

ABIGAIL ROSE LINDNER

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Education

Worcester Polytechnic Institute <i>Ph.D. in Mathematics</i> <ul style="list-style-type: none">Advisor: Francesca Bernardi	Aug 2022 – present Worcester, MA
Worcester Polytechnic Institute <i>M.S. in Applied Mathematics</i>	Expected May 2024 Worcester, MA
Regent University <i>Bachelor of Science in Mathematics</i>	Awarded Dec 2021 Virginia Beach, VA

Research Experience

Contract Researcher <i>National Council For Adoption</i> <ul style="list-style-type: none">Conducted literature reviews related to child welfare legislation using a variety of academic and government databases and employing focused search strategiesAssessed studies for risk of bias using the ROBINS-I tool as part of overarching research projectsDistilled research on adoption legislation and outcomes into approximately 3,000-word articles for a publication aimed at adoption professionals	May 2023 – Aug 2023 Alexandria, VA
Research Intern / Contract Researcher <i>National Council For Adoption</i> <ul style="list-style-type: none">Headed a systematic review of literature on children and youth who have been involved with the foster care systemCollected and organized state data on non-international adoptions using multiple shared Google Drive files in research culminating in an adoption factbookAnalyzed the AFCARS records of over 180,000 adopted U.S. children over a three-year period using SAS Studio and wrote a report based on the findings	May 2021 – Oct 2022 Alexandria, VA
Student Researcher <i>Rose-Hulman Institute of Technology</i> <ul style="list-style-type: none">Employed Python and R to collect and analyze data and create a regression model measuring the impact of agricultural development on economic growth and human development	Summer 2020 Terre Haute, IN
Research Assistant <i>Regent University</i> <ul style="list-style-type: none">Gathered and inspected materials related to current projects and maintained databases in Google Drive to record document relevance and progress for Dr. Eric PattersonExecuted actions like web scraping in Python to obtain content of interest from public databases with over written 100,000 records	Mar 2020 - Jul 2022 Virginia Beach, VA

Teaching Experience

Teaching Assistant <i>Worcester Polytechnic Institute, Department of Mathematical Sciences</i> <ul style="list-style-type: none">Prepare for and lead discussions for 2+ sections of undergraduate math courses each 7-week termProvide tutoring in Calculus, Linear Algebra, Differential Equations, and other undergraduate mathematics courses <p>Experience: MA 1021 Calculus I: Differential Calculus MA 1022 Calculus II: Integral Calculus MA 1024 Calculus IV: Multivariable Calculus MA 2051 Ordinary Differential Equations MA 2071 Matrices & Linear Algebra I MA 2210 Math Modeling for Decision Making (with Python) MA 2431 Mathematical Modeling with ODEs (with MATLAB) MA 2611 Applied Statistics I (with R) MA 3471 Advanced ODEs (with MATLAB)</p>	Aug 2022 – present Worcester, MA
Teaching Assistant <i>Regent University, Science & Mathematics Department</i> <ul style="list-style-type: none">Formatted handwritten notes to LaTeX/Overleaf files for a Probability & Statistics classGraded homework assignments for an undergraduate Differential Equations class	Fall 2021, Spring 2020 Worcester, MA

University Service

Coordinator

Oct 2023 – present

WPI Faculty-Student Lunch Talks

Worcester, MA

- Informal, biquarterly seminar that provides an opportunity for students to learn about the research conducted in the department and math career trajectories
- Co-led with Hammed Olayinka

Co-Organizer

Dec 2023 – Feb 2024

WPI Day of Scholastic Excellence 2024

Worcester, MA

- Organized lightning talk and poster sessions for students from across the Arts & Sciences departments to present on their research projects
- Co-led with Jezabel Aleyda Aponte Figueroa

PR Chair

Aug 2023 – present

AWM WPI Chapter

Worcester, MA

- Design promotional flyers in Canva to market chapter-led events and social gathering
- Maintain the organization's Facebook and Instagram accounts

Graduate Representative

Aug 2023 – present

WPI Arts & Sciences Graduate Student Advisory Council

Worcester, MA

- Council to advise the Dean of Arts & Sciences on initiatives that directly impact students
- Represented the mathematics department

Student Representative

Jan 6, 2023

Joint Mathematics Meeting - AMS Graduate Programs Fair

Boston, MA

- Provided a student perspective on Worcester Polytechnic Institute and the math Ph.D. program to prospective graduating juniors and seniors

Community Service

Curriculum Coordinator

May 2023 – Jul 2023

WPI Girls Talk Math

Worcester, MA

- Collaborated with camp lead to plan problem sets for a two-week-long camp aimed at introducing advanced mathematics ideas to high school girls

Activities Volunteer

Apr 15, 2023

AWM SK Day

Worcester, MA

- Assisted with a day-long program of talks and activities to encourage middle school girls in mathematics

Other Experiences

Editorial Staff Writer

Apr 2020 – present

OR/MS Tomorrow

Remote

- Contribute 1,000-word articles and essays for an online, biannual student publication on scholarship in operations research and management science

Lead Circulation Assistant

Aug 2020 – Nov 2021

Regent University Library

Virginia Beach, VA

Circulation Assistant

Aug 2018 – Aug 2020

Regent University Library

Virginia Beach, VA

Peer-Reviewed Publications

Mathematical

None

Non-Mathematical

Lindner, A & Hanlon, R. (2023). Outcomes of youth with foster care experiences based on permanency outcomes - adoption, aging out, long-term foster care, and reunification: a systematic review. *Children and Youth Services Review*. doi:10.1016/j.chilyouth.2023.107366

Lindner, A & Hanlon, R. (2023). Systematic review on the impact of ASFA on outcomes of children and birth families involved in the foster care system. *Adoption Quarterly*. doi:10.1080/10926755.2023.2286554

General Audience Publications (partial list)

Lindner, A. (2023). Operations research for social good: what to expect when working outside of industry and academia. *OR/MS Today*, February 2023.

Lindner, A. (2023). College competition and the connection to rising student costs. *OR/MS Tomorrow*, Fall/Winter 2023.

Lindner, A. (2022). Food, food, everywhere, but no scrap of health in reach: food inequity in socioeconomically disadvantaged and majority-minority communities. *OR/MS Tomorrow*, Fall/Winter 2021.

See full list of General Audience Publications at <https://abigaillindner.com/publications/>

Presentations

Applications of Mathematical Optimization to Art, *Ph.D. Student Seminar, WPI*, Feb 2024

Some Models of Bacterial Fouling of Filtration Membranes, *Ph.D. Student Seminar, WPI*, Jan 2024

Panel: Student Participation in DEI, *INFORMS Annual Conference, Phoenix, Arizona*, Oct 2023

Did the Adoption and Safe Families Act Make a Difference?: Statistical Models to Answer the Question, *Ph.D. Student Seminar, WPI*, Sep 2023

A Brief Introduction to SIR Models in Mathematical Epidemiology, *Girls Talk Math, WPI*, Jul 2023

Magic Squares, *Ph.D. Student Seminar, WPI*, Mar 2023

Stability Analysis in Mathematical Ecology, *Ph.D. Student Seminar, WPI*, Nov 2022

Academic and Professional Memberships

Association for Women in Mathematics (AWM)

Institute for Operations Research and the Management Sciences (INFORMS)

Society for Industrial and Applied Mathematics (SIAM)

Research Interests

Mathematical biology

Microbial ecology

Microfluid filtration

Mathematics for social good