Zachary Letterhos

Contact Information

New Mexico State University
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Education

Purdue University   **2014 − 2021**
Ph.D. in Mathematics
Thesis: *Self-Interacting Random Walks and Related Branching-Like Processes*
Advisor: Jonathon Peterson

University of New Mexico   **2010 − 2014**
BS in Mathematics and Psychology

Employment

New Mexico State University   **2023 −**
College assistant professor

Wake Forest University   **2021 − 2023**
Visiting assistant professor

Purdue University   **2014 − 2021**
Gradute teaching assistant

Research Interests

Probability
Excited random walks, random walks in random environments

Publications

Z. Letterhos. *Recurrence/transience criteria for finite drift excited random walk.* Preprint available: https://arxiv.org/abs/2103.05570

TEACHING EXPERIENCE

Visiting Assistant Professor – Wake Forest University

MTH 357/STA 310 – Probability   **1 Semester**
Fall 2022

STA 112 – Introduction to Regression and Data Science   **1 Semester**
Spring 2023

STA 111 – Elementary Probability and Statistics   **4 Semesters**
Fall 2021, 2022,   Spring 2022, 2023

Instructor – Purdue University

MA/STAT 250 – Problem Solving in Probability   **5 Semesters**
Wrote and graded exams and quizzes, developed formal group assignments and informal group
problem sets to supplement or replace traditional lectures.
Fall 2020, 2019, 2018,   Spring 2020, 2019

MA 261 – Calculus III   **1 Semester**
Delivered lectures, wrote and graded midterm exams, contributed to writing and grading of common
final exam.
Summer 2019

MA 162 – Calculus II   **2 Semesters**
Delivered lectures, wrote and graded quizzes, led recitation sessions. In Summer 2016, served as
course coordinator for Calc II: Coordinated the writing of midterm exams and the common final
exam across 3 sections of the course.
Summer 2016, 2015

MA 16010 – Applied Calculus I   **2 Semesters**
Delivered lectures, wrote and graded quizzes.
Fall 2016,   Spring 2017

MA 158 – Precalculus   **2 Semesters**
Delivered lectures, wrote and graded quizzes.
Fall 2015,   Spring 2016

Teaching Assistant – Purdue University

MA 162 – Calculus II (IMPACT)   **1 Semester**
IMPACT uses a flipped classroom. Led active learning sessions where students worked on group
problem sets once a week. Led recitation sessions, wrote and graded quizzes.
Spring 2018

MA 161 – Calculus I (IMPACT)   **1 Semester**
IMPACT uses a flipped classroom. Led active learning sessions where students worked on group
problem sets once a week. Led recitation sessions, wrote and graded quizzes.
Fall 2017

MA 261 – Calculus III   **1 Semester**
Wrote and graded quizzes, held virtual office hours.
Summer 2020

MA 162 – Calculus II   **1 Semester**
Led recitation sessions, wrote and graded quizzes.
Spring 2015

MA 161 – Calculus I   **1 Semester**
Led recitation sessions, wrote and graded quizzes.
Fall 2014

Service

Senior Thesis Committee External Member   **Spring 2022**
Served as external member for an anthropology student's senior thesis committee (Wake Forest).

Senior TA   **2020**
Participated in screening process for potential new TAs by evaluating their teaching skills and making recommendations for their teaching assignments. (Purdue)

Peer Ombudsman   **2019**
Received training from the Purdue Graduate School on how to assist fellow graduate students with concerns about their graduate education as an ombudsman. (Purdue)

Graduate Student Representative   **2018 – 2019**
Served as one of four representatives for the grad students to the administration of the department of mathematics. Organized a two day visit weekend for prospective graduate students, hosted two town hall meetings for grad students to voice their concerns, held follow-up meetings with department administration, and organized social events for the grad students and for the whole department. (Purdue)

Mentorship

Purdue Research in Mathematics Experience (PRiME)   **Summer 2017**
Served as a teaching assistant for an NSF funded REU. Gave lectures, met with REU students to discuss their projects, and provided feedback on presentations.

Organizer

Purdue Bridge to Research Seminar   **Fall 2019 – Spring 2021**
Math department seminar to expose graduate students to faculty members' research areas and help connect students and potential advisors. Co-organized with Anna-Rose Wolff.

Graduate Research Day Mini-Conference   **Nov 2018**
Day-long mini conference for Purdue math graduate students to present their research.
Co-organized with Tyler Billingsley, Alex Carignan, and Alejandra Gaitan.

Purdue Student Colloquium   **Spring 2018 – Spring 2021**
Math department seminar that gives graduate students opportunities to present their research and practice their academic presentation skills in a friendly environment.

Awards and Honors

Graduate Teaching Award   **2020**
Purdue Teaching Academy

Excellence in Teaching Award   **2019**
Purdue Department of Mathematics

Certificate of Merit awarded for teaching   **2018**
Purdue Department of Mathematics

Graduate School Summer Research Grant   **2018**
Purdue College of Science

Presentations

Major Themes in Introductory Statistics (STA 111)   **Nov 2022**
Coffee with Profs, Wake Forest Math & Stats Center

Cookie Random Walks   **Mar 2021**
Special Colloquium, Morehead State University

Recurrence and Transience Criteria for ERW with Infinite Cookie Stacks   **Oct 2020**
Probability Seminar, Purdue

A Map Through Grad School   **Sept 2020**
Basic Skills Seminar, Purdue (with Alejandra Gaitan)

Scaling Limits of Transient "Have Your Cookie and Eat It" Random Walk   **Nov 2019**
Grad Research Day Mini-Conference, Purdue

Coupling Proofs of Obvious Facts   **Oct 2019**
Student Colloquium, Purdue

Stable Laws and You   **Sept 2019**
Student Probability Seminar, Purdue

Generalizing the Central Limit Theorem   **Feb 2019**
Student Probability Seminar, Purdue

How Good Talks Happen   **Oct 2018**
Basic Skills Seminar, Purdue

The Problem of Points   **Sept 2017**
Student Colloquium, Purdue

Random Walks on $\mathbb{Z}^d$ **Mar 2017**
Student Colloquium, Purdue

Outreach

Science Fair Judge   **2021, 2022**
Hanes Magnet School, Winston-Salem NC

Lunch and Learn – The Game of Nim   **Nov 2021**
Hanes Magenet School, Winston-Salem NC

Selected Conference Attendance

MAA Indiana Section Meeting   **Oct 2019**
Wabash College

Midwest Probability Colloquium   **Oct 2019**
Northwestern University

Stochastic Processes and their Applications   **July 2019**
Northwestern University

MAA Indiana Section Meeting   **April 2019**
University of Indianapolis

Midwest Probability Colloquium   **July 2018**
Northwestern University

Northwestern Summer School in Probability   **July 2018**
Northwestern University

Lake Michigan Workshop on Combinatorics and Graph Theory   **April 2018**
University of Notre Dame

Midwest Probability Colloquium   **Oct 2017**
Northwestern University