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EMPLOYMENT

University of Arkansas 2020-present
Visiting Assistant Professor

EDUCATION

Ph.D. Mathematics 2015-2020
University of Kansas

Advisor: Hailong Dao

Thesis: Homological Properties of Structures in Commutative Algebra and Algebraic Combinatorics

M.A. Mathematics 2013-2015
Wake Forest University

Advisor: Frank Moore

Thesis: Noncommutative Complete Isolated Singularities

B.S. Mathematics (magna cum laude) 2009-2013
Berry College

PUBLISHED AND ACCEPTED WORKS

- [1] J. Lyle, J. Montaña, K. Sather-Wagstaff, Exterior powers and Tor-persistence, *Journal of Pure and Applied Algebra* (2022), <https://www.sciencedirect.com/science/article/pii/S0022404921002310>
- [2] B. Holmes, J. Lyle, Rank selection and depth conditions for balanced simplicial complexes, *Electronic Journal of Combinatorics* (2021), <https://www.combinatorics.org/ojs/index.php/eljc/article/view/v28i2p28>.
- [3] J. Lyle, J. Montaña, Extremal growth of Betti numbers and trivial vanishing of (co)homology, *Transactions of the American Mathematical Society*, Volume 373 (2020), pp. 7937-7958. <https://www.ams.org/journals/tran/0000-000-00/S0002-9947-2020-08189-6/>
- [4] T. Kobayashi, J. Lyle, R. Takahashi, On the number of indecomposable Cohen–Macaulay modules which are not locally free on the punctured spectrum, *Journal of Pure and Applied Algebra*, Volume 224 (2020) no. 7. <https://www.sciencedirect.com/science/article/pii/S0022404920300086>
- [5] H. Dao, J. Doolittle, K. Duna, B. Goeckner, B. Holmes, J. Lyle, Higher nerves of simplicial complexes, *Algebraic Combinatorics*, Volume 2 (2019) no. 5, pp. 803-813. https://alco.centre-mersenne.org/item/ALCO_2019__2_5_803_0
- [6] H. Dao, M. Eghbali, J. Lyle, Hom and Ext, revisited, *Journal of Algebra*, Volume 571 (2019), pp. 75-93. <https://doi.org/10.1016/j.jalgebra.2018.12.006>.

- [7] H. Dao, J. Doolittle, J. Lyle, Minimal Cohen-Macaulay simplicial complexes, *SIAM J. Discrete Math.* (2020), 34(3), 1602-1608. (7 pages) <https://epubs.siam.org/doi/abs/10.1137/19M1275164>

TEACHING

University of Arkansas

- Math 2043 (Survey of Calculus), Fall 2021, Spring 2022, Fall 2022
- Math 2564 (Calculus II), Fall 2020, Spring 2021

University of Kansas

- Math 126 (Calculus II), Recitation Instructor, Spring 2019
- Math 104 (Precalculus), Instructor, Fall 2016, Fall 2018
- Math 115 (Applied Calculus), Instructor, Fall 2017, Spring 2018
- Math 127 (Calculus III), Recitation Instructor, Spring 2017

Wake Forest

- Math 121 (Linear Algebra), Teaching Assistant, Spring 2015
- Math 117 (Discrete Mathematics), Teaching Assistant, Fall 2014
- Math 113 (Multivariable Calculus), Teaching Assistant, Spring 2014
- Math 111 (Calculus I), Teaching Assistant, Fall 2013

AWARDS

Paul F. Conrad Scholarship

University of Kansas

2019

Awarded annually to one or two mathematics graduate students for academic merit

Chancellor's Fellowship

University of Kansas

2015-2020

Department Summer Research Scholarship

University of Kansas

2015-2019

Outstanding Graduate Student Award

Wake Forest

2014

Barton Mathematics Award

Berry College

2013

INVITED TALKS

University of Michigan Commutative Algebra Seminar

April 2022

Virtual Session

"Generalizations of Ulrich Modules and Rigidity Theorems"

Clemson University Algebra and Discrete Math Seminar

November 2021

Virtual Session

"Recent progress on the Auslander-Reiten and Huneke-Weigand Conjectures"

Iowa State University Commutative Algebra Seminar

April 2021

Virtual Session

"Constructions in Combinatorial Commutative Algebra, Old and New"

AMS Special Session on Commutative Algebra

April 2021

Virtual Session

"Rank Selection and Depth Conditions for Squarefree Monomial Ideals"

Wake Forest University Colloquium

March 2021

Virtual Session

“Constructions in Combinatorial Commutative Algebra, Old and New” AMS Special Session on Homological Methods in Algebra <i>Virtual Session</i>	October 2020
“Tor-persistence and related conjectures” AMS Special Session on Commutative Algebra <i>Virtual Session</i>	April 2020
“Maximal Cohen-Macaulay modules that are not locally free on the punctured spectrum” University of Nebraska, Lincoln Commutative Algebra Seminar <i>Lincoln, NE</i>	March 2020
“Extremal growth of Betti numbers and rigidity of (co)homology” University of Nebraska, Lincoln Commutative Algebra Seminar <i>Lincoln, NE</i>	March 2020
“Maximal Cohen-Macaulay modules that are not locally free on the punctured spectrum” Purdue Commutative Algebra Seminar <i>West Lafayette, IN</i>	October 2019
“Generalizations of Ulrich Modules and Rigidity Theorems” AMS Special Session on Homological and Characteristic $p > 0$ Methods in Commutative Algebra <i>Madison, WI</i>	September 2019
“Generalizations of Ulrich Modules and Rigidity Theorems” KUMUNU Jr. <i>University of Nebraska, Lincoln NE</i>	March 2019
“Cohen-Macaulay Rings of Finite CM_+ -Representation Type” AMS Special Session on Commutative and Combinatorial Algebra <i>Auburn University, Auburn AL</i>	March 2019
“Cohen-Macaulay Rings of Finite CM_+ -Representation Type” AMS Special Session on Commutative Algebra <i>University of Arkansas, Fayetteville AR</i>	November 2018
“ c -Ulrich Modules” AMS Special Session on Multiplicities and Volumes: An Interplay Among Algebra, Combinatorics, and Geometry <i>Ann Arbor, MI</i>	October 2018
“ c -Ulrich Modules” KUMUNU Jr. <i>University of Nebraska, Lincoln NE</i>	April 2018
“Hom and Ext, Revisited”	

SERVICE

- Co-organizer of the commutative algebra seminar at the University of Arkansas, 2020-present.
- Co-creator and Co-organizer of CARES, 2020-2022: CARES is a regional seminar series uniting Arkansas, Kansas, Missouri, Nebraska, and Oklahoma State, and which focuses on expository talks given by graduate students. I served, along with Alessandra Costantini and Kyle Maddox, as a global advisor and organizer to the local organizers, who are senior graduate students at their respective institutions.
- Referee for Rocky Mountain J. Math and European Journal of Combinatorics, 2020-present.
Referee for Communications in Algebra, 2021-present.