Curriculum Vitae

EDUCATION

Wesleyan University | Middletown, CT | 2024-Present Ph.D. (Mathematics)/ M.A. (Computer Science), Expected May 2030.
Smith College | Northampton, MA | 2023-2024 Post-Baccalaureate Certificate (Mathematics), May 2024. GPA: 3.96.
Bard College | Annandale-on-Hudson, NY | 2018-2023 B.A., May 2023. Majors: Mathematics and Studio Arts. GPA: 3.94.
Charter School of Wilmington | Wilmington, Delaware | 2014-2018 Highschool Diploma, June 2018. GPA: 4.37.

AWARDS

1. 2023 | **Sara Gelbart Prize in Mathematics** (Bard College)

   Citation. A prize honoring a woman whose life was devoted to the encouragement of science and scholarship and given annually to the Bard College student who shows the most promise and produces outstanding work in mathematics

2. 2023&2022&2021 | **Scholar-Athlete of the Year Award** (Bard College)
3. 2023&2022&2021 | **Academic All-America Nominee** (College Sports Communicators)
4. 2023&2022&2021&2019 | **Academic All-District** (College Sports Communicators)
5. 2021 | **Class of '65 Scholar** (Bard College)

   Citation. A scholarship established by the Class of 1965 on the occasion of their 35th reunion, awarded annually to a student who embodies their spirit of leadership and intellectual curiosity

6. 2021 | **Seth Goldfine Memorial Scholar** (Bard College)

   Citation. A scholarship given annually in memory of Seth Goldfine, who founded the Rugby Club at Bard, recognizing a student who displays outstanding leadership in academic work and athletics for the benefit of the entire Bard community

7. 2021 | **Community Action Award Recipient** (Bard College)

   Citation. CAAs support student efforts to engage with communities locally, nationally, and internationally by providing funding for participation in unpaid internships that address issues impacting people around the world.

8. 2020 | **Muriel DeGré Scholar** (Bard College)

   Citation. A scholarship given annually by family and friends in memory of Muriel DeGré, wife of Gerard DeGré, professor of sociology at Bard College from 1946 to 1968, and awarded to a deserving Upper College woman who exemplifies both scholarship and service to the community

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PUBLICATIONS

1. 2023 | Crager, J., Flores, F., Goldberg, T.E. et al. **How Many Cards Should You Lay Out in a Game of EvenQuads: A Detailed Study of Caps in AG(n,2).** La Matematica 2, 382–419 (2023). https://doi.org/10.1007/s44007-023-00047-0
2. 2023 | Flores, Felicia Elizabeth, **"Parking Garage Functions"** (2023). Senior Projects Spring 2023. 262. https://digitalcommons.bard.edu/senproj_s2023/262

TALKS

1. April 2024 | **Hudson River Undergraduate Mathematics Conference** - Combinatorics Session (TBD)
   "Stranding SL_n Webs"
2. January 2024 | **Joint Mathematics Meetings** - AMS-SIAM Special Session on Research in Mathematics by Undergraduates and Students in Post-Baccalaureate Programs (San Francisco, CA)
   "Stranding Webs and Springer Fibers"
3. December 2023 | **Smith College Colloquium** - Mathematical Sciences Department (Smith College)
   "Stranding SL_n Webs"
4. September 2023 | **Women in Mathematics in New England** - Discrete Mathematics Session (Smith College)
   "Parking Garage Functions"
5. April 2023 | **Hudson River Undergraduate Mathematics Conference** - Combinatorics Session (Mount Holyoke College)
   "2-Caps in the Game of EvenQuads"
6. January 2023 | **Joint Mathematics Meetings** - AMS-SIAM Special Session on Research in Mathematics by Undergraduates and Students in Post-Baccalaureate Programs (Boston, MA)
   "2-Caps in the Game of EvenQuads"
7. November 2022 | **Bard College Senior Project Prospectus Talks** - Mathematics Program (Bard College)
   "Counting k-Complete Parking Functions"
8. September 2020 | **Women in Mathematics in New England** - Graph Theory Session (virtual) *"Open Source Software for Computing Adinkras"*

POSTER PRESENTATIONS

Invited:

1. May 2023 | **Board of Trustees Reception** - Division of Science, Mathematics, and Computing Poster Session (Bard College)
   "Parking Garage Functions"

Selected:

