

Katherine Moore

Wake Forest University
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EDUCATION

Dartmouth College, Hanover, NH

Ph.D. in Mathematics

June 2018

Patterns in Time Series and Dynamical Systems

Advisor: Sergi Elizalde

A.M. in Mathematics

Kenyon College, Gambier, OH

B.A. in Mathematics (with Highest Honors in Mathematics)

May 2012

ACADEMIC APPOINTMENTS

Wake Forest University, Winston-Salem, NC

Teacher-Scholar Postdoctoral Fellow

Fall 2018 - Present

TEACHING EXPERIENCE

Wake Forest University

Instructor

Stats 310 - Probability

Fall 2020

Stats 111 - Introduction to Statistics

Fall, Spring 2020

Math 117 - Discrete Mathematics (introduction to proofs)

Fall, Spring 2019

Math 111 - Calculus with Analytic Geometry

Fall 2018

Math 311 - Introductory Real Analysis

Fall 2018

Dartmouth College

Instructor

Math 53 - Chaos!

Fall 2017

Math 20 - Probability

Summer 2016

Math 2 - Differential Calculus

Winter 2016

PUBLICATIONS

1. A social perspective on perceived distances reveals deep community structure (with K. Berenhaut and R. Melvin), (revision submitted to *Proceedings of the National Academy of Sciences*).
2. Characterizations and enumerations of patterns of signed shifts (with S. Elizalde) *Discrete Applied Mathematics*, (2019).
3. Random Walk Null Models for Time Series Data (with D. DeFord) *Entropy*, 19 (2017), **615**.
4. Patterns of signed shifts and negative shifts (with S. Elizalde and K. Archer) *Sem. Lothar. Combin. proc.*, 78B (2017), Article #49.
5. Patterns of negative shifts and beta-shifts. (with S. Elizalde) December 2015. arXiv:**1512.04479**.

RESEARCH PRESENTATIONS

(★ indicates invited talk)

- *Communities in Data*
Data Science, Statistics and Visualization, SAMSI, NC. July 2020
Math and Statistics Colloquium, Wake Forest University, NC. April 2020
Feng Fu's Lab (Interdisciplinary Applied Math), Dartmouth College, NH. March 2020
Interdisciplinary Network Science Seminar, Wake Forest University, NC. March 2020
- *A New Perspective on Clustering: Partitioned Local Depth*
(★) 34th Clemson Mini-Conference on Discrete Math and Algorithms, Clemson, SC. October 2019
(★) Math Colloquium, High Point University, NC. October 2019
- *Clustering via Partitioned Local Depth*
CanaDAM, Vancouver, BC. May 2019
- *Clustering and Partitioned Local Depth*
Math and Statistics Colloquium, Wake Forest University, NC. February 2019
(★) Math and Computer Science Coffee, Davidson College, NC. February 2019
- *Permutations Realized by Iterated Maps* January 2018
(★) Dynamical Algebraic Combinatorics AMS Special Session, San Diego, CA.
- *Permutation-based Techniques for Estimating Entropy of Time Series* September 2017
Applied and Computational Mathematics Seminar, Dartmouth College, NH.
- *Permutations in Time Series and Dynamical Systems*
(★) Combinatorics Seminar, Brandeis University, MA. September 2017
(★) New York Combinatorics Seminar, Brooklyn College, NY. September 2017
- *Patterns and Cyclic Permutations in Dynamical Systems*
Summer Combo in Vermont, Saint Michael's College, VT. July 2017
Permutation Patterns, Reykjavik University, Iceland. June 2017
- *Patterns in Dynamical Systems*
(★) Combinatorics Seminar, Brandeis University, MA. January 2017
- *Patterns Realized by Negative Shifts and Beta-Shifts*
Summer Combo in Vermont, Saint Michael's College, VT. July 2016
- *Patterns in Chaos*
Graduate Student Combinatorics Conference, Clemson University, SC. April 2016
(★) Math Colloquium, Kenyon College, OH. September 2015

POSTERS

- Formal Power Series and Algebraic Combinatorics (FPSAC), Queen Mary, London, UK. July 2017
- Discrete Math Days of the Northeast, Dartmouth College, May 2017
- Graduate Poster Session, Dartmouth College, NH. April 2017
- Women's Intellectual Network Research Symposium, Brown, RI. March 2017

AWARDS AND HONORS

- Outstanding Graduate Student Teacher 2017
Awarded by the Dartmouth Center for Advancement of Learning.
- Dartmouth GAANN Fellowship 2012 - 2013
- Reginald B. Allen Award for Excellence in Mathematics at Kenyon College 2012
- Outstanding Pi Mu Epsilon Student Talk at MathFest (advised by Judy Holdener) 2011

SUPERVISED RESEARCH PROJECTS

URECA Fellowship for Undergraduate Summer Research

Kevin Woytowich

Summer 2019, 2020

Price Differences in Revisiting Non-Revisiting Random Walks

Master's Thesis Committee Member

Orlando Ferrer

May 2020

Price Dynamic Random Walks on General Graphs

Yichen Han

May 2020

Degree-wise Effects and the Friendship Paradox Under Configuration Models

PROFESSIONAL ACTIVITIES AND SERVICE

Project NExT (Fellow)

2019 - 2020

Peer Learning Workshop on Online Learning (Statistics, Wake Forest)

2020

Graduate Admissions Committee (Wake Forest)

2019 - 2020

Curriculum Committee Member (Wake Forest)

2018-2019

Dartmouth Center for the Advancement of Learning

2015 - 2017

Led sessions for graduate teaching assistants on diversity and inclusivity in the classroom.

Workshop participant (e.g., *Improv for Reseachers*) and Advisory Board member.

Dartmouth Mathematics Teaching Seminar (Participant)

2015

COMMUNITY

AWM Mentor Program at Wake Forest (Mentor)

2019 - Present

Sonia Kovalevesky Day

2012 - 2018

Organized the annual math day (May 2016), participated on the panel and led sessions.

Exploring Mathematics at Dartmouth

2015

Collaboratively developed two week-long workshops for high school students.