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RESEARCH INTERESTS

Statistical mechanics, probability, discrete dynamical systems, and discrete geometry.

EMPLOYMENT

Visiting Assistant Professor

University of Rochester, Department of Mathematics

July 2018–Present
Rochester, NY

EDUCATION

Doctor of Philosophy in Applied Mathematics

Brown University, Division of Applied Mathematics

Advisor: Richard Kenyon

Dissertation: Regular Polygon Surfaces and Renormalizable Rectangle Exchange Maps

May 2018

Master of Science in Applied Mathematics

Brown University, Division of Applied Mathematics

May 2014

Bachelor of Science in Mathematics, Bachelor of Arts in Physics

University of Chicago

Honors in mathematics, honors in general scholarship

June 2013

PUBLICATIONS AND PREPRINTS

1. Ian Alevy and Arjun Krishnan. Negative correlation of adjacent Busemann increments. *arXiv e-prints*, page arXiv:2102.06337, February 2021
2. Ian Alevy and Sevak Mkrtchyan. The Limit Shape of the Leaky Abelian Sandpile Model. *arXiv e-prints*, page arXiv:2010.01946, October 2020
3. Ian Alevy, Richard Kenyon, and Ren Yi. A Family of Minimal and Renormalizable Rectangle Exchange Maps. *Ergodic Theory and Dynamical Systems*, pages 1–28, Nov 2019
4. Ian M. Alevy. Regular Polygon Surfaces. *arXiv e-prints*, page arXiv:1804.05452, Apr 2018
5. Ian Alevy and Emmanuel Tsukerman. Polygonal bicycle paths and the Darboux transformation. *Involve*, 9(1):57–66, 2016
6. Thomas Nagylaki, Linlin Su, Ian Alevy, and Todd F. Dupont. Clines with partial panmixia in an environmental pocket. *Theoretical Population Biology*, 95:24 – 32, 2014

INVITED TALKS

The Leaky Abelian Sandpile Model

- *AMS Spring Eastern Sectional Meeting: Probability and Combinatorics*, Brown University, Providence, RI, March 2021.
- *Probability, Ergodic Theory, Mathematical Physics*, University of Rochester, Rochester, NY, December 2020.
- *Probability Reading Group*, Brown University, Providence, RI, December 2020.
- *Northeast Probability Seminar*, New York, NY, November 2020.

Renormalizable Rectangle Exchange Maps

- *Asymptotic Algebraic Combinatorics*, Institute for Pure & Applied Mathematics, UCLA, Los Angeles, CA, February 2020.
- *Research Seminar*, Center for Computing Sciences, Institute for Defense Analyses, Bowie, MD, May 2019.
- *MAA Seaway Section Meeting*, St. John Fisher College, April 2019.
- *Probability Seminar*, University of Rochester, September 2018.

Regular Polygon Surfaces

- *AMS Special Session on Discretization in Geometry and Dynamics*, Northeastern University, Boston, MA, April 2018.

POSTER PRESENTATIONS

Self-Induced Rectangle Exchange Maps

- *Park City Mathematics Institute on Random Matrix Theory*, Park City, UT, September 2018.
- *Dynamics, Aging and Universality in Complex Systems*, Courant Institute of Mathematical Science, New York, NY, June 2017.

Polyhedral Surfaces Made with Regular Polygons

- *Stochastic Topology and Thermodynamic Limits*, ICERM, Providence, RI, October 2016.
- *Quantum Integrable Systems, Conformal Field Theories and Stochastic Processes*, Institut d'Études Scientifiques de Cargèse, Corsica, France, September 2016.

TEACHING

Instructor

University of Rochester

- MTH 210 Introduction to Financial Mathematics Fall 2020
- MTH 161 Calculus 1A Fall 2020
- MTH 201 Introduction to Probability Spring 2020
- MTH 161 Calculus 1A Spring 2020
- MTH 210 Introduction to Financial Mathematics Fall 2019
- MTH 161 Calculus 1A Fall 2019
- ECO Mathematics for the Social Sciences Summer 2019
- MTH 143 Calculus 3 Spring 2019
- MTH 161 Calculus 1A Spring 2019
- MTH 143 Calculus 3 Fall 2018
- MTH 201 Introduction to Probability Fall 2018

Brown University

- Fundamentals for Calculus Summer 2016
- How Big is Infinity? Summer 2016

Teaching Assistant

Brown University

- Information Theory Spring 2017
- Statistical Inference Fall 2016
- Operations Research: Deterministic Models Fall 2015
- Essential Statistics Spring 2015
- Methods of Applied Mathematics 1 Fall 2014

University of Chicago

- Mathematics college tutor Fall 2012-Spring 2013
- Basic Algebra 2 Winter and Spring 2013
- Advanced Numerical Analysis Fall 2012
- Introduction to Scientific Computing Fall 2012

OUTREACH

- Co-organizer for the NSF Tripods REU, University of Rochester Summer 2020
- Instructor in the ECO program, University of Rochester Summer 2019

ACADEMIC SERVICE

- Rater for the Sproull Fellowship, University of Rochester 2019
- Co-organizer of the Discrete Math Seminar, Brown University 2016–2018
- Co-organizer of the Graduate Student Seminar, Brown University 2014–2017

RELEVANT SKILLS

Programming Languages: C++, Mathematica, Python, MATLAB, and L^AT_EX

PROFESSIONAL SERVICE

Reviewed papers for the following journals:

- Dynamical Systems 1 paper reviewed

REFERENCES

Richard Kenyon, Professor of Mathematics, Yale University, richard.kenyon@yale.edu, (203) 432-7058. Thesis advisor.

Sevak Mkrtchyan, Associate Professor of Mathematics, University of Rochester, sevak.mkrtchyan@rochester.edu, (585) 275-4411. Postdoctoral supervisor.

Mark Herman, Associate Professor of Teaching and Director of Undergraduate Studies, University of Rochester, mark.herman@rochester.edu, (585) 275-4411.

Richard Schwartz, Professor of Mathematics, Brown University, res@math.brown.edu, (401) 863-1000.