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CURRICULUM VITAE

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POSITIONS

Academic

James Madison University, Harrisonburg, VA Department of Mathematics & Statistics – Full Professor 2011-present – Associate Professor 2006-11 – Assistant Professor 2000-06	2000–present
Duke University, Durham, NC – Ph.D. in Mathematics 2000 – M.A. in Mathematics 1997	2000
University of Chicago, Chicago, IL – B.S. in Mathematics 1994	1994

Fellowships

Brown University, Providence, RI Institute for Computational and Experimental Research in Mathematics Simons Research Professorship, Illustrating Mathematics	Fall 2019
National Museum of Mathematics, New York City, NY MoMath Mathematician-in-Residence	Fall 2014

Industry

Shapeways, Inc., New York City, NY <i>Education and Content Consultant</i> Shapeways Magazine and New York Public Library Programming.	2017-18
Ultimaker North America, New York City, NY <i>Strategic Research Consultant for Education</i> Vision, needs, and requirements within maker education markets.	2016-17
Digital Harbor Foundation, Baltimore, MD <i>Content Strategist</i> Site organization, content guidelines, and resource blueprints.	2015-16
MakerBot Industries, Brooklyn, NY <i>Senior Product Manager for Education</i> Led the core Digital Products educational initiatives.	2015

SCHOLARSHIP

Research Publications

Mathematical research interests include singular algebraic geometry, knot theory, algebraic and combinatorial analysis of games, puzzles, patterns, 3D design, and art. Recent scholarship centers around computational design and interdisciplinary collaboration with fiber arts.

AutoScarf: The scarf that designs itself

Proceedings of Bridges Galway: Mathematics and the Arts, pp. 661-668, 2026.

Predicting Planned Pooling Patterns

With Cameron Barb, Ekaterina Birch, Jared Gonzalez, Claire Jones, Josh Makela, Abigail McClennan, and Lauren Wiermanski.

Proceedings of Bridges Richmond: Mathematics and the Arts, pp. 361-364, 2024.

Knit Knots: Large-scale soft conformations of minimum-ropelength knots and links

Proceedings of Bridges Halifax: Mathematics and the Arts, pp. 369-372, 2023.

Ideal spatial graph configurations

With Stephen Lucas.

Journal of Mathematics and the Arts, special issue on Mathematical Illustration, Vol. 16, Issue 1-2, pp. 121-132, 2022.

Modeling dynamical systems for 3D printing

With Stephen Lucas and Evelyn Sander (George Mason University).

– *Notices of the American Mathematical Society*, cover article, Vol. 67, No. 11, pp. 1692-1705, 2020.

– *The Best Writing in Mathematics 2021*, No. 19, pp. 82-106, Princeton University Press, 2022.

Categorizing Celtic knot designs

With Roger Antonsen (University of Oslo).

Proceedings of Bridges Aalto: Mathematics and the Arts, pp. 87-94, 2021.

Wallpaper patterns for lattice designs

With Carolyn Yackel (Mercer University).

Proceedings of Bridges Aalto: Mathematics and the Arts, pp. 223-230, 2020.

Optimizing Morton's tritangentless knots for rolling

With Stephen Lucas and student Abigail Eget.

Proceedings of Bridges Aalto: Mathematics and the Arts, pp. 367-370, 2020.

Opportunity costs in the game of best choice

With Brant Jones and students Madeline Crews, Kaitlyn Myers, Michael Urbanski, and Breeann Wilson.

Electronic Journal of Combinatorics, Vol. 26, Issue #1, Paper No. 1.45, 2019.

Sequences of spiral knot determinants

With students Charlie Kim and Ryan Stees.

Journal of Integer Sequences, Vol. 19, Issue #1, Article 16.1.4, 2016.

Nest graphs and minimal complete symmetry groups for magic Sudoku variants

With Elizabeth Arnold, Rebecca Field, John Lorch (Ball State University), and Stephen Lucas.

Rocky Mountain J. Mathematics, Vol. 45, No. 3, pp. 887-901, 2015.

Heartless Poker

With Dominic Lanphier (Western Kentucky University).

MOVES: Research in Recreational Math, Princeton University Press, Volume 1, 2015.

Solitaire mancala games and the Chinese Remainder Theorem

With Brant Jones and Anthony Tongen.

American Mathematical Monthly, Vol. 120, No. 8, pp. 706-724, 2013.

Mancala matrices

With Anthony Tongen and students Ben Warren, Fanya Wyrick-Flax, and Iris Yoon.

