

Lydia Reader

PhD Candidate

Email: lydia.reader@wustl.edu

EDUCATION

PhD Student in Computational and Data Sciences

Aug 2021 – Present

Washington University in St. Louis

Advisors: Ross A. Hammond, Nathan Jacobs

B.S. in Electrical Engineering *summa cum laude*

2015 – 2019

Washington University in St. Louis

Second major in Systems Science, minor in Computer Science

PUBLICATIONS

Kasman, M., Hammond, R. A., **Reader, L.**, Purcell, R., Guyer, S., Ganiban, J. M., Mitchell, D. C., Dabelea, D. M., Bellatorre, A., Bekelman, T. A., Cohen, C. C., Perng, W., Grummon, A. H., Wu, A. J., Oken, E., & Kleinman, K. (2023). Childhood Sugar-Sweetened Beverage Consumption: an Agent-Based Model of Context-Specific Reduction Efforts. *American Journal of Preventive Medicine*.

Reader, L., Nokhiz, P., Power, C., Patwari, N., Venkatasubramanian, S., & Friedler, S. (2022, June). Models for understanding and quantifying feedback in societal systems. In *2022 ACM Conference on Fairness, Accountability, and Transparency* (pp. 1765-1775).

ACTIVE RESEARCH

Early Childhood Health Outcomes

Jan 2022 – Present

Using agent-based model to study policies to reduce childhood consumption of sugar-sweetened beverages. Paper comparing model on three different randomized clinical trials currently under review. Leading expansion of model to synthetic, generalizable populations.

Agent-Based Model for GROW Trial

Oct 2022 – Present

Developing an agent-based model to explore environmental and social causes of childhood physical activity and physical activity disparities. Collaborating with researchers from the GROW trial at the Children's Hospital at Vanderbilt.

INDUSTRY

Software Engineer

Jul 2020 – Aug 2021

Boeing

- Automated GUI testing for proprietary flight simulator software
- Implemented automatic feedback on pilot performance during training sessions training sessions in flight simulators

Electrical Engineer

Jun 2019 – Jul 2020

Boeing

- Co-wrote 100+ page cybersecurity plan for developmental technology
- Briefed cybersecurity plan to Air Force customers
- Simulated power control circuitry to test margins on power consumption

TEACHING

Assistant to the Instructor

Aug 2023 – Present

Ross Hammond, Brown School, Washington University

- Teaching weekly lab section for Public Health PhD students Introduction to Agent-Based Modeling
- Designing lab structure and writing assignments

Assistant to the Instructor

Aug 2017 – May 2019

Randall Brown, Washington University

- Provided feedback and graded assignments for the Signals and Systems and Introduction to Electromagnetics courses

Instructor

Jun 2017 – Aug 2017

iD Tech

- Taught week-long courses in Electrical Engineering and Robotics to students in middle school and high school
- Organized weekly student showcase to present student projects to family and friends

CERTIFICATES

Complex Systems Science Summer School

Jun 2023 – Jul 2023

Santa Fe Institute

- Engaged in daily coursework on complexity science led by researchers at the Santa Fe Institute
- Completed two projects with peers relating to agent-based modeling, machine learning, and urban science

SERVICE

Graduate Ambassador

Aug 2022 – Present

McKelvey School of Engineering, Washington University

- Facilitated events for prospective graduate students to the McKelvey School
- Provided information on current programs at the university

Volunteer**Dec 2020 – Aug 2021***Neighborhood Innovation Center, Dutchtown St. Louis*

- Developed website for nonprofit focused on facilitating entrepreneurship in a low-income community
- Organized and supported events to generate traffic at local small-businesses

Director of Alumni Relations and Mentorship**Aug 2018 - May 2019***Society of Women Engineers, Washington University*

- Created and facilitated mentorship program to pair Freshmen and Sophomore women in engineering with Junior and Senior mentors
- Planned alumni engagement events to foster a larger community of women engineers

Community Service Committee Member**Aug 2016 - May 2018***Society of Women Engineers, Washington University*

- Led bi-weekly afterschool STEM club at Hawthorne Leadership School for Girls
- Organized speakers for STEM outreach events for young girls in St. Louis

HONORS**Outstanding Senior Award****2019**

Electrical and Systems Engineering, Washington University

Outstanding Junior Award**2018**

Electrical and Systems Engineering, Washington University

Outstanding Sophomore Award**2017**

Electrical and Systems Engineering, Washington University

Antoinette Frances Dames Award**2017**

McKelvey School of Engineering, Washington University