

Matthew Bachmann

Curriculum Vitae

Davidson College
Department of Mathematics and Compute Science
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Academic Appointments

2024-Present **Visiting Assistant Professor of Mathematics**, *Davidson College*
2023-2024 **Adjunct Lecturer of Mathematics**, *Davidson College*

Education

August 2023 **Ph.D. in Mathematics**, *University of Nebraska-Lincoln*, Lincoln, NE
Advisor: Mark Walker
Thesis: *Asymptotic growth of stable Ext modules*
May 2017 **B.A. in Mathematics**, *Trinity University*, San Antonio, TX
Summer 2014 *Texas Tech University*, Lubbock, TX
Spring 2014 *Susquehanna University*, Selinsgrove, PA
Summer 2013 *University of Maryland, Baltimore County*, Baltimore, MD
Fall 2011-
Fall 2013 *Northeast Lakeview College*, Live Oak, TX

Honors

2021 **Amy Bouska GTA Leadership Award**
Awarded for exhibiting exceptional leadership in service to the department.
Spring 2020 **William H. Thompson Instructor**
The goal of the William H. Thompson Scholar learning community is to foster a sense of belonging, promote learning, increase engagement, and celebrate success.
2015 **NSF S-STEM Math Scholars 2015 Recipient**

Teaching Experience

Davidson College—Instructor of Record

Spring 2025 **MAT 230—Sets and Proofs**
Standards based grading
MAT 104—Introduction to Statistics
Labs implementing statistical procedures done in R
Fall 2024 **MAT 150—Linear Algebra**
Standards based grading with labs done in Mathematica
MAT 104—Introduction to Statistics
Two sections.

- Spring 2024 **MAT 104–Introduction to Statistics**
- Fall 2023 **MAT 104–Introduction to Statistics**
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- University of Nebraska-Lincoln–Instructor of Record
- Spring 2022 **MATH 103–College Algebra and Trigonometry**
Intensive catch-up course that met 5 days a week
- Fall 2021 **MATH 106–Calculus I**
large lecture of 90 students
- Spring 2021 **MATH 103–College Algebra and Trigonometry**
- Fall 2020 **MATH 104–Applied Calculus**
Used a flexible hybrid model to accommodate for social distancing regulations due to COVID-19. With about 100 total students, a different third of the class would come in person each of Monday, Wednesday, and Friday while the rest of the class attended via Zoom.
- Summer 2020 **MATH 107–Calculus II**
This was an online class due to COVID-19. I developed daily worksheets that followed my lecture in order to promote engagement over Zoom.
- Spring 2020 **MATH 104–Applied Calculus**
This class part of the William H. Thompson learning community.
- Fall 2019 **MATH 103–College Algebra and Trigonometry**
- Summer 2019 **MATH 104–Applied Calculus**
- Spring 2019 **MATH 203J–Contemporary Mathematics**
Course is designed to be an introduction to mathematical thinking for journalism majors.
- Fall 2018 **MATH 100A–Intermediate Algebra**
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- University of Nebraska-Lincoln–Teaching Assistant
- Spring 2023, Fall 2022, & Fall 2017 **MATH 106r–Calculus I Recitations**
In the 2022-2023 academic year I was the associate convener. This role involved weekly meetings with first year graduate students to provided guidance in their first teaching experience.
- Summer 2018 & Spring 2018 **MATH 107r–Calculus II Recitations**

Involvement

Professional Development

- Summer 2023 **JupyterHub Workshop**
Introduction to using JupyterHub in order to support the use of R in introductory stats courses.
- Spring 2021 **Topics in Mathematics Education Course**
Literature review regarding current mathematics education research.

Mentorship

Summer 2021
& 2020

Organized Summer Reading Courses

Both summer courses were meant to introduce newer graduate students to commutative algebra topics that did not have dedicated courses. In the summer of 2021 I organized a reading course on Bruns and Herzog's *Cohen-Macaulay Rings*. In 2020, the course was on homological algebra.

2019-
2020

Peer Mentorship Program

I served as a mentor to a first year mathematics graduate student.

Summer 2019

Masters of Arts for Teachers Thesis Mentor

Mentored two groups of students working on their masters of arts in teaching. My role was to advise small groups in mathematical writing and reasoning.

Service

Spring 2025

WebWork Set-up

Working with T&I to set up a free online homework system for introductory mathematics courses.

Spring 2022
& 2020

Co-organizer for the Commutative Algebra Reading Seminar (CARS)

CARS is a seminar that gives graduate students an opportunity to learn more about commutative algebra together.

Spring 2020-
Fall 2022

Co-founder and co-organizer of the Directed Reading Program

The Directed Reading Program pairs a graduate student mentor with an undergraduate student to work through a semester long project beyond the scope of a normal undergraduate curriculum.

Fall 2022
& Fall 2021

Orientation Session: Office Hours Training

Led an information session on office hours for mathematics graduate students during their first year orientation.

Outreach

Spring 2023
& Spring 2022

Co-organizer for the Upcoming Researchers in Commutative Algebra conference (URiCA)

The mission of the URiCA conference is to promote interaction among junior researchers, graduate students and postdocs. The conference had 40 attendees in the Spring of 2022 with 8 invited speakers.

2017-
Fall 2022

Math Day Volunteer

Each year I volunteer for UNL Math Day, where over a thousand high school students from across Nebraska visit UNL's campus to participate in math competitions.

Work Experience

2017-2023

Graduate Teaching Assistant, University of Nebraska-Lincoln

- Spring 2023 & Fall 2022 **Associate Convener for Calculus I**, University of Nebraska-Lincoln
The associate convener serves as the main point of contact for all Calculus I recitation instructors. I was responsible for holding weekly meetings with the recitation instructors, doing observations of their teaching throughout the semester, and working closely with the faculty convener to ensure the course runs smoothly across the many sections (over 800 students).
- Summer 2022 **Course Development for Applied Calculus**, University of Nebraska-Lincoln
Produced slides with clicker questions for in class participation.
- 2009-2017 **Starbucks Coffee Company**, *Shift Supervisor*