College Math Journal, Vol. 44, No. 4, pp. 273-283, 2013.

Minimal complete Shidoku symmetry groups

With Elizabeth Arnold, Rebecca Field, and Stephen Lucas.

Journal of Combinatorial Mathematics and Combinatorial Computing, Vol. 87, 2013.

Spiral Knots

With Len Van Wyk and students Nathan Brothers, Sean Evans, Debbie Witczak, and Carolyn Yarnall.

Missouri Journal of Mathematical Sciences, Vol. 22, Issue #1, pp. 10-18, 2010.

Gröbner basis representations of Sudoku

With Elizabeth Arnold and Stephen Lucas.

College Math Journal, Vol. 41, No. 2, pp. 101-112, 2010.

p-Coloring classes of torus knots

With students Anna-Lisa Breiland and Layla Oesper.

Missouri Journal of Mathematical Sciences, Vol. 21, Issue #2, pp. 120-126, 2009.

An exact sequence of weighted Nash complexes

Illinois Journal of Mathematics, Vol. 52, No. 2, pp. 591-610, 2008.

Counting m-coloring classes of knots and links

With students Kathryn Brownell and Kaitlyn O'Neil.

Pi Mu Epsilon Journal, Vol. 12, No. 5, pp. 265-278, 2006.

The Nash sheaf of a complete resolution

Manuscripta Mathematica, Vol. 106, No. 2, pp. 249-270, 2001.

Monomial generators for the Nash sheaf of a complete resolution

Ph.D. thesis, Duke University, advised by William L. Pardon, 2000.

Mentored Projects

Supervised undergraduate students in mathematical research and in interdisciplinary design research in mathematical visualization, leading to multiple student presentations and journal publications:

- AI Apps for Cellular Automata Conjectures (with Elizabeth Arnold), Haynes Scholars, 2026-27.
- Coding Cellular Automata Explorers, JEM Lab, 2024-26.
- Tetrahexastix Build (with Roger Thelwell), JEM Lab, 2024-26.
- Forbidden Graphs and Square-X Moves (with Stephen Lucas), JEM Lab, 2024-25.
- World's Tiniest (Nano)-Violin (with John Bowers), JEM Lab, 2024-25.
- Mathematically Optimized Crochet Color Pooling, JEM Lab, 2023-24.
- Stick Knot Conformations (with Elizabeth Arnold), Haynes Scholars, 2021-22.
- Optimized Tritangentless Trefoils (with Stephen Lucas), JEM Lab, 2018-20.
- 3D Graph Conformations (with Stephen Lucas), JEM Lab, 2018-20.
- Best Choice Games (with Brant Jones), JMU NSF Mathematics REU, 2018.
- Rocket Exhaust Trench Modeling (with Caroline Lubert), JEM Lab, 2018.
- 3D Graphs and Discrete Geometry (with John Bowers), Ars Geometrica Seminar, 2017-18.
- Homotopy and 3D Printing: Praxinoscope Knot Isotopy, Introduction to Research, 2017-18.
- Strongly Regular Spatial Graphs (with John Bowers), Ars Geometrica Seminar, 2017.
- Pushing 3D Printing Boundaries (with John Bowers), Ars Geometrica Seminar, 2017.
- Spiral Knot Determinants, JMU Honors Thesis, 2014-15.
- Modeling Knot Conformations, Introduction to Research, 2014.
- Multi-material 3D Printing, STAR Student Program, 2013-14.
- Singular Knots (with Len Van Wyk), JMU NSF Mathematics REU, 2013.
- 3D Printing Laboratory, JMU Internal Math/Stat REU, 2013.
- Knot Theory, Advanced Undergraduate Research, 2012-13.
- Knot Determinant Patterns, JMU Internal Math/Stat REU, 2012.
- Mancala/Tchoukaillon (with Anthony Tongen), JMU NSF Mathematics REU, 2011.
- Mancala/Tchoukaillon (with Anthony Tongen), JMU M³ NREUP, 2010.
- Spiral Knots (with Len Van Wyk), JMU NSF Mathematics REU, 2007.
- Multiple Gerechte Designs, JMU Honors Thesis, 2006-07.
- Torus Knot Colorings, JMU NSF Mathematics REU, 2004.
- Pretzel Knot Colorings, JMU NSF Mathematics REU, 2003.

Education Articles

The Haynes Scholars Program's impact on STEM students' research identities

With Elizabeth Arnold and Mindy Capaldi.

