

CONTACT
INFORMATION

Alfred University
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EDUCATION

Binghamton University: PhD in Mathematics, 2017. Thesis title: *Locally Solvable Subgroups of $PLo(1)$* . MA in Mathematics, 2009

University of Maine at Farmington: BA in Mathematics, magna cum laude, December 2006

WORK
EXPERIENCE

Associate Professor *Math and Computer Science Division* (fall 2020-present)

Tenure-track Faculty Member *Math Dept., Alfred University* (fall 2014-2020)

Teach 3 courses each semester with experience so far in Calculus I, II, and III; online Calculus I and II; Differential Equations; History of Mathematics; General Topology; Advanced Calculus; Mathematical Statistics; Modern Algebra; Mathematical Cryptography; and Mathematics and Art.

Adjunct Lecturer *Math Dept., Binghamton University* (Fall 2013-Spring 2014) Taught 3 courses of flipped Calculus I, mentored 2 undergraduates and a graduate student in the flipped method, and taught Calculus III.

Graduate Teaching Assistant *Math Dept., Binghamton University* (Fall 2008-Spring 2013)

Was instructor of record for Algebra and Trigonometry as well as Calculus I, II, and III.

Teaching Assistant *Binghamton Enrichment Program* (Summer 2009) Assisted with teaching algebra and trigonometry to students from disadvantaged backgrounds as a part of the Equal Opportunity Program.

GRANTS

National Science Foundation Division of Mathematical Sciences

- 2011 NSF - DMS1134983: \$14,963.00
- 2010 NSF - DMS1066160: \$18,838.00
- 2009 NSF - DMS0946269: \$17,988.00

These grants were for organizing the Binghamton University Graduate Conference in Algebra and Topology (BUGCAT): <https://seminars.math.binghamton.edu/BUGCAT/index.html>. In addition to writing and applying for the first grant in 2009, I assisted with future grants and I played a major role in organizing in 2009-2010. I pushed for minority support in the form of travel funding, proposed we have at least one female keynote a year, and used targeted advertising to reach underrepresented groups. The first year I organized, female and minority participation grew by 40%. This conference inspired an offshoot conference called USTARS which I advised in the grant-writing phase: <https://www.ustars.org/>.

PUBLICATIONS
AND CREATIVE
WORK

1. "Automating Crochet Patterns for Surfaces of Revolution." Joint with Megan Martinez, Ithaca College. *Bridges Conference Proceedings*, Halifax, Nova Scotia, July 27–31, 2023, pp. 195–202. <https://archive.bridgesmathart.org/2023/bridges2023-195.html#gsc.tab=0f>
2. "Hooked on Calculus: Crocheting Quadric Surfaces." Joint with Megan Martinez, Ithaca College. *Bridges Conference Proceedings*, Halifax, Nova Scotia, July 27–31, 2023, pp. 203–210. <https://archive.bridgesmathart.org/2023/bridges2023-203.pdf>
3. **Crocheting Surfaces of Revolution*, 2023. Code that outputs crochet patterns given user input, joint with Megan Martinez, Ithaca College. Online access links: https://github.com/meganmartinez/math_crochet, https://cocalc.com/github/meganmartinez/math_crochet
4. "A Functional Family." Mathematical artwork, joint with Megan Martinez at Ithaca College.
 - Exhibited July 27–31, 2023 in Halifax, Nova Scotia at Dalhousie University
 - Published in *Bridges Halifax 2023 Art Exhibit Catalogue*, <https://gallery.bridgesmathart.org/exhibitions/2023-bridges-conference/megan-martinez-amanda-taylor-lipnicki>
 - Supplemental information page: https://meganmartinez.github.io/Functional_Family/index.html
5. "Hyperbolic Chiaroscuro." Mathematical artwork.
 - Exhibited January 4–7, 2023 in Boston, MA at the Joint Mathematics Meeting (the largest math conference in the world) *Exhibition of Mathematical Art*
 - Published in *JMM Boston 2023 Art Exhibit Catalogue*, https://gallery.bridgesmathart.org/exhibitions/2023-joint-mathematics-meetings/lady_asphodel
 - To be exhibited July 27–31, 2023 in Halifax, Nova Scotia at Dalhousie University
 - Published in *Bridges Halifax 2023 Art Exhibit Catalogue*, <https://gallery.bridgesmathart.org/exhibitions/2023-bridges-conference/amanda-taylor-lipnicki>
6. "Little Quadric Lights." Mathematical artwork.
 - Exhibited August 1-4, 2022 in Espoo, Finland at Aalto University

