

Research interests: Algebraic Geometry, Combinatorics, Tropical Geometry.

EMPLOYMENT

University of Michigan Donald J. Lewis Assistant Professor Mentor: David Speyer.	Fall 2025–
Institute for Advanced Study Member Mentor: June Huh.	2023–2025

EDUCATION

Brown University , Ph.D. in Mathematics Advisor: Melody Chan.	2019–2023
Yale University , M.Sc. in Mathematics Lang Fellow.	2017–2019
Harvey Mudd College B.Sc. in Mathematics with Honors and Distinction Advisor: Dagan Karp.	2013–2017

PUBLICATIONS

Multimatroids and rational curves with cyclic action with Emily Clader, Chiara Damiolini, Christopher Eur, Daoji Huang. International Mathematical Research Notices. (2024)
K-rings of wonderful varieties and matroids with Matt Larson, Sam Payne, Nicholas Proudfoot. Advances in Mathematics 441 . (2024)
Equivariant log-concavity of independence sequences of claw-free graphs Séminaire Lotharingien de Combinatoire 89B , 6. (2023)
Wonderful compactifications and rational curves with cyclic action with Emily Clader, Chiara Damiolini, Rohini Ramadas. Forum of Mathematics, Sigma 11 . (2022)
Equivariant log-concavity of graph matchings Algebraic Combinatorics 6 (3). (2023)
Permutohedral complexes and rational curves with cyclic action with Emily Clader, Chiara Damiolini, Daoji Huang, Rohini Ramadas. manuscripta mathematica. (2022)

Intersecting psi-classes on tropical Hassett spaces

with Marvin Anas Hahn.

Combinatorial Theory **2**(3). (2022)

Relative Bott–Samelson varieties

La Matematica **2**. (2023)

Topology of tropical moduli spaces of weighted stable curves in higher genus

with Siddarth Kannan, Stefano Serpente, Claudia Yun.

Advances in Geometry, **23**(3). (2023)

Chow ring of heavy/light Hassett spaces via tropical geometry

with Siddarth Kannan, Dagan Karp.

Journal of Combinatorial Theory, Series A **178C**. (2021)

PREPRINTS

Kapranov degrees

with Joshua Brakensiek, Christopher Eur, Matt Larson.

arXiv 2308.12285.

FELLOWSHIPS, GRANTS AND AWARDS

NSF Grant DMS-1926686	2023–2025
Coline M. Makepeace Fellowship, Brown University	2021–2022
Robert Willets Carle Scholarship, Yale University	2018–2019
Kenneth and Mary Wang Fellowship, Yale University	2017–2018
Lang Fellowship, Department of Mathematics, Yale University	2017–2019
Harvey S. Mudd Merit Award (annually), Harvey Mudd College	2013–2017
Yu Yuen Kit So International Scholarship, Harvey Mudd College	2013–2017
Dean’s List, Harvey Mudd College (all semesters)	2013–2017
China National Linguistics Olympiad 3rd Place	2013
China National Linguistics Olympiad Team 2nd Place	2013

INVITED TALKS

<i>LA Combinatorics Forum</i> UCLA	May 2025
<i>Algebraic Geometry Seminar</i> University of Pennsylvania	Apr 2025
AMS Special Session on “ <i>Cohomology of Arithmetic Groups, Mapping Class Groups, and Moduli Spaces</i> ” Joint Mathematics Meetings, Seattle, USA	Jan 2025
Workshop on “ <i>Geometry of Matroids</i> ” Institute for Advanced Study	Oct 2024
“ <i>What is...?</i> ” <i>Seminar</i> Institute for Advanced Study	Oct 2024
Workshop on “ <i>Moduli spaces of curves, moduli spaces of graphs and graph complexes</i> ” ETH Zürich, Switzerland	Sep 2024

Workshop on “ <i>Matroid Theory</i> ” Suzhou University, Suzhou, China	Jul 2024
Workshop on “ <i>Arrangements, Matroids and Logarithmic Vector Fields</i> ”, Oberwolfach, Germany	Jun 2024
<i>Algebraic Geometry Seminar</i> Columbia University	Apr 2024
<i>Algebra Seminar</i> Tufts University	Apr 2024
“ <i>What is...?</i> ” Seminar Institute for Advanced Study	Mar 2024
<i>Mathematical Conversations</i> Institute for Advanced Study	Mar 2024
<i>Combinatorics Seminar</i> (online) University of Minnesota	Feb 2024
<i>F₁ World Seminar</i> (online)	Jan 2024
Special Session on “ <i>Combinatorial perspectives on algebraic curves and their moduli</i> ” Joint Mathematics Meetings, San Francisco, USA	Jan 2024
Preparatory Lectures for <i>Chow Lectures</i> Max Planck Institute, Leipzig, Germany	Oct 2023
Workshop on “ <i>Curves: Algebraic, Tropical, and Logarithmic</i> ” Banff International Research Station, Canada	Aug 2023
<i>The 35th Formal Power Series and Algebraic Combinatorics (FPSAC 2023)</i> University of California, Davis	Jul 2023
Workshop on “ <i>GEMS in Combinatorics</i> ” American Institute of Mathematics, USA	Mar 2023
Workshop on “ <i>Algebraic Aspects of Matroids</i> ” Banff, Canada Banff International Research Station, Canada	Mar 2023
Lecture series on “ <i>Growing up in Sciences</i> ” Bowdoin College	Feb 2023
Association of Women in Mathematics Student Seminar (online) University of Pittsburgh	Feb 2023
<i>Combinatorics Seminar</i> University of Michigan	Feb 2023
<i>Matroid Seminar</i> (online) Fields Institute	Dec 2022
<i>Algebra and Algebraic Geometry Seminar</i> University of Washington	Nov 2022
<i>MIT-Harvard-MSR Combinatorics Seminar</i> Harvard University	Nov 2022
AMS Special Session on “ <i>Combinatorial Algebraic Geometry</i> ” University of Massachusetts, Amherst	Oct 2022
<i>AWM Research Symposium</i> University of Minnesota	Jun 2022
<i>RATCOW Seminar</i> University of Oregon	Jun 2022
<i>BATMOBILE</i> Brown University	Jun 2022

