

# Curriculum Vitae

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## Professional appointments

2024–2026 Postdoctoral Associate, Carnegie Mellon University  
2024 University of California President’s Postdoctoral Fellow, University of California, San Diego  
2021–2024 Research Training Group Postdoctoral Associate, University of Texas at Austin

## Education

PhD in Mathematics, University of Kansas, 2021  
MS in Mathematics, University of Wisconsin–Milwaukee, 2013  
BS *cum laude* in Mathematics, Beloit College, 2010

## Research interests

Ergodic and probability theory on locally compact second countable (lcsc) groups, map construction between measure preserving dynamical systems, the Poisson point process and its applications to the geometry of lcsc groups.

## Preprints and publications

1. Poisson–Voronoi tessellations and fixed price in higher rank, with Mikołaj Frączyk and Sam Mellick. Submitted. [arXiv:2307.01194](https://arxiv.org/abs/2307.01194)
2. Isomorphisms of Poisson systems over locally compact groups. *Annals of Probability*, 51(6):2158–2191, 2023. DOI:10.1214/23-AOP1642
3. Equivariant thinning over a free group, with Terry Soo. *Ergodic Theory and Dynamical Systems*, 40(4):1057–1067, 2020. DOI:10.1017/etds.2018.74
4. Finitary isomorphisms of Poisson point processes, with Terry Soo. *Annals of Probability*, 47(5):3055–3081, 2019. DOI:10.1214/18-AOP1332
5. Reduced cozero-divisor graphs of commutative rings, with Josh Cain and Lindsey Mathewson. *International Journal of Algebra*, 5(17-20):935–950, 2011.
6. Graphs and principal ideals of finite commutative rings, with Josh Cain and Lindsey Mathewson. *Rose–Hulman Undergraduate Mathematics Journal*, 11(2), 96–105, 2010.

## Invited talks

06/2024 Poisson–Voronoi tessellations and fixed price in higher rank, Actions of Large Groups, Geometric Structures, and the Zimmer Program Workshop, Institut Henri Poincaré  
06/2024 Poisson–Voronoi tessellations and fixed price in higher rank, Université Paris–Saclay, Séminaire SuPerGRandMa  
05/2024 Poisson–Voronoi tessellations and fixed price in higher rank, University of California, Los Angeles, Logic Colloquium

- 03/2024 The Poisson point process and an application to semisimple symmetric spaces, Rice University, Analysis Seminar
- 01/2024 Poisson–Voronoi tessellations and fixed price in higher rank, Carnegie Mellon University, Mathematical Logic Seminar
- 01/2024 The Poisson point process and an application to semisimple symmetric spaces, Boston College, Geometry, Topology, and Dynamics Seminar
- 10/2023 Poisson–Voronoi tessellations and fixed price in higher rank, Louisiana State University, Topology Seminar (online)
- 10/2023 Poisson–Voronoi tessellations and fixed price in higher rank, University of California, San Diego Group Actions Seminar
- 10/2023 Poisson–Voronoi tessellations and fixed price in higher rank, Los Angeles Probability Forum
- 06/2023 Poisson systems and fixed price in higher rank, Dynamics Summer School, Northwestern University
- 05/2023 Poisson–Voronoi tessellations and fixed price for higher rank lattices, McGill Descriptive Dynamics and Combinatorics Seminar (online)
- 03/2023 Poisson–Voronoi tessellations and the fixed price property in higher rank lattices, Texas A&M Groups and Dynamics Seminar
- 03/2023 Isomorphisms of Poisson systems over locally compact groups, South Eastern Logic Symposium, University of Florida
- 07/2022 Isomorphisms of Poisson systems over locally compact groups, Graduate Mini-school in Groups and Dynamics, University of Texas at Austin
- 03/2022 Isomorphisms of Poisson systems over locally compact groups, Workshop on Dynamical Systems and Related Topics, University of Maryland
- 12/2020 Monotone factor maps and finitary isomorphisms, University of Texas at Austin Groups and Dynamics Online Seminar
- 03/2020 Finitary isomorphisms of Poisson point processes, University of California, San Diego Group Actions Seminar
- 01/2019 Finitary isomorphisms of Poisson point processes, Joint Math Meetings, Symbolic Dynamics Special Session
- 04/2017 Lighting lamps and flipping coins on free groups, Beloit College Math Colloquium
- 10/2016 Equivariant thinning over a free group, A Celebration of Mathematics at the University of Wisconsin–Milwaukee, Topology Research Group Special Session