- Published in *Bridges Helsinki 2022 Art Exhibit Catalogue*, http://gallery.bridgesmathart.org/exhibitions/2022-bridges-conference/lady_asphodel
 - Exhibited in a curated show January 4, 2023 in Boston, MA at the Joint Mathematics Meetings (the largest math conference in the world) Special Session of the AMS (American Mathematical Society) on the mathematics of fiber arts
 - Published in the online chronicle of the special exhibit <http://www.toroidalsnark.net/mkss4-pix/amanda-t-1-1q1.html>
7. “Saddle Bracelet.” Mathematical artwork.
 - Exhibited in a curated show January 4, 2023 in Boston, MA at the Joint Mathematics Meetings (the largest math conference in the world) Special Session of the AMS (American Mathematical Society) on the mathematics of fiber arts
 - Published in the online chronicle of the special exhibit <http://www.toroidalsnark.net/mkss4-pix/amanda-t-1-saddle.html>
 - Modeled in the 2023 Bridges Fashion Show
 - Published in *Bridges Halifax 2023 Fashion Show* online <https://gallery.bridgesmathart.org/exhibitions/2023-bridges-conference-fashion-show>
 - Published in the *Bridges 2023 Math + Fashion Lookbook*
 8. “Cut the Cord.” Essay submitted 2022.
 9. “Forgiveness as an Artform.” Essay submitted 2022.
 10. “A classification of countable wreath products on the integers.” Submitted summer 2022, preprint: <https://arxiv.org/abs/1708.01290>.
 11. *Locally solvable subgroups of PLo(I) are countable*; International Journal of Algebra and Computation; July 2019
 12. “Rotation.” Mathematical artwork.
 - Exhibited July 16-20, 2019 in Linz, Austria, at Johannes Kepler University
 - Published in *Bridges Linz 2019 Art Exhibit Catalogue*, http://gallery.bridgesmathart.org/exhibitions/2019-bridges-conference/lady_asphodel
 13. “Lights, Camera, Action.” Mathematical artwork.
 - Exhibited July 16-20, 2019 in Linz, Austria, at Johannes Kepler University
 - Published in *Bridges Linz 2019 Art Exhibit Catalogue*, http://gallery.bridgesmathart.org/exhibitions/2019-bridges-conference/lady_asphodel
 14. **Differential Equations and Applications* course workbook with new lessons and continued editing, spring 2020
 15. **Chair of the committee for the first Alfred University honors thesis on mathematics and art—More than Visual: Mathematical Concepts with the Artwork of LeWitt and Escher* written by senior math major Kelsey Bennett, spring 2019
 16. **Research project advisor for Integrating Elements of Thompson’s Group F*, a project worked on with senior math major Valerie Cardillo, spring 2016

*non-peer reviewed work

RESEARCH SCHOOLS, WORKSHOPS, AND VISITS

- ChatGPT Discussion Series, Alfred University, spring 2023
- Weekend research trips, April 5-6, 2019; May 18-19, 2019; and March 11-12, 2023 to collaborate with Megan Martinez at Ithaca College
- Grant-supported research trip to the University of Virginia—invited by Thomas Koberda, August 2018
- *PL Morse theory and applications*—run by Mladen Bestvina, Spring Topology and Dynamical Systems Conference, March 2018
- *Getting your research off to a good start*—MAA Mathfest, July 2017
- *Young Geometric Group Theory IV*—Winter Research School in Spa, Belgium, January 2015
- *Ohio State University Summer Schools*—Examples of Group Geometries, 2011; Examples of Group Actions, 2010; More Examples of Groups, 2009

