

SAM MACDONALD | Curriculum Vitae

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RESEARCH INTERESTS

I am primarily interested in mathematics education and expanding the accessibility of mathematics. Specifically, I specialize in providing college level courses for prisoners and expanding access to educational resources behind bars, developing Open Educational Resources (OERs), and in studying shifts in mathematical self-efficacy at transitional points in undergraduate education.

EDUCATION

PH.D – MATHEMATICS

University of Nebraska – Lincoln
Advised by [Yvonne Lai](#)

August 2021 - Present
Lincoln, Nebraska

M.S – MATHEMATICS

University of Nebraska – Lincoln

August 2021 - May 2023
Lincoln, Nebraska

B.A. – MATHEMATICS

Willamette University, Minor in Political Science
Advised by [Erin McNicholas](#)

August 2016 - May 2020
Salem, Oregon

POSITIONS HELD

NSF GRADUATE RESEARCH FELLOW

University of Nebraska – Lincoln
Researching institutional barriers to implementing online educational resources in prison settings. Advised by [Yvonne Lai](#).

September 2023 - Present
Lincoln, Nebraska

GRADUATE TEACHING ASSISTANT

University of Nebraska – Lincoln

August 2021 - Present
Lincoln, Nebraska

UPWARD BOUND INSTRUCTOR

University of Nebraska – Lincoln

Summer 2022
Lincoln, Nebraska

REU – ALGEBRAIC COMPUTATIONAL BIOLOGY

Texas A&M University
Advised by [Anne Shiu](#)

Summer 2019
College Station, Texas

TEACHING EXPERIENCE

MATH 106 – CALCULUS I

Instructor of Record, Recitation Instructor
[W. H. Thompson Scholar](#) Section; [Online Textbook](#)

Fall 2024
1 Section, 1 Recitation (5 Credits)

MATH 208 – CALCULUS III

Recitation Instructor
[Online Textbook](#)

Fall 2023
2 Sections (2 Credits)

MATH 100A – INTERMEDIATE ALGEBRA

Instructor of Record
Prison course taught through UNL at the Reception and Treatment Center

Summer 2023
1 Section (3 Credits)

MATH 101 – COLLEGE ALGEBRA

Spring 2023

Instructor of Record
[Online Textbook](#)

1 Section (3 Credits)

MATH 100A – INTERMEDIATE ALGEBRA

Instructor of Record
[Online Textbook](#)

Fall 2022
1 Section (3 Credits)

MATH 102 – TRIGONOMETRY

Instructor of Record
[Online Textbook](#)

Summer 2022
1 Section (2 Credits)

MATH 107 – CALCULUS II

Recitation Instructor
[Online Textbook](#)

Spring 2022
2 Sections (4 Credits)

MATH 106 – CALCULUS I

Recitation Instructor
[Online Textbook](#)

Fall 2021
2 Sections (4 Credits)

PRISON EDUCATION

INTERMEDIATE ALGEBRA

Reception and Treatment Center (RTC) & UNL

Taught at UNL as MATH 100A: Intermediate Algebra, this course was taught for credit at RTC, with students receiving 3 credits. Co-taught with Kristie Pfabe.

Summer 2023

ALGEBRA I

Reception and Treatment Center (RTC)

Volunteer Algebra I course, co-taught with Kristie Pfabe.

Fall 2022 – Spring 2023

MASCULINITY, GENDER, AND SEXUALITY

Oregon State Penitentiary (OSP) & Willamette University

Proposed by OSP resident who was slated for release: students read books on modern cultural developments in masculinity, gender, and sexuality. Participated as a student.

Fall 2018

HONORS & AWARDS

NSF GRFP

University of Nebraska – Lincoln

National Science Foundation Graduate Research Fellowship

2023

PHIL HANNI STUDENT SCHOLAR AWARD

Willamette University

[Institute for Continued Learning](#)

2020

PROFESSIONAL DEVELOPMENT

PEDAGOGY COURSE

University of Nebraska – Lincoln

Completed a year-long pedagogy course titled "Teaching and Learning Mathematics at the Post-Secondary Level". Topics included constructivism, communities of practice, humanistic teaching perspectives, and equitable teaching.

August 2022 - May 2023

Lincoln, Nebraska

SELECTED PRESENTATIONS

FICTIONAL MATHEMATICS: A GLIMPSE INTO MATH IN FANTASY AND SCIENCE FICTION

– Graduate Student Seminar, University of Nebraska – Lincoln, April 2025 [50 Minutes]

– Math RaMP through the Great Plains Alliance, Doane University March 2025 [30 Minutes]

THE MIRACLE (OF) SUDOKU

– GST² Seminar, University of Nebraska – Lincoln, February 2025 [50 Minutes]

BRINGING THE INSIDE OUT: WHAT PRISON EDUCATION CAN TELL US ABOUT OUR CLASSROOMS, CHARACTER, AND CULTURE

– Joint Math Meetings, AMS Special Session on Ethics in the Mathematics Classroom, January 2024 [20 Minutes]
– Kansas Math Graduate Student Conference, University of Kansas, December 2023 [20 Minutes]
– Graduate Student Seminar, University of Nebraska – Lincoln, August 2023 [50 Minutes]

ARE WE THERE YET?: A FINITE GUIDE TO THE INFINITE

– Math RaMP through the Great Plains Alliance, Benedictine College, October 2023 [50 Minutes]
– Math RaMP through the Great Plains Alliance, Wayne State University, April 2022 [50 Minutes]
– Jim Albaugh Colloquium Series, Willamette University, March 2020 [50 Minutes]

