

# Katherine Moore

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## ACADEMIC APPOINTMENTS

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**Wake Forest University**, Winston-Salem, NC  
Teacher-Scholar Postdoctoral Fellow Fall 2018 - Present

## EDUCATION

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**Dartmouth College**, Hanover, NH  
Ph.D. in Mathematics June 2018  
*Patterns in Time Series and Dynamical Systems*  
Advisor: Sergi Elizalde  
A.M. in Mathematics June 2017

**Kenyon College**, Gambier, OH  
B.A. in Mathematics May 2012  
with Highest Honors in Mathematics

## PUBLICATIONS

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1. "Characterizations and Enumerations of Patterns of Signed Shifts." (with S. Elizalde) November 2017. arXiv:[1711.05213](#).
2. "Random Walk Null Models for Time Series Data." (with D. DeFord) *Entropy*, 19 (2017), [615](#).
3. "Patterns of Signed Shifts and Negative Shifts." (with S. Elizalde and K. Archer) *Sem. Lothar. Combin. proc.*, 78B (2017), Article [#49](#).
4. "Patterns of Negative Shifts and Beta-Shifts." (with S. Elizalde) December 2015. arXiv:[1512.04479](#).

## TEACHING EXPERIENCE

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### Dartmouth College

#### Instructor

Assumed full responsibility of the course; developed syllabi, exams and lab projects.

Math 53 - Chaos! Fall 2017  
An upper-level course on discrete and continuous dynamics.  
Math 20 - Probability Summer 2016  
Math 2 - Differential Calculus Winter 2016

#### Teaching Assistant

Math 8 - Integral Calculus Fall 2013, Spring 2015  
Math 12 - Honors Multivariable Calculus Fall 2012

## RESEARCH PRESENTATIONS

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(★ indicates invited talk)

- (★) *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* September 2017  
Combinatorics Seminar, Brandeis University, MA.
- (★) *Permutations in Time Series and Dynamical Systems* September 2017  
New York Combinatorics Seminar, Brooklyn College, NY.
- *Patterns in Dynamical Systems* July 2017  
Summer Combo in Vermont, Saint Michael's College, VT.
- *Patterns and Cycles in Dynamical Systems* June 2017  
Permutation Patterns, Reykjavik University, Iceland.
- (★) *Patterns in Dynamical Systems* January 2017  
Combinatorics Seminar, Brandeis University, MA.
- *Patterns in Negative Shifts and Beta-Shifts* July 2016  
Summer Combo in Vermont, Saint Michael's College, VT.
- *Patterns in Chaos* April 2016  
Graduate Student Combinatorics Conference, Clemson University, SC.
- (★) *Patterns in Chaos* September 2015  
Math Colloquium, Kenyon College, OH.

### Posters

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

## AWARDS AND HONORS

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- Outstanding Graduate Student Teacher 2017  
Awarded by the Dartmouth Center for Advancement of Learning.
- Dartmouth Graduate Fellowship 2015 - 2018
- Dartmouth GAANN Fellowship 2012 - 2013
- Reginald B. Allen Award for Excellence in Mathematics at Kenyon College 2012  
Awarded to the student who has done the most outstanding work in mathematics.

## ACTIVITIES AND OUTREACH

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- **Sonia Kovalevesky Day** 2012 - 2018  
Organized the annual math day (May 2016), participated on the panel and led sessions.  
*Unravelling the Mysteries of the Mobius Strip* (October 2012), *Ramsey's Three Friends and Three Strangers* (May 2015), *Many Folds, One Cut* (May 2017).
- **Dartmouth Center for the Advancement of Learning** 2015 - 2017  
Teaching Assistant Orientation for Graduate Students  
Led sessions about diversity, inclusivity in the classroom, and navigating difficult situations at a two-day workshop for teaching assistants.
- **Exploring Mathematics Camp at Dartmouth** 2015  
Developed two week-long workshops for high school students.  
*Cryptography and Games in Mathematics*.