Ryan Watson Curriculum Vitae

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Education

2022–Present	**University of Nebraska-Lincoln** PhD Candidate in Mathematics Advised by Eloísa Grifo
2022–2023	**University of Nebraska-Lincoln** M.S. in Mathematics
2020–2022	**University of California, Riverside** PhD Student - Passed Qualifying Exams
2015–2019	**University of California, Los Angeles** B.S. Double Major in Mathematics and Statistics

Appointments

Spring 2024	**SLMath** Program Associate

Research Interests

Broadly speaking, I am interested in commutative algebra and homological algebra and their intersections with algebraic geometry.

Papers

June 2025	**Cohomological support varieties under local homomorphisms** (submitted) arXiv:2506.10757

External Talks and Presentations

January 2026	JMM: Special Session on Commutative Algebra and its Interactions with Geometry and Combinatorics: *Cohomological Support Varieties Under Local Homomorphisms*
October 2025	KUMUNU *Cohomological Support Varieties Under Local Homomorphisms*
October 2025	AMS 2025 Fall Central Sectional Meeting: *Cohomological Support Varieties Under Local Homomorphisms*
April 2025	Syracuse Algebra Seminar: *Cohomological Support Varieties Along Surjections*
April 2025	Syracuse WALKS: *An Introduction to Cohomological Support Varieties*
March 2024	SLMath COMA/NAG Joint Graduate Student Seminar: *Cohomological Support Varieties and the Derived Category of a Complete Intersection*

Internal Talks and Presentations

September 2025	UNL Commutative Algebra Reading Seminar: *What is an (A_∞) Algebra?*
September 2025	UNL Commutative Algebra Seminar: *Cohomological Support Varieties Under Local Homomorphisms*
August 2025	UNL Commutative Algebra Reading Seminar: *An Introduction to Tensor Triangular Geometry* (Three part lecture series)
February 2025	UNL Commutative Algebra Seminar: *Cohomological Support Varieties Along Surjections*
February 2025	UNL Commutative Algebra Reading Seminar: *Hochschild Cohomology in Commutative Algebra (Part 2)*
January 2025	UNL Commutative Algebra Reading Seminar: *Hochschild Cohomology in Commutative Algebra (Part 1)*
October 2024	UNL Commutative Algebra Reading Seminar: *On a Resolution of Eisenbud and Shamash*
July 2024	UNL Commutative Algebra Reading Seminar: *Support Varieties in Commutative Algebra* (Three part lecture series)
September 2023	UNL Commutative Algebra Seminar: *A Classification of Complete Intersections using Differential Graded Algebras*
May 2023	UNL Commutative Algebra Reading Seminar: *Differential Graded Algebras and Tate Resolutions*
December 2022	UNL Commutative Algebra Reading Seminar: *An Introduction to Sheaves and Their Stalks*

Conferences and Events Organized

2025 – 2026	Co-organizers of the UNL Directed Reading Program
2024 – 2025	Co-organizer of URiCA 2025
2024 – 2025	Co-organizer of the UNL Directed Reading Program
2023 – 2024	Co-organizer of URiCA 2024
2023 – 2024	Co-organizer of the UNL Directed Reading Program
2022 – 2023	Co-organizer of URiCA 2023

Teaching Experience

Instructor, *University of Nebraska-Lincoln*

Summer 2024	Math 208 – Calculus III
Spring 2023	Math 203 – Contemporary Math
Fall 2022	Math 100A – Intermediate Algebra

Teaching Assistant, *University of Nebraska-Lincoln*

Spring 2025	Math 314 – Linear Algebra
Fall 2024	Math 208 – Calculus III
Fall 2023	Math 208 – Calculus III

Teaching Assistant, *University of California, Riverside*

Spring 2022	Math 031 – Applied Linear Algebra
Winter 2022	Math 009B – First Year Calculus
Winter 2022	Math 010B – Calculus of Several Variables
Winter 2022	Math 011 – Discrete Structures
Fall 2021	Math 006B – Intro to College Math
Fall 2021	Math 011 – Discrete Structures
Fall 2021	Math 046 – Intro to ODEs
Winter 2021	MATH 022 – Calculus for Business Majors
Winter 2021	Math 131 – Linear Algebra 1
Fall 2020	MATH 009A – First Year Calculus
Fall 2020	MATH 149A – Probability and Mathematical Statistics

Instructor, *Math Academy (Pasadena, CA)*

Summer 2020	Multivariable Calculus Prep.
2019-2020	Substituted for Differential Equations, Linear Algebra, and Abstract Algebra.

Mentoring

Spring 2025	Assisted with an undergraduate research project on volleyball analytics under the direction of Dr. Judy Walker.
Fall 2022 - Spring 2025	Led a directed reading project with an undergraduate at UNL every semester. Topics covered included commutative algebra, homological algebra, and algebraic topology.

Outreach/Service

Spring 2025	Served on the second year math task force. This committee works on developing and improving the calculus III, differential equations, and linear algebra courses at UNL.
Fall 2024	Served on the second year math task force.
Spring 2024	Was the social activities representative for program associates at SLMath.
Winter 2023	Volunteered for the Nebraska Conference for Undergraduate Women in Mathematics.

Conferences/Programs Attended

August 2025	Summer CAMP in Lincoln, Nebraska
May 2025	50th Arkansas Spring Lecture in Fayetteville, Arkansas
April 2025	RayFest in Lincoln, Nebraska
March 2025	Commutative Algebra in Mixed Characteristic in Lincoln, Nebraska
March 2025	CA+ in Ames, Iowa
September 2024	Betti Numbers in Commutative Algebra and Equivariant Homotopy Theory in Bielefeld, Germany
June 2024	Rank Conjectures Across Algebra and Topology in Copenhagen, Denmark
April 2024	Recent Developments in Commutative Algebra at SLMath
January 2024	Introductory Workshop: Commutative Algebra at SLMath
January 2024	Connections Workshop: Commutative Algebra at SLMath
September 2023	KUMUNU in Columbia, Missouri
August 2023	BrianFest in Lincoln, Nebraska
August 2023	CAMP (Commutative Algebra Market Preparedness) in Lincoln, Nebraska
June 2023	MSRI/SLMath Summer School at Notre Dame
May 2023	URiCA in Lincoln, Nebraska
April 2023	CA+ in Minneapolis, Minnesota
October 2022	KUMUNU in Lincoln, Nebraska
June 2022	Pan-American School in Commutative Algebra in Guanajuato, Mexico