JULIANN GERACI

jgeraci2@huskers.unl.edu ◇ My website
Department of Mathematics ◇ University of Nebraska - Lincoln
344 Avery Hall ◇ Lincoln, NE 68588

EDUCATION

Doctor of Philosophy, Mathematics — Expected May 2026
University of Nebraska-Lincoln, Lincoln, NE

Master of Science, Mathematics — December 2021
University of Nebraska-Lincoln, Lincoln, NE

Bachelor of Arts, Mathematics — May 2020
State Univeresity of New York at Oswego, Oswego, NY

POSITIONS HELD

Graduate Teaching Assistant — August 2020 -
Mathematics Department, University of Nebraska- Lincoln

Graduate Research Assistant — June 2021 - August 2021, June 2023-August 2023
Center for Science, Mathematics and Computer Education, University of Nebraska- Lincoln
Worked on the AIR@NE project, an NSF-funded grant that examines the adaptation and implementation of a validated K-8 Computer Science curriculum in diverse school districts.

NSF Graduate Student Mentor — June 2023 - August 2023
The Polymath Jr Program, City University of New York

NSF Research Assistant — June 2019- August 2019
REU, East Tennessee State University, Johnson City, TN

COMPUTER SKILLS

Languages/Software: C++, Git/GitHub, Google Workspace, HTML/CSS, Java, JavaScript, Julia, LaTeX, Macaulay2, MatLab, Mathematica, Microsoft Office, Python

Algorithms: Discrete Fourier Transform, Euler Method, Gauss-Seidel Method, Gaussian Elimination, Jacobi Method, Newton Method, Runge-Kutta Methods, Steepest Descent

PROFESSIONAL DEVELOPMENT

Advanced Studies Institute in Mathematics of Data Science & Machine Learning
Urgench State University (Uzbekistan) — January 2024

Neural Coding and Combinatorics Workshop
ICERM — October 2023

Macaulay2 Workshop and Mini School
University of Minnesota — June 2023

PUBLICATIONS

1. *Products and powers of principal symmetric ideals* (with E. Dannetun, B. Fang, R. Formenti, B. Gao, R. Kogel, Y. Li, S. Mandal, V. Rupasinghe, A.Seceleanu, D. Tran, N.Walker), Journal of Algebra and Its Applications, in press.
2. *Graphical Universal Cycles of Combinatorial Objects* (with A. Cantwell, A. Godbole, and C. Padilla), Advances in Applied Mathematics, Volume 127, June 2021, 102166.

TALKS AND PRESENTATIONS

11. **How Algebra Can Help Prevent Theft**(30 min) September 12, 2024
University of Nebraska-Lincoln, Commutative Algebra Seminar
10. **Boolean Matrix Rank and Castlenuovo-Mumford Regularity**(Poster) August 15, 2024
University of Notre Dame, UweFest
9. **Simplicial Resolutions and the Scarf Complex**(50 min) September 20, 2023
University of Nebraska-Lincoln, Commutative Algebra Seminar
8. **Monomial Resolutions**(50 min) April 26, 2023
University of Nebraska-Lincoln, Commutative Algebra Reading Seminar
7. **Introduction to Neural Codes, Rings, and Ideals**(25 min.) March 14, 2023
Dordt College, Great Plains Alliance Series
6. **Neural Rings and Ideals** (50 min.) December 5, 2022
Online, Commutative Algebra Regional Expository Seminar
5. **Neural Rings and Ideals** (50 min.) November 30, 2022
University of Nebraska-Lincoln, Commutative Algebra Reading Seminar
4. **A Path to Resolutions** (20 min.) August 31, 2022
University of Nebraska-Lincoln, Commutative Algebra Reading Seminar
3. **Gröbner Bases II** (50 min.) March 9, 2022
University of Nebraska-Lincoln, Commutative Algebra Reading Seminar
2. **Gröbner Bases I** (50 min.) March 2, 2022
University of Nebraska-Lincoln, Commutative Algebra Reading Seminar
1. **Construction of Free Resolutions Through Simplicial Complexes** (50 min.) October 6, 2021
University of Nebraska-Lincoln, Commutative Algebra Reading Seminar

AWARDS

Don Miller Outstanding Teaching by a Graduate Student 2022
University of Nebraska - Lincoln
The Mathematics Department places a very high value on quality teaching, and since 1991 has honored outstanding teaching by a graduate teaching assistant with a cash award.