Sabrina Fowler
Mathematics PhD Candidate

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Research Interests

Commutative Algebra: neural ideals and their properties.
Deep Learning: investigating neural ideals associated to various neural network architectures.

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

Positions Held

2021 -   **Graduate Teaching Assistant**, *University of Nebraska-Lincoln*

2024 -   **Research Intern**, *Georgia Tech Research Institute*

2025   **RTG Graduate Trainee**, *University of Nebraska - Lincoln*
Spring 2025, supported by the NSF Research Training Group grant for Commutative Algebra at Nebraska

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*

Seminar Talks

Feb 2026   **A Characterization of Polarized Neural Ideals**, *University of Nebraska-Lincoln*
Presented to the Commutative Algebra Reading Seminar

Oct 2025   **Persistent Stanley-Reisner Theory**, *University of Nebraska-Lincoln*
Presented to the Commutative Algebra Reading Seminar

Apr 2025   **Neural Ideals**, *Univeristy of Nebraska-Lincoln*
Presented to the Commutative Algebra Reading Seminar

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

Mar 2025	**Women in Commutative Algebra**, *Fields Institute*
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*

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 309: Introduction to Mathematical Proofs, *University of Nebraska-Lincoln*
Spring 2026

Math 203: Contemporary Math, *University of Nebraska-Lincoln*
Fall 2025

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