DANIEL SLONIM

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EDUCATION

Purdue University   May 2022
PhD in mathematics
Advisor: Jonathon Peterson
Thesis title: "Random walks in Dirichlet environments with bounded jumps"

Hillsdale College   May 2016
BS in mathematics and philosophy
Summa cum laude
Math thesis title: "Path sets and interleaving"
Honors program thesis title: "Suárez, goods, and motivation: An analysis of John Finnis's critique"

EMPLOYMENT

University of Virginia   August 2022 – Present
Whyburn Research Associate and Lecturer

Purdue University   January 2022 – May 2022
Bilsland Dissertation Fellow

Purdue University   August 2016 – December 2021
Graduate teaching assistant

RESEARCH INTERESTS

Random walks in random environments
First-passage percolation
Symbolic dynamics

ARTICLES

1. D. J. Slonim, "Random walks in Dirichlet random environments on $\mathbb{Z}$ with bounded jumps", preprint: https://arxiv.org/abs/2104.14950, to appear in *Annales de l'Institut Henri Poincaré, Probabilités et Statistiques*.

2. D. J. Slonim, "Ballisticity of random walks in random environments on $\mathbb{Z}$ with bounded jumps", *Markov Processes and Related Fields*, v. 28 (5), 2022.

3. W. C. Abram, J. C. Lagarias, and D. J. Slonim, "Decimation and interleaving in one-sided symbolic dynamics", *Adv. in Appl. Math.*, 2021. https://doi.org/10.1016/j.aam.2020.102160.

PREPRINTS

1. D. J. Slonim, "Asymptotic velocity bounds for random walks in random environments with two kinds of site", preprint: https://arxiv.org/abs/2311.00062.

2. D. J. Slonim, "Directional transience of random walks in random environments with bounded jumps", preprint: https://arxiv.org/abs/2108.11424.

3. D. J. Slonim, "On total weight exiting finite, strongly connected sets in shift-invariant weighted directed graphs on $\mathbb{Z}$", preprint: https://arxiv.org/abs/2205.07414.

4. W. C. Abram, J. C. Lagarias, and D. J. Slonim, "Interleaving of path sets", preprint: `https://arxiv.org/abs/2101.02441`.

AWARDS

Bilsland Dissertation Fellowship, Purdue University	Spring 2022
for outstanding PhD candidates in the final year of doctoral degree completion	
Excellence in Teaching Award, Purdue University	Spring 2022

TEACHING

University of Virginia

Math 2310 Calculus III	Fall 2023
Math 3310 Basic Real Analysis	Spring 2023
Math 3100 Introduction to Probability	Fall 2022

Purdue University

Math 16020i Applied Calculus II (flipped classroom)	Fall 2021
Math 15555 Quantitative Reasoning	Spring 2021
Math 59800 Probability (qualifying exam preparation class)	Summer 2018, Summer 2020
Math 26200 Linear Algebra and Differential Equations	Spring 2020
Math 16100i Plane Analytic Geometry and Calculus I (flipped classroom)	Fall 2019
Math 26100 Multivariate Calculus	Summer 2019
Math 16010 Applied Calculus I	Fall 2017, Fall 2018, Spring 2019
Math 26100 Multivariate Calculus (recitation)	Spring 2018
Math 16200 Plane Analytic Geometry and Calculus II (recitation)	Fall 2016, Spring 2017

