops and Trainings

- CSU Student Success Dashboard Workshop, April 26th, 2023
- MSRI Critical Issues in Mathematical Education: Mentoring for Equity, MSRI, March 22-24th, 2023
- STEM-NET: Becoming more than the sum of our parts conference, March 16-17th, 2023
- Measuring Teaching Effectiveness Workshop, FCETL via zoom, October 27, 2022
- Using Inquiry to Teach Mathematics and Thinking, MAA Workshop via zoom, September 29, 2022
- MathFest, August 2022
    - Active Learning with Active Calculus Minicourse (4 hours)
    - The Role of Culturally Relevant Pedagogy and Identity Development in the Teaching and Learning of Mathematics
    - Teaching with Inquiry: Growing our Practice Together
    - How to Create Safe and Community Responsive Outreach Programs
    - Teaching and Leading towards Institutional Change
    - Making Teaching Matter More: Active-learning Strategies and Barriers to Implementation
    - Townhall on Latinx mathematicians
- Workshop for Inclusive Teaching Practices, NCSU GLBT Center, December 5th, 2020
- Workshop on Supporting Students with Disabilities, NCSU GLBT Center, March 29th, 2019
- AIM Workshop on Identifiability Problems in Systems Biology, AIM, August 2019
- QPR Suicide Prevention Training, Fall 2018

Professional Memberships and Fellowships

- Project NExT Fellow, Fall 2021-Present
- Mathematical Association of America, Fall 2019-Present
- Society for Industrial and Applied Mathematics, Fall 2019-Present