### Contributed and departmental talks

- 09/2024 Isomorphisms of Poisson point processes over locally compact groups, Carnegie Mellon University, Mathematical Logic Seminar
- 09/2023 Poisson–Voronoi tessellations and fixed price in higher rank, University of Texas at Austin Groups and Dynamics Seminar
- 03/2023 Higher rank semisimple Lie groups have fixed price, University of Texas at Austin Junior Groups and Dynamics Seminar
- 09/2022 Constructions between infinite entropy systems, University of Texas at Austin Junior Groups and Dynamics Seminar
- 11/2021 Isomorphisms of Poisson systems on some locally compact Polish groups, University of Texas at Austin Groups and Dynamics Online Seminar
- 07/2017 Finitary isomorphisms of Poisson point processes, Pingree Park Dynamics Workshop
- 2017 Equivariant thinning over a free group, University of Kansas Probability Seminar
- 2016 Equivariant thinning over a free group, University of Kansas Graduate Student Seminar
- 2016 A geometric and algebraic investigation of the lamplighter group, University of Kansas Graduate Student Seminar
- 2013 Growth series of generalized lamplighter groups, University of Wisconsin–Milwaukee Topology Seminar

## Awards

2021 Florence Black Graduate Teaching Award, University of Kansas

## Teaching experience

### University of Texas at Austin

Geometry of Locally Compact Groups (graduate topics course Spring 2024)  
 Probability I (Fall 2023)  
 Introduction to Stochastic Processes (Spring 2023)  
 Multivariable Calculus (Fall 2022)  
 Integral Calculus (hybrid Spring 2022)  
 Differential and Integral Calculus (hybrid Fall 2021)

### University of Kansas

Instructor of Record and Material Design:

Calculus III (asynchronous online Summer 2020)  
 Enhanced Calculus III (Spring 2019, Fall 2019, Spring 2020)  
 Enhanced Calculus II (Spring 2018, Fall 2018)

Instructor of Record:

Precalculus Mathematics (Spring 2016)  
 College Algebra online (Summer 2016)

Teaching Assistant:

Honors Calculus II (synchronous online Fall 2020)  
 Calculus II (Spring 2017, Fall 2017, synchronous online Spring 2021)  
 Calculus I (Fall 2016)  
 College Algebra (Fall 2015)

### Milwaukee Area Technical College

College Mathematics (Fall 2014, Spring 2015)  
 College Technical Mathematics I (Fall 2014)

### University of Wisconsin–Milwaukee

Lecturer:

Intermediate College Algebra (Spring 2015)  
 Algebraic Literacy I (Fall 2014)  
 Survey of Calculus and Analytic Geometry (Spring 2014)  
 Essentials of Algebra (Spring 2014)

Instructor of Record:

Intermediate Algebra online (Spring 2013)  
 Essentials of Algebra (Fall 2012)

Teaching Assistant:

Prep for College Mathematics/Essentials of Algebra/Intermediate Algebra hybrid (Fall 2013)  
 Survey of Calculus and Analytic Geometry (Fall 2011, Spring 2012)

## Professional service

### University of Texas at Austin

Organizing:

Groups and Dynamics Seminar (2022–2024)  
 Summer Directed Reading Program (2022–2023)

Graduate Mini-school in Groups and Dynamics, funded by NSF Grant DMS-1937215 (2022)

Talks:

Mathematically modeling randomness, Sunday Morning Math Group (12/2022)

Other:

Panelist, What is math research?, Math For All in Austin Conference (2024)