Scholarship and Practice of Undergraduate Research, submitted 2026.

College-level math exploration in 3D at JMU 3SPACE

Ultimaker Education, April 2018.

Creating a community of 3D educators at Construct3D

Ultimaker Education, May 2017.

3D printed fractals at JMU 3SPACE

Ultimaker Education, May 2017.

JMU 3SPACE: Building a 3D printing classroom

Ultimaker Education, January 2017.

Thingiverse Jumpstart: Tinkercad, OpenSCAD, Sculpttris

MakerBot Industries, Thingiverse Digital Products, August 2015.

MakerBot in the Classroom: A Resource for Educators

MakerBot Industries, published resource for K12 and higher education, May 2015.

Expository Articles

Illustrating Mathematics

Contributed chapter in the book edited by Diana Davis, American Mathematical Society, 2020.

Hitting the Wall

- Chapter in the book *Living Proof: Stories of Resilience Along the Mathematical Journey*, American Mathematical Society, 2019.
- Republished as a feature in MAA *Math Horizons*, Volume 27, Issue 3, 2020.
- Again republished in the *Notices of the American Mathematical Society*, August 2020.

Regular column at *Shapeways Magazine*

Over 50 articles on technical 3D design, Shapeways, Inc., 2017-19.

Parametric OpenSCAD Designs for Exploring Sierpinski-Like Carpet Fractals

Construct3D Conference Proceedings, October 2018.

Book Reviews: Visualizing Mathematics with 3D Printing, and Pasta By Design

The American Mathematical Monthly, Volume 125, Issue 4, March 2018.

The Mathematics behind xkcd: A conversation with Randall Munroe

Math Horizons, Mathematical Association of America, cover article, September 2012.

Taking Sudoku Seriously

Math Horizons, Mathematical Association of America, September 2007.

Puzzling Over Sudoku

Madison Magazine, James Madison University, Fall 2007.

Simplicity is not simple: Tessellations and modular architecture

With Eugenie Hunsicker (Lawrence University).

Math Horizons, Mathematical Association of America, winner of the MAA Trevor Evans Award, cover article, September 2002.

ART**Exhibited Works**

Granny Life

- Bridges Conference Art Exhibition, Galway, Ireland, August 2026.
- *Création, entre arts et mathématiques*, Maison Poincaré, Institut Henri Poincaré, Paris, France, April-July 2026.

Forbidden Graphs

With Stephen Lucas and student Claire Jones.

- Illustrating Mathematics Workshop, ICERM, Brown University, Providence, RI, August 2025.

Knit Knots

- Bridges Conference Art Exhibition, Halifax, Nova Scotia, July 2023.

Catalan Wireframe: Pentagonal Hexecontahedron

With student Carolyn Angelillo, contributed.

- Polyplanes installation at the Joint Math Meetings, San Francisco, California, January 2024.
- Polyplanes installation at MathFest, Tampa, Florida, August 2023.
- Polyplanes installation at The College of New Jersey, July 2023.
- Polyplanes installation at Rutgers University, Studio Infinity, April 2023.

Scutoid Table

With Patrick Cain Designs.

- Light-weight recycled concrete pair of scutoid tables using mathgrl code and blueprints, West Elm collaboration with Patrick Cain Designs studio, Los Angeles, 2022-23.

Perko Morph

- Photograph and description of this 3D design was featured as the March page of the widely-circulated 2021 Mathematical Imagery Calendar, American Mathematical Society, 2021.

Arneodo Attractor

With Stephen Lucas and Evelyn Sander (George Mason University).

- Cover image of the 3D-printed model, photographed by Edmund Harriss, *Notices of the American Mathematical Society*, Vol. 67, No. 11, December 2020.

Rolling Knots

With Stephen Lucas and student Abigail Eget.

- Bridges Aalto Art Exhibition (remotely), August 2020.

Coding for generative design

- 2020 Distinguished Visitor, working with Robert Bosch, Oberlin College, February 2020.

Steel Knot Conformations and Chaotic Attractors

With Stephen Lucas.

- Construct3D Art Exhibition, Flatland Gallery, Houston, TX, February 2020.
- *Women Making with Math* exhibition, Dana Hall Art Gallery, Wellesley, MA, December 2019.

Perko Morph, Spiky Perko Knot, Steel Knots, and Chaotic Attractors

With Stephen Lucas.

- ICERM Illustrating Mathematics Exhibition, September-December 2019.
- Featured in the *Illustrating Mathematics* art exhibition book, ICERM, 2019.

