

Melissa Beerbower

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EDUCATION

Master's of Science in Mathematics, University of Wisconsin-Milwaukee, expected December 2026
Completed Master's Project, *On Displacement in Fubini Rankings*, with advisor Dr. Pamela E. Harris.

Bachelor's of Science in Mathematics, Loyola University Chicago, December 2024
Graduated *summa cum laude* with departmental honors. Completed the Interdisciplinary Honors Program and minors in Islamic World Studies and Arabic Language and Culture.

RESEARCH EXPERIENCE

Graduate Research Mentor, June-July 2026

NSF REU Site: Combinatorics and Coding Theory in the Tropics, University of Puerto Rico in Ponce, supported via NSF-DMS REU award 2150434. Worked under supervision of Dr. Pamela E. Harris. Responsibilities:

- Led the following Professional Development Workshops: 1) using LaTeX, 2) creating a CV, 3) conducting a literature review, 4) giving a math colloquium, 5) designing effective slides for math colloquium, 6) writing abstracts and introductions, 7) making posters in Beamer, and 8) building a professional website on Github.
- Led daily (virtual) research meetings for combinatorics research team consisting of three undergraduates.
- Contributed to the mathematics and provided editing on student work included in the content of the research manuscript.

Graduate Research Mentor, June 2025

MAA: NREUP, Graph Enumeration and Mathematical Studies (GEMS) Undergraduate Program, UW Milwaukee, Summer 2025. Worked under the supervision of Drs. Gabriella Pinter and Pamela E. Harris. Responsibilities:

- Led the following Professional Development Workshops: 1) writing introductions, 2) writing abstracts, 3) and conducting a literature review.
- Mentored four undergraduate researchers in projects in (t, r) broadcast domination.
- Provided meticulous one-on-one feedback to mentees on their definitions, proofs, presentation slides, and speaking skills.

Undergraduate Researcher, June - August 2024

NSF REU Site: Combinatorics and Coding Theory in the Tropics, University of Puerto Rico in Ponce, supported via NSF-DMS REU award 2150434. Responsibilities:

- Conducted research full-time under the supervision of Drs. Pamela E. Harris and Jennifer Elder.
- Participated in two projects: 1) Lucky Polynomials of Subsets of Fubini Rankings and 2) Enumerating Lehmer Parking Functions. See publication items (1) and (3).

PUBLICATIONS

Research Articles

- (4) *Cayley Permutations, Fubini Rankings, and Unit Interval Parking Functions*
Eban Barret, Melissa Beerbower, Jennifer Elder, Pamela E. Harris, Maritza Sanchez, T.J. Vo, and Cyrus Young. In preparation.

- (3) *Lehmer Parking Functions*
Melissa Beerbower, Jennifer Elder, Pamela E. Harris, Ilana Lavene, Lucy Martinez, Adam Martinson, and Molly Oldham. Submitted.
- (2) *Counting ℓ -Interval Fubini Rankings Through their Parking Outcomes*
Bjorn Andreas Ager-Hart, Melissa Beerbower, Pamela E. Harris, Joakim Jakovleski, and Matt McClinton. Submitted.
- (1) *Lucky Cars in Fubini Rankings and Unit Fubini Rankings*
Camilo Barreto, Melissa Beerbower, Jennifer Elder, Pamela E. Harris, Lucy Martinez, José L. Ramírez, Samuel Ramírez, Grant Shirley, and Julio C. Vasquez. To appear in *Studia Scientiarum Mathematicarum Hungarica*.

Contributions to the Profession

- (2) *Graduate Student Reflections on Mentoring Undergraduate Researchers in Mathematics*
Melissa Beerbower, Jillian Cervantes, Pamela E. Harris, Kimberly J. Harry, Matt McClinton, and Gabriella Pinter. To appear in *Journal of Humanistic Mathematics*.
- (1) *A Day in the Life of Marielle Gardner at Desmos*
Melissa Beerbower. *Math Horizons*, Volume 33, Issue 1, September 2025.

PRESENTATIONS

- (6) *Gershgorin Discs*, June 2026
Enhancing Diversity in Graduate Education Colloquium, University of Waterloo
- (5) *Poster: Counting ℓ -Interval Fubini Rankings*, May 2026
Great Plains Combinatorics Conference, University of Kansas
- (4) *Parking Functions: How to Do Math Research*, March 2026
Osher Lifelong Learning Center Scholar, University of Wisconsin-Milwaukee
- (3) *Fubini Rankings with a Fixed Set of Lucky Cars*, January 2025
Joint Mathematical Meetings
- (2) *On the Lucky Sets of Fubini Rankings*, September 2024
University of Wisconsin-Milwaukee Graduate Colloquium
- (1) *Lucky Sets of Fubini Rankings*, August 2024
Loyola University Chicago Undergraduate Colloquium

TEACHING EXPERIENCE

Teaching Assistant – University of Wisconsin-Milwaukee

- Discussion Leader
 - Math 103: Contemporary Applications of Mathematics, Fall 2025 - Spring 2026
- Instructor of Record
 - Math 105: Introduction to College Algebra, Spring 2025

Tutor

- Math, Spring 2024 to present
 - Honors Algebra, for an 8th grade student enrolled in high-school, Fall 2025 - Spring 2026
 - Veterans Upward Bound, University of Wisconsin-Milwaukee, college prep, Summer 2025
 - Achieving College Excellence, Loyola University Chicago; Logic, Algebra, Pre-calculus, 2024
- Writing, Spring 2024
 - Nominated by professor of Sufi Literature for writing and interpersonal skills to be part of Engaged Learning Course: Theory and Practice of Writing Tutoring.
 - Tutored 16 hours in Loyola University Chicago's Writing Center.
 - Attended professional development workshops on accessibility, neuro-divergence, and written feedback.
 - Conducted research project on how the Writing Center could collaborate with STEM departments and presented it to STEM faculty and the WC Instructional Director leading to an initiative to place writing fellows in critical STEM classes.

SERVICE

Volunteer Tutor at Forging Opportunities for Refugees in America, Summer 2023

- Provided customized high dosage tutoring in literacy and arithmetic for refugee students with limited or interrupted formal education.
- Synthesized working on student's current high school courses with creating a solid foundation in arithmetic and phonics.
- Created math worksheets tailored to student.
- Used Arabic language skills to improve understanding with Pashto-speaking students.

AWARDS AND HONORS

- *Morris & Miriam Marden Graduate Award for Mathematics*, Spring 2026
Awarded to graduate students with an outstanding paper (research article (1) above) written on a mathematical topic as deemed by a committee of faculty members, based on quality of exposition and mathematical content.
- *Honorable Mention*, Spring 2025
National Science Foundation Graduate Research Fellowship
- *Waldemar J. Trjitzinsky Memorial Award*, Summer 2024
American Mathematical Society
- *Philipp Endowed Scholarship*, Fall 2023
- *Rataj Endowed Scholarship*, Fall 2023
- *Bronze Presidential Volunteer Service Award*, Summer 2023
Awarded for 182 hours of volunteer work at Forging Opportunities for Refugees in America.
- *Damen Scholarship*, Fall 2016 - Spring 2018, Fall 2022 - Spring 2024