OTHER WORKSHOPS AND PROFESSIONAL ACTIVITY

- *American Association for University Women*—Salary negotiation workshop, April 2018
- *Joint Mathematics Meetings, San Diego, CA*—Attended this conference to continue strengthening connections with other Project NExT fellows, conduct reconnaissance related to mathematics and art, and continue building mentoring and coaching skills. Notable talks and activities include: 1. Ikebana: A Mathematical Experience, Felicia Tabing, 2. Changing Mathematical Relationships and Mindsets: How All Students Can Succeed in Mathematics Learning, Jo Boaler, and 3. Project NExT reception and consulting meeting, January 2018
- *Workshop on working with first generation college students*, Alfred University, January 2018
- *NSF Grant writing workshop*—MAA Mathfest, July 2017.
- *The Mathematics of String Art*—Participated in a 5-hour workshop, Hornell Junior Senior High School, Hornell, NY, May 2017
- *Joint Math Meetings, Atlanta, GA*—Participated in a 4-hour workshop on Teaching the Mathematics of Computer Graphics, January 2017

- *MathFest, Columbus, OH*—Participated in workshops and minicourses on 1. Student-Centered Advanced Math Courses, 2. Helping Students Learn to Write Proofs, 3. Creating a Vibrant and Inclusive Community, 4. Teaching Using Tactile Visualization Techniques, and 5. An Inquiry-Oriented Smorgasbord, August, 2016
- *Cornell University Teaching Workshop*—Focused on geometry, differential equations, and projects for students interested in engineering, spring 2016
- *Mathematical Association of America Seaway Conference*—Attended at SUNY Geneseo, April 2016
- *Mathematical Association of America Seaway Conference*—Notable talks and activities include: 1. Sculpture Barn Raising Math Art Workshop, George Hart, 2. Mathematics and Game Theory, fall 2014
- *Alfred University Calculus Initiative Workshop*—Focused on a teaching model and curriculum for Calculus I developed with funding through the National Science Foundation, fall 2014
- *American Mathematical Association of America*, fall 2022-present
- *Mathematical Association of America (MAA) Member*, fall 2016-present
- *Finitely Presented Solvable Groups Conference*, CUNY, spring 2011

Note: Other conferences attended may only be listed in “Selected Talks” to avoid repetition.

