

# DANIEL SLONIM

dslonim@virginia.edu  $\diamond$  <https://danielslonim.github.io/>

## EDUCATION

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**Purdue University** May 2022

PhD in Mathematics

Advisor: Jonathon Peterson

Thesis title: “Random Walks in Dirichlet Environments with Bounded Jumps”

**Hillsale 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

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**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

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Random walks in random environments

First-passage percolation

Symbolic dynamics

## ARTICLES

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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

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1. D. J. Slonim, “A zero-one law for random walks in random environments on  $\mathbb{Z}^2$  with bounded jumps”, preprint: <https://arxiv.org/abs/2108.11424>
2. W. C. Abram, J. C. Lagarias, and D. J. Slonim, “Interleaving of path sets”, preprint: arXiv:2101.02441.

## AWARDS

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Bilsland Dissertation Fellowship, Purdue University Spring 2022

*for outstanding PhD candidates in the final year of doctoral degree completion*

Award for Excellence in Teaching, Purdue University Spring 2022

## TEACHING

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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

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“Directional Transience of Finite-Range Random Walks in Dirichlet Environments” (poster talk)	
Seminar on Stochastic Processes	March 2023
“A zero-one law for 2D random walks in random environments with bounded jumps” (short talk)	
Northeast Probability Seminar	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” (poster talk)	
Seminar on Stochastic Processes	March 2022
“Random Walks in Dirichlet Random Environments on $\mathbb{Z}$ with Bounded Jumps,”	
Northeast Probability Seminar (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 SPS	October 2020
“Random Walks in Dirichlet Random Environments with Bounded Jumps,” Purdue SC	October 2020
“Loop-Erased Random Walks and Spanning Trees on Markov Chains,” Purdue SPS	February 2020
“The Mass-Transport Method,” Purdue SPS	September 2019
“An Introduction to Random Walks in Random Environments,” Purdue SPS	April 2019
“Beta and Dirichlet Distributions, Order Statistics, and Polya Urns,” Purdue SPS	March 2019
“The Prohorov Metric,” Purdue SPS	January 2019
“What is Hausdorff Dimension?” Purdue SC	March 2018
“Path Sets and Interleaving,” CMS Meeting: Fractal Geometry Session	December 2016
“Interleaving of Path Sets,” Purdue SC	November 2016
“Interleaving of Path Sets,” Michigan MAA Meeting	April 2016

## CONFERENCES ATTENDED

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Southeast Probability Conference II, University of Virginia	August 2023
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

## DEPARTMENT SERVICE

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Purdue University Graduate Representative	Academic Year 2019/2020
Began and Organized the Purdue Student Probability Seminar	Spring 2019 - Spring 2021
Organized the Bridge to Research Seminar	Academic Year 2017/2018

## OUTREACH

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Mentor for Directed Reading Program at UVA	Fall 2022
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	2012 - 2014

## SOA EXAMS PASSED

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

## PROFESSIONAL MEMBERSHIPS

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Association of Christians in the Mathematical Sciences  
Association for Mathematical Research