Sabrina Fowler

Mathematics PhD Candidate

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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

Feb 2025 **La Paradoja de la Línea de Costa**, *University of Nebraska-Lincoln*
Presented to the Matemáticas Seminar

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.

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.

Computer Skills

Languages

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

Software

Macaulay2, Mathematica, MATLAB, Microsoft Office, LaTeX