1. May 2023 | **Senior Project Poster Session** (Bard College)
   "Parking Garage Functions"
2. May 2023 | **Discrete Math Workshop** - Poster Session (Smith College)
   "2-Caps in the Game of EvenQuads"
3. April 2023 | **Women in Algebra and Combinatorics Conference** - Poster Session (University at Albany)
   "2-Caps in the Game of EvenQuads"
4. October 2022 | **Bard Summer Research Institute Poster Session** (Bard College)
   "2-Caps in the Game of EvenQuads"

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5. August 2022 | **MAA MathFest** - Outreach Poster Session (Philadelphia, PA)
   "MAGPIES: Math & Girls + Inspiration = Success, Lessons Learned and Plans for the Future"
6. October 2021 | **Bard Summer Research Institute Poster Session** (Bard College)
   "Mathematics Behind EvenQUADS"
7. October 2020 | **Bard Summer Research Institute Poster Session** (Bard College)
   "Open Source Software for Computing Adinkras"

RESEARCH

1. 2023-2024 | **Course: Topics in Advanced Mathematics - Research** - Advisor: Julianna Tymoczko (Smith College)

   The subject matter of my research is SL_n webs, planar directed graphs with a boundary. The boundary vertices have 1 edge while non-boundary vertices have 3 edges, edges are labeled with an integer modulo n, and adjacent edges of non-boundary vertices satisfy an algebraic constraint on their direction and label. Strands are colored directed paths with an associated n-length bit string through the graph. A stranding of a SL_n web is a collection of strands such that no two strands of the same color intersect, every edge has at least one strand, and the strands satisfy an algebraic constraint along each edge. Stranding is a new concept and has many open questions. The self designed goal of this project is to develop an algorithm that inputs an Sl_n web and outputs a valid stranding of the SL_n web.

2. 2022-2023 | **Senior Project** - Advisor: Lauren Rose (Bard College)

   The self selected subject matter of my research was about an introduced generalization of parking functions called parking garage functions. Parking garage functions are sequences that represent the parking garage level preferences of cars which lead to all cars parking on a level after a systematic placement. The self designed goal of this project was to find a closed and recursive formula for the number of sequences that are a parking garage function. I found a closed formula for the number of sequences in a subset of parking garage functions, descending parking garage functions, via a bijection between descending parking garage functions and Dyck paths. Dyck paths are paths on a rectangular grid which only take right and upward steps starting at the origin and remain under a positively sloped diagonal that goes through the origin. I also found a recursive formula for the number of sequences that are a parking garage function.
   Coding Language Used: Python

3. 2022 | **Bard Summer Research Institute** - Advisor: Lauren Rose (Bard College)

   The subject matter of our research was EvenQuads, a variant of the popular card game SET®, which was developed by Lauren Rose and Jeffrey Pereira and published by the Association for Women in Mathematics. A Quad is a set of 4 cards that satisfy a certain pattern. The self designed goal of this project was to find and classify collections of cards that do not contain a Quad, called 2-caps. In particular, for each nonnegative integer k, we classified 2-caps that contain k distinct triples of cards in the 2-cap that determine the same fourth card. This game is modeled by the affine geometry AG(n,2), allowing us to study this problem in higher dimensions.
   Coding Language Used: Python

4. 2021 | **Bard Summer Research Institute** - Advisor: Lauren Rose (Bard College)

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The subject matter of our research was EvenQuads, a variant of the popular card game SET®, which was developed by Lauren Rose and Jeffrey Pereira and published by the Association for Women in Mathematics. The goal of this project was to research the rich mathematics of EvenQuads that emerged by representing EvenQuads cards as elements of a finite vector space in an effort to match the depth of the research already published on SET®.

5. 2020 | **Bard Summer Research Institute** - Advisor: Stefan Mendez-Diez (Bard College)

   The subject matter of our research was the Adinkra, a special type of graph meant to model supersymmetry. The goal of this project was to add to the functionality of a program started in a previous summer. We would like this program, named "adinkra-calc", to output a graph of a true Adinkra, given only a couple parameters. The difficulty in this comes from the various properties an Adinkra has, and the different categories of Adinkras.
   Coding Language Used: Bash

ADVANCED MATHEMATICS COURSEWORK

Graduate Level:

1. MATH507 - **Topics in Combinatorics** (Wesleyan University)
2. MATH514 - **Analysis I** (Wesleyan University)
3. MATH524 - **Topology I** (Wesleyan University)
4. MATH544 - **Algebra I** (Wesleyan University)
5. MATH513 - **Analysis I** (Wesleyan University)
6. MATH523 - **Topology I** (Wesleyan University)
7. MATH543 - **Algebra I** (Wesleyan University)
8. Independent Study - **Algebra II** (Smith College/University of Massachusetts Amherst)
9. MTH 611U - **Algebra I** (University of Massachusetts Amherst)

