

Ann Bigelow

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EDUCATION

Mathematics, Ph.D.	University of Wisconsin - Madison
Applied and Computational Mathematics	September 2024—Present
Applied Mathematics B.S., <i>Summa Cum Laude</i>	University of Utah
	August 2020—August 2024

RESEARCH PROJECTS

Singular Value Decomposition and an Application	May—August 2023
PI: Dr. Timothy Tribone, Research Associate (Mathematics)	Mathematics, Utah
<ul style="list-style-type: none">Worked in a small group to deepen our understanding of intermediate linear algebra topics.Proved lemmas which culminated in the process of singular value decomposition of complex-valued matrices.Individually researched interesting applications of SVD in the complex plane and authored a summary of an application, “eigenfaces.”Simplified the process of creating eigenfaces by offering a similar example regarding “eigenones,” which were generated images of the number <i>one</i>.	

Visualizing Hessian Matrices in MATLAB	September 2022—June 2023
PI: Dr. Alan “Chuck” Dorval, Director of Graduate Studies (BME)	Biomedical Engineering, Utah
<ul style="list-style-type: none">Considered the current state of visualization tools in the studies of neurological disorders.Created a spatial model in MATLAB which was scaled to the eigenvalues and eigenvectors of the voltage function’s Hessian matrix.Utilized ideas in mathematics and physics, including multivariable calculus, eigenspaces and manipulation of large matrices, electricity and voltage, and Gaussian surfaces.Worked to improve the placement of contacts during the process of deep brain stimulation treatments.	

EXPERIENCES

Learning Assistant: Calculus 1, Physics 1, Precalculus, Physics 2, College Algebra	January 2023—August 2024
Center for Science and Mathematics Education (CSME)	University of Utah
<ul style="list-style-type: none">Held weekly office hours and review sessions to solidify students’ understanding of beginner topics in mathematics. Individually led discussion sections. Attended lectures to aid instructors. Facilitated mathematical discussions.Attended weekly content preparation meetings with other instructors and learning assistants to plan course directions and goals.	
Mathematics Tutor	January—August 2023
Math Center	University of Utah
<ul style="list-style-type: none">Tutored students in calculus, linear algebra, differential equations, and introductory mathematics courses.	

Peer Mentor

August 2022—May 2023

Biology Learning Center

University of Utah

- Guided first and second-year undergraduates through college by providing advice and resources to promote student involvement and success.
- Attended weekly meetings to discuss outreach and mentorship strategies for the implementation of the new mentorship program.

VOLUNTEERING, CONFERENCES, AND MEMBERSHIP

Math for All

University of Utah

Poster Presenter—Singular Value Decomposition

April 2024

Graduate Research Opportunities for Women (GROW)

Duke University

Invited Participant

October 2023

Association for Women in Mathematics

University of Utah

Active Member

August 2022—Present

Biology Learning Center

University of Utah

Volunteer Tutor

January 2022—June 2022