Puente Encriptado

With artists Francesca Rodriguez and Ashley Zelinskie.

- International Contemporary Art Festival at Art.MO, Monumental Callao, FUGAZ Residency, Lima, Peru, April 2018.

Type 9

With Alicia Tam Wei (Parsons) as AABSTRACT Studio.

- International Design Event, Wanted Design Manhattan, New York, NY, May 2016.
- Astor Place Design Pavilion, American Design Club Manhattan, New York, NY, May 2016.

Pentagonal Hexecontahedron, Low-Voxel Stanford Bunny, Algorithmic Snowflakes, Pentagonal Tessellation Type 15, Minimum Rope Conformation Knot

- Cedarhurst Center for the Arts, part of the Tom Burtonwood exhibition *Transmissions*, Mount Vernon, IL, February-May 2016.

Infinity Knit Pi Scarf

- Joint Mathematics Meetings, Washington, DC, *Fibre Art and Mathematics*, January 2009.

Funded Residencies

Oberlin College

With Robert Bosch.

Residency and public lecture, March 2020.

ICERM Mathematical Artist-in-Residence

WaterFire artist, and panelist for Math + Art: Illustrating Mathematics, Providence, RI, Fall 2019.

FUGAZ Residency

With artists Francesca Rodriguez and Ashley Zelinskie.

International Contemporary Art Festival at Art.MO, Monumental Callao, Lima, Peru, April 2018.

Denison University Artist-in-Residence

With Lew Ludwig and Chris Faur.

3D Printing: From Abstract to Concrete, April 2016.

BOOKS

Textbooks

Taalman/Kohn Calculus

With co-author Peter Kohn.

A 3-semester Calculus textbook, Freeman/Macmillan, 2013. About 14,000 copies sold as of 2019, with adoption or previous use at the following schools:

- | | | |
|-----------------------------|-------------------------------|-------------------------------|
| – Alabama A&M University | – Graceland College | – Southwestern University |
| – Allan Hancock College | – Haywood CC | – SUNY College at Potsdam |
| – Boise State University | – Isothermal CC | – Texas Bexar |
| – Catawba Valley CC | – James Madison University | – Texas Harris |
| – City College of NY, Touro | – Massachusetts High | – Trinity College |
| – Clayton State University | Schools | – UC Santa Barbara |
| – Colby College | – McDaniel College | – UNC Greensboro |
| – College of New Rochelle | – Mercer University | – U. Birmingham, UK |
| – Columbia Basin College | – New Jersey High Schools | – University of Toronto |
| – Davidson County CC | – New Mexico Mining & Tech | – U. Wisconsin, Stevens Point |
| – DeVry University | – New York University | – Wheaton College |
| – Florida High Schools | – N. Central Michigan College | – York County CC |
| – Framingham State College | – Nova Scotia Agricultural | |
| – Georgia College | – Skagit Valley College | |

Taalman Calculus I with Integrated Precalculus

A two-semester textbook that combines first semester STEM Calculus with precalculus and algebra. First edition published by Houghton Mifflin, 2004; winner of a Texty Award, 2006; new edition published by Freeman/Macmillan, 2013. About 5,000 copies sold as of 2019, with adoption or previous use at the following schools:

- | | | |
|----------------------------|-----------------------------|-----------------------------|
| – Boston College | – Drexel University | – Kansas High Schools |
| – Cal. State Long Beach | – Gustavus Adolphus College | – Knox College |
| – Centre College | – Harvard University | – Loyola University Chicago |
| – Colby College | – Hope College | – Meredith College |
| – Connecticut High Schools | – James Madison University | – Miami Dade CC |

- Monash University
- New Jersey High Schools
- New Mexico High Schools
- New Mexico Mining & Tech
- New York University
- North Central College
- Northwestern University
- Oxford College of Emory U.
- Trinity College Hartford
- Tulane University
- St. Catherine University
- SUNY College at Potsdam
- University of the Redlands
- University of St. Thomas
- Univ. Wisconsin-Stout
- Urbana University
- Westfield State University
- Wheeling Jesuit College

Puzzle Books

Taking Sudoku Seriously: The Mathematics Behind the World's Most Popular Pencil Puzzle

With co-author Jason Rosenhouse.

Hardcover sales to date of over 5,000 copies, reviewed in the *Wall Street Journal* and *The Guardian*, and winner of a PROSE Award:

- Published by Oxford University Press, 2011.
- Chinese translation by Machinery Industry Press, 2014.
- Japanese translation by Seidosha Press, 2014.

