Anna Brosowsky

 Lincoln, NE–USA   ✉ abrosowsky2@unl.edu   🔗 anna-brosowsky.github.io   🔗 orcid.org/0000-0001-5387-3049

Research Interests

I work in commutative algebra, with applications to algebraic geometry. I am especially interested in singularities in positive characteristic. I am also working towards incorporating combinatorial ideas into my work

Employment

University of Nebraska–Lincoln   Aug 2024–Present
NSF Postdoctoral Associate   Lincoln, NE

Education

University of Michigan, Ph.D. in Mathematics   Sep 2018–May 2024
Advisor: Karen E. Smith   Ann Arbor, MI
Dissertation: The Cartier Core Map and F-Graded Systems

- M.S. in Mathematics received December 2022

Cornell University, B.A. in Mathematics   Aug 2014–May 2018
Summa Cum Laude   Ithaca, NY

- Minor in Computer Science

Publications and Preprints

Publications

Geometry of smooth extremal surfaces   2024
A. Brosowsky, J. Page, T. Ryan, and K. E. Smith
Journal of Algebra, Vol 646, pp 376-411. arXiv:2110.15908 ↗

The Cartier core map for Cartier algebras   2023
A. Brosowsky
Journal of Algebra, Vol 630, pp 274-296. arXiv:2203.01911 ↗

Parametrizations of k-nonnegative matrices: cluster algebras and k-positivity tests   2020
A. Brosowsky, S. Chepuri, and A. Mason
Journal of Combinatorial Theory, Series A, Vol 174, article 105217. arXiv:1712.05037 ↗

Preprints & In preparation

Cartier algebras through the lens of p-families   In preparation
A. Brosowsky

Limit F-signature functions of two-variable binomial hypersurfaces   2025
A. Brosowsky, I. Coskun, S. Pande, and K. Tucker   *Submitted*
arxiv:2504.18656 ↗

Maximal skew sets of lines on a Hermitian surface and a modified Bron-Kerbosch algorithm   2022
A. Brosowsky, H. Du, M. Krishna, S. Nair, J. Page, and T. Ryan   *Submitted*
arxiv:2211.16580 ↗

Awards and Certificates

U-M Graduate Teacher Certificate [↗]	2025
NSF Mathematical Sciences Postdoctoral Research Fellowship	2024
Rackham Outstanding GSI Award	2024
1st place in Erdős Bootcamp Data Science Competition	2022
Gabrielle & Sophie Rainich Fellowship	2022
Outstanding Poster Award, MAA Undergrad Poster Session, JMM	2018
Elected to Phi Beta Kappa	2018

Talks and Presentations

Conference Talks

VII Congreso Nacional del Colegio de Matemáticos del Perú, Virtual	October 2025
AMS Spring Central Sectional, University of Kansas	March 2025
Women in Commutative Algebra, The Fields Institute	March 2025
KUMUNU, University of Missouri	September 2024
URiCA, University of Nebraska–Lincoln	May 2024
Special Session on Recent Developments in Commutative Algebra at the JMM	January 2024
AMS Fall Central Sectional, Creighton University	October 2023
AMS Spring Southestern Sectional, Georgia Tech	March 2023
AMS Fall Western Sectional, University of Utah	October 2022
Women in Mathematics in the Northeast Conference, Smith College	September 2016
Young Mathematician's Conference, Ohio State University	August 2016

Seminar Talks

Boise State Topics in Algebra, Topology, Etc., Research Seminar	September 2025
Arizona State University Number Theory & Algebra Seminar	November 2024
University of Nebraska–Lincoln Commutative Algebra Seminar	October 2024
Centro de Investigación en Matemáticas Alg. Geometry & Comm. Algebra Seminar	November 2023
University of Utah Commutative Algebra Seminar	October 2023
University of Michigan Commutative Algebra Seminar	September 2023
University of Illinois at Chicago Commutative Algebra Seminar	October 2022
University of Michigan Commutative Algebra Seminar	September 2022
University of New Mexico Algebra & Geometry Seminar	September 2022

Posters

AWM Poster Session at the JMM	January 2023
KUMUNU Poster Session	May 2022
MAA Undergraduate Poster Session at the JMM	January 2018

Teaching

University of Nebraska–Lincoln

Fall 2025	Math in the City (Math 435)	Instructor of Record

University of Michigan

Winter 2024	Calculus I (Math 115)	Instructor of Record
Fall 2023	Calculus I (Math 115)	Instructor of Record
July 2023	Prep for Calc 2, M-STEM Academies [↗]	Lead Instructor

Fall 2022	Commutative Algebra (Math 614)	Grader
July 2022	Prep for Calc 2, M-STEM Academies ↗	Lead Instructor
Fall 2020	Calculus I (Math 115)	Instructor of Record
Winter 2020	Calculus I (Math 115)	Instructor of Record
Fall 2019	Calculus II (Math 116)	Instructor of Record
Winter 2019	Calculus I (Math 115)	Instructor of Record
Fall 2018	Calculus I (Math 115)	Instructor of Record

Cornell University

Spring 2018	Intro to Analysis of Algorithms (CS 4820)	Teaching Assistant
Fall 2017	Intro to Analysis of Algorithms (CS 4820)	Teaching Assistant
Spring 2017	Intro to Analysis of Algorithms (CS 4820)	Teaching Assistant
Fall 2016	Intro to Computing in Python (CS 1110)	Teaching Assistant
Spring 2016	Intro to Computing in Python (CS 1110)	Teaching Assistant
Fall 2015	Intro to Computing in Python (CS 1110)	Teaching Assistant
Spring 2015	Intro to Computing in Python (CS 1110)	Teaching Assistant

Professional Activities

Fall 2025	UNL Commutative Algebra Seminar	Co-organizer
Fall 2025	UNL Cohomology Reading Group	Co-organizer
June 2025	SMS 2025: An Intro to Recent Trends in Commutative Algebra	Teaching Assistant

Assisted with worksheets and helped students during problem sessions.

March 2024	Teaching workshop: Handling microaggressions in the classroom	Co-organizer
Fall 2023–Win. 2024	UM Commutative Algebra Seminar	Co-organizer
Fall 2022–Win. 2024	UM Student Commutative Algebra Seminar	Co-organizer
Fall 2022	UM Math Intro Program	Grad Student Mentor

Instructor support position. Duties included: providing new instructor observations & feedback, assisting with teaching team organization, and substitute teaching.

Fall 2022–Win. 2024	UM Math Grad Student Advisory Committee	Member

Bring grad student issues & concerns to Math Graduate Chair.

Winter 2022	UM Lab of Geometry	Mentor

Co-supervised an undergrad research project on configurations of lines on smooth extremal surfaces; led to a preprint which has been submitted to a journal.

Fall 2021	Calculus I (Math 115)	Grad Co-coordinator

Course organizational position. Duties included: writing homework assignments & exam questions, and providing new instructor observations & feedback.

Fall 2020–Win. 2024	Twoples Directed Reading Program ↗	Mentor

Each semester, get paired with an undergrad mentee from a school without a local DRP. Meet weekly on Zoom to supervise reading & final project.

May 2020–May 2022	UM Foundational Course Initiative	Team Member

Part of a team revising Calculus I with a focus on student support. Helped with design & implementation of three new mastery assessments.

July 2018	MathPath Summer Camp	Counselor

Assisted with office hours, math questions, and classes. Co-designed & co-taught a one week course on network flows. Supervised and looked after well-being of 11–14 year old campers.