

ERIC WALKER

CURRICULUM VITAE

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EDUCATION

PhD Candidate in Mathematics; advisor: Prof. Lance Edward Miller.	University of Arkansas	in progress
MS in Mathematics.	University of Arkansas	May 2018
BA cum laude with distinction in Mathematics and in Spanish; math advisor: Prof. Christopher Camfield; thesis: <i>An Open Door to Geometric Measure Theory</i> .	Hendrix College	May 2016

HONORS AND AWARDS

William Alton Anderson Endowed Scholarship in Arts & Sciences	University of Arkansas	2019-2020
Julia Hicks Endowed Graduate Teaching Award	University of Arkansas	2018-2019
Lawrence Jessor Toll, Jr. Endowed Fund	University of Arkansas	2017-2018

RESEARCH INTERESTS

Homological and homotopical algebra, singularities in positive characteristic, derived methods in commutative algebra and algebraic geometry.

TOPICS CLASSES/READING COURSES

- **Topics in Algebra**: : Fall 2020 - Spring 2021. !!!!!!!!!!!!!!!!!!!!!!!!!!!!!
- **Topics in Algebra: Singularities in positive characteristic**: Kunz' theorem, Frobenius splittings, local cohomology and Frobenius actions, deformation questions, tight closure, applications to symbolic powers. Fall 2019 - Spring 2020.
- **Reading Course: Derived algebraic geometry**: simplicial and cosimplicial objects, infinity categories, model categories, the Dold-Kan correspondence, derived schemes. Fall 2019 - Spring 2020.
- **Topics in Algebra: Locally ringed spaces**: algebraic and complex analytic geometry, sheaf and Čech cohomology, cohomology of Serre twists, GAGA. Summer 2019.
- **Topics in Topology: Symplectic geometry**: symplectic forms, Darboux theorems, Donaldson's theorem, pseudo-holomorphic curves, contact geometry, Weinstein and Stein manifolds. Fall 2018 - Spring 2019.
- **Topics in Analysis: Several complex variables**: Reinhardt domains, Hartogs' theorem, the Levi problem, integral representations, pseudo-convexity, domains of holomorphy. Fall 2018 - Spring 2019.
- **Reading Course: Homological algebra**: chain complexes, abelian categories, resolutions, derived functors, homological dimension theory. Fall 2018 - Spring 2019.
- **Topics in Algebra: p -adic numbers**: non-archimedean metric spaces, completions, Hensel's lemma, Cohen structure theorem, perfectoid fields. Summer 2018.
- **Topics in Topology: Combinatorial torsion**: Whitehead groups, lens spaces, links & Alexander polynomials, Whitehead torsion, Rademeister torsion, the Hauptvermutung. Summer 2017.

TALKS

Jet Spaces / Arc Spaces Learning Seminar (UCSD, virtual) <i>Jets, arcs, and cylinders</i>	19 May 2021
CARES: Commutative Algebra Regional Expository Seminar (virtual) <i>Macaulay2 Panel</i> (joint with Michael DeBellevue, Alexander Duncan, David Smith)	15 April 2021
CARES: Commutative Algebra Regional Expository Seminar (virtual) <i>Jet and arc spaces from a commutative algebra point of view</i>	11 March 2021
The Curry Seminar: Algebra and topology seminar (internal) <i>The Silmarillion: K-Theory</i>	13 October 2020
Graduate student colloquium (internal) <i>What's on the mind of air traffic controllers and algebraic geometers? (An introduction to jet spaces)</i>	11 March 2020
Spectral sequence seminar (internal) <i>Differentially bigraded algebras and spectral sequence constructions</i>	31 July 2019
Spectral sequence seminar (internal) <i>Perfectly balanced: Using spectral sequences to balance Tor and Ext, and the Universal Coefficient Theorem</i>	25 July 2019

TEACHING EXPERIENCE

Calculus 1 instructor/coordinator	Summer 2020 (coord.), Summer 2019 (coord.), Summer 2018, Summer 2017.
Survey of Calculus instructor	Summer 2021, Spring 2021.
College Algebra instructor	Fall 2020, Spring 2020, Fall 2019, Spring 2019, Fall 2018, Spring 2018, Fall 2017.
Math Spot tutor	Since Fall 2016.
Calculus 1 teaching assistant	Spring 2017, Fall 2016.

SERVICE

- Coorganized and participated in *STAG: Students Teaching Algebraic Geometry*, a student-ran algebraic geometry discussion seminar.