<i>Combinatorial and Nonlinear Day</i> Brown University	Apr 2022
<i>Joint Mathematics Meetings AWM Special Session (online)</i>	Apr 2022
<i>Canadian Math Society: Combinatorics and Geometry of Moduli Spaces (online)</i>	Dec 2021
<i>Front Range Algebraic Geometry and Number Theory</i> Colorado State University	Sep 2021
<i>SIAM Conference on Applied Algebraic Geometry (online)</i>	Aug 2021
<i>Moduli Across the Pandemic (online)</i>	Apr 2021
<i>Tropical Geometry in Frankfurt (TGiF) Seminar (online)</i>	Apr 2021
AMS Spring Eastern Sectional Meeting on “ <i>Moduli of Curves</i> ” (online)	Mar 2021
<i>Algebra Seminar (online)</i> Brown University	Nov 2020
<i>American Graduate Student Algebraic Geometry Seminar (online)</i>	Oct 2020

SERVICE

Referee for

Duke Mathematical Journal
European Journal of Combinatorics
International Mathematics Research Notices
Journal of the London Mathematical Society
Journal für die reine und angewandte Mathematik (Crelle’s Journal)*
Mathematische Zeitschrift[†]
Proceedings of the American Mathematical Society
Séminaire Lotharingien de Combinatoire

(* means quick opinions only. † means detailed reports after giving quick opinions.)

Organization

IAS Graph Complexes Learning Seminar, Organizer	Fall 2024
IAS School of Mathematics Monthly Women’s Lunch, Co-organizer	2023–2025
IAS “What is...?” Seminar, Co-organizer	2023–2025
AMS Student Chapter at Brown University, Chair	2019–2021
Diversity and Inclusiveness Committee at Brown University, Member	2019–2020
Directed Reading Program at Brown University, Organizer	2019–2021
Directed Reading Program at Yale University, Co-organizer with Fernando Al Assal	2017–2018
Intersection: Womxn in Mathematics at Yale University, Co-organizer	2018
Yale Graduate and Professional Student Senate, Senator	2017–2018
Harvey Mudd College Math Club, President	2016–2017

TEACHING

University of Michigan, Instructor

Math 275 Introduction to Cryptography	Fall 2025
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Brown University Sheridan Teaching Certificate I

Fall 2021

Brown University, Teaching Assistant

Math 90 Introduction to Calculus	Spring 2023
Math 100 Calculus Part II	Fall 2022
Math 100 Calculus Part II	Spring 2022
Math 100 Calculus Part II	Spring 2021
Math 100 Calculus Part II	Fall 2020

Canada/USA Mathcamp, Mentor	Summer 2019
Introduction to Group Theory	
Young tableaux and Representation Theory	
Young tableaux and Combinatorics	
Young tableaux and Probability	
Canada/USA Mathcamp, Mentor	Summer 2018
Algebraic Number Theory	
Geometric Group Theory	
Introduction to Modular Forms	
Tropical Plane Curves	
Rational Points on Elliptic Curves	
Yale University, Teaching Assistant	
Math 225 Linear Algebra and Matrix Theory	Fall 2018
Math 112 Single Variable Calculus	Spring 2018

MENTORING

Summer Undergraduate Math Research at Yale	2020
Dawit Mengesha, Robert Miranda, Brian Sun. Co-mentor: Max Kutler.	
<i>Topological zeta functions of matroids.</i>	
Canada/USA Mathcamp Learning Projects	Summer 2019
Ilaria Seigal.	
Alice Jenkins, Jeremy Zhou. <i>Schubert calculus.</i>	
Reed Jacobs. <i>Primes of the form $x^2 + ny^2$.</i>	
Simran Khunger, Rupert Li. <i>Enumerative Geometry and Young Tableaux</i>	
Serena An. <i>Group actions and Sylow's theorems.</i>	
Brown Mathematics Directed Reading Program	2019
Deven Carmichael, Joseph Hlavinka. <i>Ideals, Varieties and Algorithms.</i>	
Dominick Joo, Elliott Lehrer, Joshua Lebo. <i>Foundations of Algebraic Geometry.</i>	
Women in Sciences at Yale	2018
Alara Değirmenci.	

OUTREACH

Princeton Noetherian Rings Seminar	Apr 2024
Brown Math Slam	Apr 2023
Growing up in Sciences Lecture Series, Bowdoin College	Feb 2023
Summer Undergraduate Math Research at Yale (SUMRY) Colloquium	Jul 2020
Yale Undergraduate Mathematics Society (YUMS) Colloquium	Nov 2019
Department Undergraduate Group (DUG) Colloquium at Brown	Oct 2019

OTHER SCIENTIFIC POSITIONS

Google Research. Mountain View, CA.	Summer 2016
Research Intern. Mentors: Caroline Pantofaru, Malcolm Slaney	
Howard Hughes Medical Institute. Pomona, CA.	Summer 2014
Research Assistant. Mentor: Blerta Shtylla.	
Summer Science Program. Socorro, NM.	Summer 2012
Asteroid 1998QS52 Orbit Determination (Harvard-Smithsonian Center for Astrophysics archived)	