FIFTY SHADES OF GRADE: EQUITY, MOTIVATION, AND OBEDIENCE IN TRADITIONAL GRADING PRACTICES

– Graduate Student Seminar, University of Nebraska – Lincoln, January 2023 [50 Minutes]
– Mathematics Education Seminar, University of Nebraska – Lincoln, November 2022 [50 Minutes]
– Mathematics Teaching Table, University of Nebraska – Lincoln, October 2022 [50 minutes]

BE THERE OR B^2 : HUMOR THEORY AND ITS USES IN THE CLASSROOM

– Graduate Student Seminar, University of Nebraska – Lincoln, April 2022 [20 Minutes]

THE COMPLEXITIES OF CONVEXITY: NON-MONOTONICITY OF CLOSED CONVEXITY IN NEURAL CODES

– Jim Albaugh Colloquium Series, Willamette University, September 2019 [50 Minutes]
– Phil Hanni Virtual Conference, Willamette University, April 2020 [20 Minutes]
– Texas A&M REU Conference, Texas A&M University, July 2019 [50 minutes]

GERRYMEANDERING: MEASURING CONGRESSIONAL DISTRICT MEANDERINGNESS

– Jim Albaugh Colloquium Series, Willamette University, May 2019 [50 Minutes]

PROFESSIONAL ACTIVITIES

NEBRASKA CONFERENCE FOR UNDERGRADUATE WOMEN IN MATHEMATICS

Organizing Committee Member

NCUWM is a conference for undergraduates that provides opportunities to present undergraduate research and connect with other young women mathematicians.

August 2023 - May 2025

University of Nebraska – Lincoln

FIRST YEAR MATHEMATICS TASK FORCE

Committee Member

The task force creates strategies to help reduce equity achievement gaps in our 100 level mathematics courses, ranging from Intermediate Algebra to Calculus II.

August 2022 - May 2025

University of Nebraska – Lincoln

GRADUATE MENTORING PROGRAM

Mentor

Served as a mentor to junior graduate students in the Mathematics Department's Graduate Student Mentoring Program.

August 2023 - Present

University of Nebraska – Lincoln

GRADUATE STUDENT ORIENTATION SESSION LEADER

Volunteer

Facilitated informational sessions at the Mathematics Department GTA orientation. Sessions included: "Facilitating Group Work and Active Learning" and "Mastery Based Grading and Equitable Teaching Methods"

Summer 2023, 2024

University of Nebraska – Lincoln

LINCOLN HIGH HOMEWORK CENTER

Volunteer

Worked as a counselor at the Math Resource Center providing tutoring services to students in precalculus, calculus, and contemporary mathematics courses.

Spring 2023

Lincoln High School

MATH RESOURCE CENTER COUNSELOR

Volunteer

Worked as a counselor at the after school Lincoln High School homework center, providing tutoring services to students in precalculus and calculus courses.

August 2021- May 2024

University of Nebraska – Lincoln

NEBRASKA MATH DAY

Volunteer

2021, 2022, 2023

University of Nebraska – Lincoln

Volunteered at UNL's Math Day, an annual program in which high school students from around Nebraska are invited to take part in mathematics workshops and competitions.

PUBLICATIONS (ACADEMIC)

NON-MONOTONICITY OF CLOSED CONVEXITY IN NEURAL CODES

(1)

arXiv

with Brianna Gambacini, Amzi Jeffs, and Anne Shiu (2021). *Vietnam Journal of Mathematics*, 50(2), 359-373.

PUBLICATIONS (CREATIVE)

- "A Mathematician's Guide to Being Normal", *This Exquisite Topology: A Collection of Happy Abstractions*, forthcoming.
- "Chicken Little", *The Colored Lens*, forthcoming Summer 2025.
- "Gone, But Not Forgotten", *Suburban Witchcraft Magazine*, Issue 8, March 2025,
- "Artificial", *365 Tomorrows*, February 2025.
- "The Abodale Hotel and Suites", *Killer Nashville Magazine*, February 2025.

STUDENT QUOTES

- "Sam. **Just the way he teaches is phenomenal.** He is definitely one of the best math TA's and just in general teachers I've had. He is almost always available to help with questions and is very good at getting back to emails. And just the fact that **he truly does show that he wants us to learn and to succeed.**"
- Calculus II Student
- "I have never had an instructor who so willing gave his best each and every class. Sam went above and beyond my expectations in being available to offer assistance in our course work and answer questions. My success in this course is primarily because of his dedication to giving every opportunity to succeed."
- Intermediate Algebra Student
- "There is nothing Sam could improve on, and any attempt to imply that he can is complete blasphemy."
- Calculus I Student
- "Sam was a very welcoming and easy person to talk to. I can have a hard time asking for help at times, and **his communication skills allowed me to release the fear of asking questions.** I enjoyed how he taught, definitely made learning easy and possible."
- College Algebra Student
- "The strength of this course comes from the teachers. Their ability to help us through our struggles makes the material easier to interpret. **You changed my view of math and education as a whole.**"
- RTC Intermediate Algebra Student
- "Sam always came with a positive but honest attitude, was very understanding, and **truly cared about our success.**"
- Calculus III Student
- "I've never felt truly comfortable in a math classroom until I entered this one."
- College Algebra Student