### University of Kansas

Leadership Roles:

Vice President, Student Chapter of the Association for Women in Mathematics (2020–2021)

President, Student Chapter of the American Mathematical Society (AMS) (2018–2019)

Secretary, Student Chapter of the AMS (2017–2018)

Organizing:

Diversity training for graduate students (2019)

Professional development seminars led by Department of Mathematics faculty (2018–2019)

Outreach event with the Katherine Johnson Scholar Sisters, a middle school group (2018)

Qualifying exam study groups for math graduate students, *co-founder* (2017–2019)

Graduate Student Organization Seminar, about 8 occurrences per semester (2017–2018)

Graduate Student Combinatorics Conference, partially funded by NSF Grant DMS-1700464 (2017)

Mentoring:

Graduate mentor, Student Chapter of the AMS mentoring program (2020–2021)

Undergraduate mentor, Women in STEMM mentoring program (2018)

Other:

Panelist, Lessons from Fall 2020 webinar, Center for Teaching Excellence (2021)

Activity leader, Math awareness month workshop for middle schoolers (2016–2019)

### General

Mentor, LGBT Tech PATHS program (2023)

Science Mentor, Frontiers for Young Minds Journal, Understanding Mathematics section (2017–2021)

### Conferences and workshops attended

- 2024      Actions of Large Groups, Geometric Structures, and the Zimmer Program Workshop, Institut Henri Poincaré
- 2023      Dynamics Summer School, Northwestern University
- 2023      Graduate Mini-school in Groups, Dynamics, and Probability, University of Texas at Austin
- 2023      Dynamics, Rigidity and Arithmetic in Hyperbolic Geometry Workshop, ICERM
- 2023      Measured Group Theory Workshop, Centre de Recherches Mathématiques
- 2023      South Eastern Logic Symposium, University of Florida
- 2022      Graduate Mini-school in Groups and Dynamics, University of Texas at Austin
- 2022      Summer School: Graphs, Groups, Stochastic Processes, Erdős Center, Alfréd Rényi Institute of Mathematics
- 2022      Ergodic Theory and its Connections: A Conference in Honor of the Legacy of Michael Boshernitzan, Rice University
- 2022      Workshop on Dynamical Systems and Related Topics, University of Maryland
- 2021      Spectra LGBTQ+ in Mathematics Virtual Conference, ICERM
- 2021      Expanding Dynamics: Creative Online Ventures in Dynamics Summer School
- 2020      Graduate Teaching Assistant Flex and Online Teaching Program, Center for Teaching Excellence, University of Kansas
- 2019      Young Mathematicians in  $C^*$ -algebras, University of Copenhagen
- 2019      Joint Mathematics Meetings, Baltimore, Maryland
- 2018      Houston Summer School on Dynamical Systems, University of Houston

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- 2018 Critical Issues in Mathematics Education: Access to Mathematics by Opening Doors for Students Currently Excluded from Mathematics, MSRI
- 2017 Midwest Dynamical Systems Conference, Northwestern University
- 2017 Midwest Probability Colloquium, Northwestern University
- 2017 Current Trends in Dynamical Systems and the Mathematical Legacy of Rufus Bowen, University of British Columbia
- 2017 Pingree Park Dynamics Workshop, University of Denver
- 2017 Ergodic Theory and Operator Algebras, Texas A&M University
- 2017 Graduate Student Combinatorics Conference, University of Kansas
- 2016 AMS Fall Western Sectional Meeting, University of Denver
- 2016 KUMUNUjr Commutative Algebra Conference, University of Nebraska Lincoln
- 2014 Underrepresented Students in Topology and Algebra Research Symposium, University of California, Berkeley
- 2014 Midwest Women in Mathematics Symposium, Notre Dame University
- 2011 Joint Mathematics Meetings, New Orleans, Louisiana
- 2010 Indiana Undergraduate Research Conference, Indiana University Bloomington
- 2010 Women and Mathematics Program, Institute for Advanced Study