PRESENTATIONS AND TALKS

"Random Walks in Random Environments with Rare Obstacles"	
Purdue University Probability Seminar	October 2023
"Random Walks in (Dirichlet) Random Environments with Jumps on $\mathbb{Z}$"	
Penn/Temple Probability Seminar	September 2023
"Directional Transience of Finite-Range Random Walks in Dirichlet Environments"	
Seminar on Stochastic Processes (poster talk)	March 2023
"A Zero-One Law for 2D Random Walks in Random Environments with Bounded Jumps"	
Northeast Probability Seminar (short talk)	November 2022
"Random Walks in (Dirichlet) Random Environments with Jumps on $\mathbb{Z}$"	
University of Wisconsin Probability Seminar	October 2022
"Random Walks in (Dirichlet) Random Environments with Jumps on $\mathbb{Z}$"	
University of Virginia Probability Seminar	September 2022
"Ballisticity of One-Dimensional Random Walks in Random Environments with Jumps"	
Seminar on Stochastic Processes (poster talk)	March 2022
"Random Walks in Dirichlet Random Environments on $\mathbb{Z}$ with Bounded Jumps"	
Northeast Probability Seminar (short talk, virtual)	November 2021
"My Random Walk through the Random Environment of Probability Research"	
Purdue Student Colloquium	September 2021
"Random Walks in Dirichlet Random Environments with Bounded Jumps"	
Purdue Probability Seminar	March 2021
"Ergodic Sequences and Mixing Conditions"	
Purdue Student Probability Seminar	March 2021
"Skorokhod's Representation Theorem"	
Purdue Student Probability Seminar	October 2020

"Random Walks in Dirichlet Random Environments with Bounded Jumps"
Purdue Student Colloquium   October 2020
"Loop-Erased Random Walks and Spanning Trees on Markov Chains"
Purdue Student Probability Seminar   February 2020
"The Mass-Transport Method"
Purdue Student Probability Seminar   September 2019
"An Introduction to Random Walks in Random Environments"
Purdue Student Probability Seminar   April 2019
"Beta and Dirichlet Distributions, Order Statistics, and Polya Urns"
Purdue Student Probability Seminar   March 2019
"The Prohorov Metric"
Purdue Student Probability Seminar   January 2019
"What Is Hausdorff Dimension?"
Purdue Student Colloquium   March 2018
"Path Sets and Interleaving"
CMS Meeting: Fractal Geometry Session   December 2016
"Interleaving of Path Sets"
Purdue Student Colloquium   November 2016
"Interleaving of Path Sets"
Michigan MAA Meeting   April 2016

CONFERENCES ORGANIZED

Southeast Probability Conference II, University of Virginia   August 2023

CONFERENCES ATTENDED

Random Walks in Bath, University of Bath   June 2023
Southeast Probability Conference I, Duke University   May 2023
Seminar on Stochastic Processes, University of Arizona   March 2023
Northeast Probability Seminar, Columbia University   November 2022
First-Passage Percolation and Related Models, ICTS   July 2022
Seminar on Stochastic Processes, Lehigh University   March 2022
Northeast Probability Seminar (virtual)   November 2021
Spatial Stochastic Processes (virtual)   March 2021
Midwest Probability Colloquium, Northwestern University   October 2019
Stochastic Processes and Applications, Northwestern University   July 2019
Midwest Probability Colloquium, Northwestern University   October 2018
Recent Trends in Continuous and Discrete Probability, Georgia Tech   June 2018
Canadian Mathematical Society Meeting   December 2016
Michigan MAA Meeting   April 2016

REFEREED JOURNALS

Journal of Fractal Geometry

DEPARTMENT SERVICE

Co-Organizer, University of Virginia Probability Seminar   Fall 2022–present
Mentor for Directed Reading Program at UVA   Fall 2022
Purdue University Graduate Representative   Academic Year 2019/2020
Founder and organizer, Purdue Student Probability Seminar   Spring 2019 – Spring 2021
Co-organizer, Purdue Bridge to Research Seminar   Academic Year 2017/2018

EXTRA-DEPARTMENTAL SERVICE/OUTREACH

Substitute calculus teacher, Regents School of Charlottesville	October 2023
Poster judge for Purdue Undergraduate Research Conference	April 2021
Tutored regularly at McCutcheon High School	Fall 2017
Assisted with mock exams for the First Year Engineering Student Advisory Council	Spring 2017
Tutored at Jefferson High School	April 2017
Volunteered for Math Field Day	November 2016
Tutored regularly at Hillsdale High School	Spring 2016
Tutored regularly at Hillsdale Preparatory School	Fall 2012 – Fall 2014

SOA EXAMS PASSED

Probability	June 2014
Financial Mathematics	April 2015
Models for Financial Economics	July 2015