SELECTED TALKS

1. “Mathematics, Art, and Culture in Finland and Iceland.” AU Bergren forum presentation, fall 2022, <https://www.youtube.com/watch?v=M0cwjnEJBVQ&t=1348s>
2. “Soft Calculus.” AU Bergren forum presentation, spring 2022, <https://www.youtube.com/watch?v=v57r8tsMjMk>
3. “Locally solvable subgroups of $PLo(I)$ are countable.” Invited Talk: American Mathematical Society (AMS) Special Session on Groups acting on manifolds and related structures, Binghamton University, October 2019
4. “A survey of subgroup results in Thompson’s group F .” Invited Talk: American Mathematical Society (AMS) Special Session on What’s new in group theory, Binghamton University, October 2019
5. “A Family of Locally Solvable Subgroups of Thompson’s Group F .” Invited Talk: Zassenhaus Groups and Friends Conference, Binghamton University, May 2019
6. “A Family of Locally Solvable Subgroups.” Invited Talk: Algebra and Topology Seminar, SUNY Albany, April 2019
7. “Career Paths from Math at AU.” Open talk for all students, Alfred University, falls 2018 and 2019
8. “Concepts in Higher Mathematics and Group Theory.” Invited Talk: Undergraduate Mathematics Seminar, Ithaca College, April 2018
9. “A family of locally solvable subgroups of $PLo(I)$.” Invited Talk: Spring Topology and Dynamical Systems, Auburn University, March 2018
10. “Gender Equality in Education and Mathematics.” Social Justice Teach-In, Alfred University, March 2017
11. “Mugs with Math and Cryptography.” Mugs with Math, Alfred University, October 2017
12. “Concepts in Higher Mathematics and Group Theory.” Bergren Forum, Alfred University, September 2017
13. “Career Paths from Math.” Nevins Competition talk for high school math teachers and guidance counselors, Alfred University, fall 2015
14. “Locally Solvable Subgroups of $PLo(I)$.” Joint Math Meetings, January 2013
15. “Locally Solvable Subgroups of $PLo(I)$.” Invited Talk: AMS Special Session on Interactions Between Geometry and Topology, University of Akron, fall 2012
16. Syracuse University Graduate Student Mathematics Conference
 - *Solvable Subgroups of $PLo(I)$* , spring 2011
 - *The Burnside Problem for Periodic Groups*, spring 2010
17. Binghamton University
 - *Locally Solvable Subgroups of $PLo(I)$* , fall 2012
 - *Quasi-isometric Embeddings of $F \times \mathbb{Z}$ into F* , fall 2010
 - *The Burnside Problem for Periodic Groups*, spring 2010
 - *Morse Inequalities*, spring 2010
 - *Thompson’s Group T* , fall 2009
 - *Trees and Amalgamated Products*, spring 2009
 - *Smooth Manifolds*, fall 2008

HONORS AND AWARDS

- Invited to submit artwork to a curated art show that was a special session of the American Mathematical Society regarding fiber arts and mathematics, fall 2022.
- Invited to give six talks in 2018-2019, including two special sessions of the American Mathematical Society.
- Two pieces of artwork displayed in the 2019 Bridges Exhibition of Mathematical Art, Johannes Kepler University, July 2019, were selected by a professional panel of 4 people: Robert Fathauer, Karl Kattchee, Barbara Lichtenegger, and Uyen Nguyen.

- Project NExT Fellow (Mathematical Association of America), June 2016–August 2017
- Binghamton University Clark Fellowship, Fall 2007–Spring 2012
- Cornell University, Summer Math Institute Participant, Summer 2007
- MAA Student Speaker Award for *Spherical and Hyperbolic San Gaku Problems*, Summer 2006
- Grand Valley State University, REU Participant, *Spherical and Hyperbolic San Gaku Problems*, Summer 2006

SERVICE

Mathematical Association of America (MAA)

- *Reviewer for the MAA College Mathematics Journal*, 2018–Present. Reviewed 2 papers for the journal.
- *Project NExT consultant and mentor*, Summer 2017–Spring 2018
- *Jointly organized, attended, and moderated a conference panel session “Community Building in the Math Major”*, MAA Mathfest, July 2017. The session boasted 29 attendees.

