

# 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

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

Instructor of Record

Spring 2023

1 Section (3 Credits)

[Online Textbook](#)

## **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**

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### **INTERMEDIATE ALGEBRA**

**Summer 2023**

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.

### **ALGEBRA I**

**Fall 2022 – Spring 2023**

Reception and Treatment Center (RTC)

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

### **MASCULINITY, GENDER, AND SEXUALITY**

**Fall 2018**

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.

## **PUBLICATIONS**

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### **NON-MONOTONICITY OF CLOSED CONVEXITY IN NEURAL CODES**

(1)

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

[arXiv](#)

## **HONORS & AWARDS**

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### **NSF GRFP**

**2023**

University of Nebraska – Lincoln

National Science Foundation Graduate Research Fellowship

### **PHIL HANNI STUDENT SCHOLAR AWARD**

**2020**

Willamette University

[Institute for Continued Learning](#)

## **PROFESSIONAL DEVELOPMENT**

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### **PEDAGOGY COURSE**

**August 2022 - May 2023**

University of Nebraska – Lincoln

Lincoln, Nebraska

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.

## SELECTED PRESENTATIONS

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### 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 [10 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

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### 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 - Present

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 - Present

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- Present

University of Nebraska – Lincoln

### NEBRASKA MATH DAY

#### Volunteer

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.

2021, 2022, 2023

University of Nebraska – Lincoln

## STUDENT QUOTES

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- "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