

Emma Thomas

Education

University of Florida , Gainesville, FL Ph.D. in Mathematics	Expected May 2029
University of Wisconsin-Madison , Madison, WI Master of Arts in Mathematics	May 2023
Florida Atlantic University , Boca Raton, FL Bachelor of Science in Mathematics Minor in Computer Science	August 2020

Certificates

Florida Atlantic University Graduate Cybersecurity Certificate-Computer Science Track	May 2024
Erdős Institute Data Science Bootcamp	Fall 2023

Presentations

Estimation of Ocean Wave Spectra from Radar , Talk <i>G-RIPS Final Presentations, Tohoku University, Summer 2023</i>
Estimation of Ocean Wave Spectra from Radar , Talk <i>G-RIPS Midterm Presentations, Tohoku University, Summer 2023</i>
Proof of Van Kampen's Theorem , Talk <i>MATH552, Elementary Geometric and Algebraic Topology Class, Spring 2022</i>
How Gödel Transformed Set Theory , Talk <i>MATH770, Foundations of Mathematics Class, Fall 2021</i>
Symmetrical Structures , Poster <i>Florida Undergraduate Research Conference 2020</i>
Symmetry and Quasi-symmetry in Viral Capsid Structures , Talk <i>Florida Statewide Symposium on Undergraduate Research 2020</i>
Symmetry and Quasi-symmetry in Viral Capsid Structures , Talk <i>FAU chapter of SIAM, Fall 2020</i>
Symmetry is All Around Us , Poster <i>FAU's Undergraduate Research Symposium, 2020</i>
Optimizing Cancer Treatments , Poster <i>Computational and Mathematical Populations Dynamics Conference (CMPD5) 2019</i>

Research

Estimation of Ocean Wave Spectra from Radar Graduate-level Research in Industrial Projects for Students (G-RIPS) <i>Mitsubishi Electric Corporation, Institute for Pure and Applied Mathematics (IPAM), Tohoku University Advanced Institute for Materials Research (AIMR)</i> Developed an algorithm, implemented in python, to estimate wave spectra from the	June-August 2023
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Doppler spectrum data recorded by ocean HF radar, using Tikhonov regularization and gradient descent. Worked with a team of students from the US and Japan. As project manager, facilitated communications between team members, industrial mentors, and academic staff.

Symmetry in Viral Capsid Structures January 2020-August 2022
Worked with a team to investigate how group theory and other mathematical concepts can be used to model and describe the structures of viral capsids.

Optimizing Cancer Treatments January-May 2019
As part of an industrial research course, developed a model, coded in Matlab, for the populations of cancer cells with injected varying combinations of a vaccine and adoptive T-cells, based on data from experiments done by the Moffit Cancer Research Center.

Teaching

Teaching Assistant
University of Florida Gainesville, FL
Analytical Geometry and Calculus I Fall 2024
Analytical Geometry and Calculus II Spring 2025

Tutor Jupiter, FL
C2 Education January 2024- August 2024
Prepared students to compete in national math completions (AMC). Provided support for mathematics courses and SAT/ACT prep.

Teaching Assistant
University of Wisconsin-Madison Madison, WI
Elementary Matrix and Linear Algebra Fall 2022 and Spring 2023

Grader
University of Wisconsin-Madison Madison, WI
Modern Algebra Fall 2021 and Spring 2022

Tutor Jupiter, FL
Sylvan Learning Summer 2022
Tutor for K-12 Mathematics and Reading

Tutor Boca Raton, FL
Mathnasium August 2020-January 2022
Tutor for K-12 Mathematics

Supplemental Instruction Leader and Tutor Boca Raton, FL
Florida Atlantic University August 2019-August 2020
Facilitated bi-weekly group review and discussion sessions for Intro to Programming in C, and created weekly review worksheets. Provided tutoring for Intro to Programming in C, Data Structures and Algorithm Analysis, and Foundations of Computer Science courses.

Tutor Jupiter, FL
Self-Employed June-August 2017
Tutored prospective graduate school student in preparation for the Quantitative Reasoning portion of the GRE General Test

Mentoring

"Girls' Math Night", UW-Madison Fall 2022 -Spring 2023
Mentored 8th grade student in understanding the ideas in Number Theory necessary to

understand and implement the RSA cryptography algorithm, in a semester long project.

Reading Courses

Topological Data Analysis Study Group, Erdős Institute Spring 2024
Computational Topology for Data Analysis by Tamal Krishna Dey and Yusu Wang

Invitation to Nonlinear Algebra by Sturmfels and Michalek Oct 2022-May 2023
Reading Course with Dr. Rodriguez, UW-Madison

Conferences

Florida Women in Mathematics Day, Florida Atlantic University April 2024
Florida Women in Mathematics Day, Florida Atlantic University March 2023
Arithmetic and Topology over Global Fields, UW-Madison Oct 2022
Florida Women in Mathematics Day, Florida Atlantic University Feb 2022
Florida Women in Mathematics Day, Florida Atlantic University Feb 2021
Florida Statewide Symposium on Undergraduate Research,
Florida Undergraduate Research Association Oct 2020
Undergraduate Research Symposium, Florida Atlantic University April 2020
Florida Undergraduate Research Conference,
Florida Gulf Coast University, Feb 2020
Florida Women in Mathematics Day, Florida Atlantic University Feb 2020
Computational and Mathematical Populations Dynamics Conference,
Fort Lauderdale, FL May 2019
Florida Women in Mathematics Day, Florida Atlantic University Feb 2019

Computer

Languages: Python, C, C++, SQL, Matlab, html, LaTeX, Sage

Other

Graduate Mathematics Association August 2024-Present
UF Taekwondo Club August 2024-Present
- Demo Team
Association of Women in Mathematics April 2019- Present
FAU Taekwondo Club January 2017-August 2021, Jan-Aug 2024
- President
- Black Belt
- Instructor
Cyber Security Club, UW-Madison September 2022-May 2023
Gender Minorities in Mathematics at Wisconsin September 2022-May 2023
UW-Madison Taekwondo Club August 2021-June 2023
FAU Math Club August 2018-July 2021