

# Sabrina Fowler

## Mathematics PhD Candidate

sabrinafowler.github.io

✉ sfowler14@unl.edu

### Research Interests

Commutative algebra: symbolic powers of ideals and Gröbner bases. Topological data analysis and sheaf theory.

### Education

2021 - **PhD in Mathematics**, *University of Nebraska-Lincoln*, Expected 2026  
Advised by Eloísa Grifo

2021 **MS in Mathematics**, *Missouri State University*

2019 **BS in Applied Mathematics**, *Missouri State University*

Minor in Computer Science, with courses in Database Systems and Machine Learning

### Seminar Talks

Nov 2024 **An Introduction to Gröbner Bases and Their Applications**, *University of Nebraska-Lincoln*

Presented to the Commutative Algebra Seminar as part of Oral Comprehensive Exam

Nov 2024 **Gröbner Bases: Deleted Scenes and a Connection to Linear Algebra**, *University of Nebraska-Lincoln*

Presented to the Commutative Algebra Reading Seminar

Oct 2024 **Álgebra de Boole**, *University of Nebraska-Lincoln*

Presented to the Matemáticas Seminar

May 2024 **Applied Abstract Algebra: Not an Oxymoron**, *University of Nebraska-Lincoln*

Presented to the Commutative Algebra Reading Seminar

Oct 2023 **The Power of Symbolic Powers in Commutative Algebra**, *University of Nebraska-Lincoln*

Presented to the Commutative Algebra Reading Seminar

Apr 2021 **Using Finite Fields to Construct Error-Correcting Cyclic Codes**, *Missouri State University*

Presented to the Mathematics Department as completion of Master's Degree Research Requirement

### Conferences/Workshops Attended

Sep 2024 **KUMUNU**, *University of Missouri*

Apr 2024 **Recent Developments in Commutative Algebra**, *Simons Laufer Mathematical Sciences Institute (formerly MSRI)*

- Jan 2024 **Introductory Workshop: Commutative Algebra**, *Simons Laufer Mathematical Sciences Institute (formerly MSRI)*
- Nov 2023 **Gender Equity in the Mathematical Study (GEMS) of Commutative Algebra**, *University of Minnesota*
- Apr 2023 **Math 125**, *University of Nebraska-Lincoln*
- Jan 2019 **Nebraska Conference for Undergraduate Women in Mathematics**, *University of Nebraska-Lincoln*

## Positions Held

- 2021 - **Graduate Teaching Assistant**, *University of Nebraska-Lincoln*
- 2024 - **Research Intern**, *Georgia Tech Research Institute*
- 2023 **Graduate Research Assistant**, *University of Nebraska-Lincoln*  
 Curriculum Development for College Trigonometry  
 Curriculum Development and Instructor for College of Engineering Summer Bridge Program, a program to help incoming first-year undergraduate Engineering majors succeed in their math courses
- 2019-2021 **Graduate Teaching Assistant**, *Missouri State University*

## Teaching Experience

### Associate Convener

- Math 102: College Trigonometry**, *University of Nebraska-Lincoln*  
 Responsible for coordinating all sections of College Trigonometry and supporting graduate student instructors  
 Fall 2023 - Spring 2024

### Instructor of Record

- Math 102: College Trigonometry**, *University of Nebraska-Lincoln*  
 Spring 2023, Fall 2023, Spring 2024
- Math 101: College Algebra**, *University of Nebraska-Lincoln*  
 Summer 2022, Fall 2022

### Recitation/Lab Instructor

- Math 314: Linear Algebra**, *University of Nebraska-Lincoln*  
 Fall 2024
- Math 106: Calculus I**, *University of Nebraska-Lincoln*  
 Fall 2021, Spring 2022
- MTH 101: Intermediate Algebra**, *Missouri State University*  
 Fall 2019, Spring 2020, Fall 2020, Spring 2021

## Service and Outreach

- 2024 - **Graduate Student Mentor for AWM Student Chapter**, *University of Nebraska-Lincoln*
- 2024 **Graduate Student Orientation Organizer**, *University of Nebraska-Lincoln*

2023 - **Member of the NCUWM Organizing Committee**

Nebraska Conference for Undergraduate Women in Mathematics is a conference for undergraduates that provides opportunities to present undergraduate research and connect with other young women mathematicians.

2021 - **UNL Math Day Volunteer**

Math Day is an annual event for secondary students to participate in mathematical activities/competitions.

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## Professional Development

2022-2023 **Teaching and Learning Mathematics at the Post-Secondary Level Parts I and II**, *University of Nebraska-Lincoln*

A three-credit sequence of courses intended to train mathematics graduate teaching assistants how to be an effective teacher and classroom manager.

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## Computer Skills

### Languages

C++, Git, HTML, Python, Perl, SQL

### Software

Macaulay2, Mathematica, MATLAB, Microsoft Office, LaTeX