Alfred University

- Sang with Chamber Choir members at the 2023 AU Alumni Reunion Concert, summer 2023
- *Middle States Working Group on Standard 7*, fall 2022–spring 2023. Met biweekly to collect information and evidence surrounding questions on academic and institutional leadership. Cowrote a report with colleague D. Wallace regarding these questions and portions of the Middle States Report.
- *CLAS Faculty Council Chair*, fall 2021–present. Scheduled and ran meetings. Wrote and maintained agendas and minutes for each meeting. Led work regarding amending the CLAS By-Laws, considering AU Bookstore First Day Complete program with B&N, addressing a complain/concern submitted anonymously by an education faculty member. Interviewed the chair of education to address the faculty members concern and need for support in education. Communicated with chairs of all the committees regarding reducing committee sizes to ameliorate faculty service burdens. Communicated with the Dean of CLAS independently regarding committee concerns and feedback.
- *Library P&T Committee*, fall 2021–present. Read annual reports and supporting documents of 5 librarians and wrote letters regarding reappointment and promotion.
- *Tenured Faculty Observer*, fall 2021–present. Observed 2–3 faculty members each semester, each for 3 class sessions. Wrote reports about each observation and met privately with each faculty member regarding their teaching progress.
- *Hiring Committee for tenure-track information literacy librarian*, Spring 2020
- *Hiring Committee for 1 tenure-track math faculty position*, Spring 2019
- *1st–5th annual Alfred University Integration Bee creator, organizer, problems writer, solutions writer, and host*, Springs 2015–2019
- *Spearheaded and wrote the new “Online Proctoring Agreement” and “Guidelines for Exam Proctors” for online mathematics and computer science courses at Alfred University (joint with Joe Petrillo)*, Fall 2018
- *Learn S’More About Math Organizer*, Helped write and edit math problems for a raffle station at our mini math festival and assisted with setup and running of stations during the festival itself, Fall 2018.
- *Career Paths from Math at AU*, Researched alumni from AU mathematics, interviewed them, and prepared and delivered a presentation open to all students and faculty including information from from those interviews, the US Bureau of Labor Statistics and other information on mathematical careers and what to do with a bachelor’s in math, Fall 2018
- *Killing It Without Killing Yourself*, Delivered an open workshop for AU CLAS students during which we discussed research from two books about overcoming procrastination, forming good habits, stress relief, and goal-setting. Students completed guided exercises to apply the information to their own personal circumstances and worked in groups to support each other, Fall 2018
- *Academic Advisor*, Fall 2014–Present—Check in regularly to mentor students, assist them with academic concerns and adjustment to college life. In orientations 2016 and 2017 offered workshops “Killing It Without Killing Yourself” to my first-year advisees. The workshops also covered adjusting to college including study habits, engagement in the community, and positive self-talk. They have since been made open to all of Alfred University.
- *Nevins Competition Organizer*, Falls 2015–Present—Assisted with writing challenging high school math problems and solutions and organizing a competition on the Alfred University campus for hundreds of high school students that visited and competed for scholarships. Also helped find volunteers and proctor the exam.
- *Math and Computer Science Club Faculty Advisor*, Spring 2016–Present—Attend weekly meetings, assist with organizing events, advertising events, and inviting speakers. Act as a liaison between the Mathematics and Computer Science Division and the Mathematics and Computer Science Club.
- *Faculty Council Committee Member*, Fall 2018–Present—Attend monthly meetings to discuss and make motions on issues concerning communication and actions between faculty and administration.
- *Advising Committee Member*, Fall 2017–Present—Attend monthly meetings to discussion and organize motions regarding advising students.
- *Hiring Committee Member for 2 tenure-track math faculty positions*, Fall 2017–Spring 2018
- *Curriculum and Teaching Committee Member*, Fall 2016–Spring 2018
- *Faculty Reading Group on Race, Participant*, Spring 2016
- *Math and CS station leader in the academic fair at spring open house for accepted students*, 2015–Present
- *Participant in admissions lunches for students considering Alfred University*, 2015–2017
- *Quantitative Reasoning Assessment Subcommittee Member*, 2017
- *Scholastic Standards Committee Member*, Summer 2015

Binghamton University

- *Clark Fellow Mentor Program*, Fall 2011-Spring 2012
- *Invited Graduate Student*, Nebraska Conference for Undergraduate Women in Mathematics, Spring 2011—Served as a panelist for “Choosing a Graduate School” and “Summer Opportunities”, in addition to attending undergraduate research talks.
- *Co-organizer of the weekly Thompson Group seminar*, Fall 2009-Spring 2012
- *Preparing Future Faculty Program*, Spring 2009—Mentored an undergraduate student reading 2 algebra papers in preparation for a talk in the Undergraduate Algebra Seminar