Undergraduate Level:

10. MTH 329M - **Topology** (Mount Holyoke College)
1. MTH 238 - **Number Theory** (Smith College)
2. Independent Study - **Probability** (Smith College)
3. MATH 361 - **Real Analysis** (Bard College)
4. MATH 332 - **Abstract Algebra** (Bard College)
5. MATH 313 - **Discrete and Computational Geometry** (Bard College)
6. MATH 317 - **Graph Theory** (Bard College)

CODING BACKGROUND

1. Algorithms (**Processing** and **Bash**)
2. Discrete and Computational Geometry (**Python**)
3. Proofs and Fundamentals (**LaTeX**)
4. Data Structures (**Java**)
5. Elementary Linear Algebra (**MATLAB**)
6. Object Oriented Programming (**Processing**)
7. Web Application Development (**HTML**, **CSS**, **Java**, and **PHP**)

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TEACHING/ TUTORING

1. 2025 | **Teaching Assistant for Graph Theory** (Wesleyan University)

   I held office hours and wrote homework solutions for students.

2. 2024 | **Teaching Assistant for Multivariable Calculus** (Wesleyan University)

   I held office hours and graded homework.

3. 2023-Present | **Teaching Assistant for Abstract Algebra** (Smith College)

   I held office hours.

4. 2023-Present | **Teaching Assistant for Introduction to Discrete Mathematics** (Smith College)

   I held office hours, evaluated proof assignments, and returned feedback directly to the students.

5. 2023 | **Teaching Assistant for Graph Theory** (Bard College)

   I held office hours and provided in-class support to the professor.

6. 2019-2023 | **Math Study Room and Private Tutor for the Bard Learning Commons** (Bard College)

   Math Study Room and private tutors for the Bard Learning Commons cater mostly to undergraduate students wanting assistance in Precalculus and Calculus 1 outside of classroom and office hours with their professors.

7. 2019-2022 | **Head Citizen Science Laboratory Teaching Assistant** (Bard College)

   The Citizen Science program is an innovative program which provides first-year students with opportunities to develop their personal science literacy through hands-on, real-world coursework and projects. Laboratory Teaching Assistants design and facility the laboratory experience of the program. As head, I managed the performance of the assistants.

8. 2019 | **Language and Thinking Twine Teaching Assistant** (Bard College)

   The Language and Thinking program at Bard College is a writing intensive introduction to the liberal arts for first-year students. Twine Teaching Assistants design and facilitate the computing component of the program which provides all students the opportunity to code through the browser-based application Twine with the goal of making everyone more informed, critical consumers and empowered producers of digital media.

LEADERSHIP/ OUTREACH

1. 2025-Present | **Founder/Treasurer of the Association for Women in Mathematics Student Chapter** (Wesleyan University)

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The programs of the Association for Women in Mathematics not only support those who participate in them directly, but also play a critical role in increasing the presence and visibility of women in the mathematical sciences. Student chapters continue the AWM's mission on a college level by building communities of support!

2. 2022-2023 | **Director of Bard MAGPIES for the Trustee Leader Scholar Program** (Bard College)

   I led Bard MAGPIES which is a free math enrichment and mentoring program for 4th-9th grade girls and others of marginalized gender identities across the mathematical sciences. We designed and facilitated both accessible and open-ended activities amongst a supportive community in order to enhance their confidence in problem–solving skills.

3. 2022-2023 | **Founder/President of the Association for Women in Mathematics Student Chapter** (Bard College)

   The programs of the Association for Women in Mathematics not only support those who participate in them directly, but also play a critical role in increasing the presence and visibility of women in the mathematical sciences. Student chapters continue the AWM's mission on a college level by building communities of support!

3. 2021-2023 | **Bard Prison Initiative Mathematics Tutor** (Eastern NY Correctional Facility)

   The Bard Prison Initiative offers a B.A. from Bard College to inmates across seven prisons in New York State. At Eastern NY Correctional Facility, I provided academic support in one-on-one or group-style tutoring sessions.

4. 2019 - 2022 | **Director of Bard Math Circle for the Trustee Leader Scholar Program** (Bard College)

   I led the Bard Math Circle which serves elementary, middle, and high school students in the Mid-Hudson Valley. We ran math enrichment programs in the community, a Girls Math Club, math contests, preparatory sessions for the math contests, and a late-summer Creative and Analytical Math Program (CAMP). In response to Covid-19, we started an online tutor network to meet the demand of after school academic support.