Haley Duba

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EDUCATION

Ph.D. Mathematics, *Purdue University,* West Lafayette, IN   Exp. May 2026

B.S. Mathematics; Minor Computer Science, *Wheaton College,* Wheaton, IL   May 2020

Budapest Semesters of Mathematics Participant, Budapest, Hungary   Fall Semester 2019
- Study abroad opportunity in which upper-level mathematics courses are taught by instructors from Eötvös University, the Mathematical Institute of the Hungarian Academy of Sciences, and Budapest University of Technology and Economics, institutions known for educating more than half of Hungary's highly acclaimed mathematicians.

RESEARCH EXPERIENCE

Mathematics Research Experience for Undergraduate Participant, *Iowa State University,* Ames, IO   Summer 2019
- Developed mathematical research maturity through investigating the Distributed Kaczmarz Algorithm as an extension of previous publications by faculty mentor Dr. Eric Weber
- Collaborated daily with three other undergraduate participants, as well as faculty mentor and numerous PhD student mentors, both in mathematical research and co-authoring two papers documenting final results

PROFESSIONAL POSITIONS

Summer Intern, *Electric Boat Corporation,* New London, CT   Summer 2018
- Utilized MATLAB and Simulink to produce formal engineering calculations based on prior reports, outlining and analyzing results from key submarine elements to be sent to the U.S. Navy for implementation
- Distilled complex engineering concepts into functional knowledge by initiating conversation, researching best practices, and reading relevant scholarly literature in order to meet and surpass project expectations

ACADEMIC POSITIONS

Women in Science Program Leadership Team, *Purdue University,* West Lafayette, IN   Fall & Spring Semesters 2021
- Organize events focused on encouraging diversity in STEM fields and developing necessary skills for success in STEM graduate programs

Teaching Assistant, *Purdue University,* West Lafayette, IN   Fall Semester 2020 & Spring Semester 2021
Plane Analytic Geometry and Calculus II
- Solidified students' understanding of course material through instructing recitation and writing quizzes

Teaching Assistant, *Wheaton College,* Wheaton, IL   Spring Semester 2019/Spring & Fall Semesters 2017
Discrete Mathematics and Functional Programming/Calculus I
- Interacted with and assisted students through facilitating small group study sessions for two hours per week
- Developed organizational skills and professional discretion through grading assignments completed by peers

Teaching Assistant, *Adventures with Mr. Math*, Oakbrook, IL   Fall Semester 2017 and Spring Semester 2018
- Managed classroom of gifted students ranging from 1st to 8th grade fostering a welcoming and safe atmosphere
- Facilitated group work between students during class, and offer one-on-one instruction after class
- Constructed activities and curriculum to challenge students to grow as mathematicians, specifically in competition math

Academic Tutor, *Self-Employed,* Mystic and Stonington, CT   September 2012 – May 2018
- Clarified confusing concepts to students by working together weekly, creating relationships with the student and his/her family that provide a safe learning environment in which students are encouraged to learn from their mistakes

- Built confidence in students' mathematical abilities by simplifying difficult concepts to enable understanding

Academic Mentor, *Marian Park Apartments,* Wheaton, IL   Fall Semester 2016 and Spring Semester 2017
- Tutored multiple high school students in all subjects, including mathematics, reading, and writing
- Developed positive academic and lifestyle habits in students and motivated them in future aspirations

HONORS AND AWARDS

- Kunze Scholarship (Purdue)   Awarded Fall 2020
- Honorable Mention Student Poster at JMM 2020   Spring 2020
- Bonnie Brabenec Memorial Scholarship (Wheaton)   Awarded Fall 2019
- Obtained Secret Security Clearance from the United States Government   Summer 2018
- Charles Blanchard Award (Wheaton)   Awarded Fall 2016

PUBLICATIONS AND PRESENTATIONS

- Borgard, R., Duba, H., Harding, S., Makdad, C., Mayfield, J., Tuggle, R., and Weber, E. (in preparation). *The Distributed Kaczmarz Algorithm on Directed Acyclic Graphs.*
- Borgard, R., Duba, H., Harding, S., Makdad, C., Mayfield, J., Tuggle, R., and Weber, E. *Accelerating the Distributed Kaczmarz Algorithm by Strong Over-relaxation,* Linear Algebra and its Applications, vol. 611 (2021), 334-355.
- Borgard, R., Duba, H., Makdad, C., and Tuggle, R. (2020, January). *Solving Linear Systems on a Distributed Network with the Kaczmarz Method.* Poster session presentation and lecture at Joint Mathematics Meetings in Denver, CO.

TECHNICAL SKILLS

- Known Programming Languages: Java (Advanced), C (Advanced), Python (Advanced)
- Known software: MATLAB (Advanced), Simulink (Advanced), Latex (Advanced)