Brainfreeze Puzzles books

With co-author Philip Riley.

Eight nationally published books with combined total sales to date of over 60,000 copies, published by Sterling Publishing and Puzzlewright Press:

- *Rainbow Sudoku*, popular and colorful Sudoku variants, 2016.
- *Ninecraft*, 9×9 puzzles with 8-bit themes and missing nines, 2016.
- *Double Trouble Sudoku*, 8×8 and 10×10 Sudoku variants with polyomino regions, 2014.
- *Fifty Squares of Grey*, 10×10 Sudoku variants with 50 shaded cells, 2014.
- *Beyond Sudoku*, popular variations of Sudoku puzzles, 2012.
- *No-Frills Sudoku*, symmetric minimal-clue Sudoku puzzles, 2011.
- *Naked Sudoku*, arithmetic Sudoku variants, 2009.
- *Color Sudoku*, popular and colorful Sudoku variants, 2007.

MEDIA

Blog

Hacktastic

Hundreds of blog posts and tutorials on math, failure, and 3D design, with over 650,000 visitors and two million pageviews to date, mathgrrl.com/hacktastic, 2013-present.

MakerHome

A year of daily posts on 3D printing and design, from first prints to a mature design practice; over 870,000 pageviews to date, mathgrrl.com/makerhome, 2013-14.

Designs

mathgrrl Designs on Shapeways

- Over 150 original 3D-printable designs optimized for various high-end materials, including nylon, stainless steel, and cast metal, 2013-present.

mathgrl Designs on Thingiverse

- Nearly 250 original 3D-printable designs optimized for desktop machines, shared free for anyone to download and print; over 13K followers, 23K views/month, 2013-present.

Videos

Stand-up Maths videos

With Matt Parker; digital modeling, fabrication, and appearances in his YouTube videos, 2016-present.

- “These pixels count themselves”, August 2025.
- “The search for the biggest shape in the universe”, August 2024.
- “The Neat Alignment of the World’s Biggest Antiprism”, October 2023.
- “The Scutoid: Did scientists discover a new shape?”, August 2018.
- “The Fractal Menger Sponge and Pi”, April 2016.

Puzzles

Custom made Sudoku variant puzzles

With Philip Riley as Brainfreeze Puzzles.

Custom and solicited puzzles for books, magazines, and other publications; a full list of publication venues would be too long for this document but highlights include the following, 2006-present:

- *Games for Your Mind*, book by Jason Rosenhouse, Princeton University Press.
- *The Magic of Math: Solving for X and Figuring Out Why*, book by Arthur Benjamin, Basic Books.
- *Mathematics of Games and Puzzles: From Cards to Sudoku*, by Art Benjamin, Great Courses.
- *Mathematics for Human Flourishing*, book by Francis Su, Yale University Press.
- *American Mathematical Society Page-a-Day Calendar*, Evelyn Lamb, AMS Press.
- Mathematical Association of America, magazine and newsletter features, promotions, contests, websites, back-page features, and printed conference programs, for *FOCUS*, *Math Horizons*, the MAA Carriage House, MathFest, and the Joint Mathematics Meetings.
- *The College Mathematics Journal*, “Tetris Sudoku”, Vol. 44, No. 4, p. 292, September 2013.
- Cambridge University, Millennium Mathematics Project, *+plus Magazine*.
- *For All Practical Purposes*, a COMAP textbook published by W.H. Freeman.
- *Mythematics*, book by Michael Huber, Princeton University Press.
- Text and Academic Authors Association, website and Conference Program.
- *The BIG Notebook*, MAA Business, Industry, and Government SIGMAA.
- *The Addict’s Guide to Sudoku*, book by Fiorella Grossi, FairWinds Press.
- *Suki and the Beasts, a Sudoku Odyssey*, book by Galewski, Chapman, and Schuman.

Sudoku syndication puzzles

With Philip Riley as Brainfreeze Puzzles.

Provided weekly Sudoku syndication for the following college newspapers, 2007-11:

- | | |
|---|--|
| – <i>The Breeze</i> , James Madison Univ. | – <i>The Bucknellian</i> , Bucknell Univ. |
| – <i>The Collegian</i> , Kansas State Univ. | – <i>The Utah Statesman</i> , Utah State Univ. |
| – <i>GW Hatchet</i> , George Washington U. | – <i>The Reveille</i> , Nebraska Wesleyan U. |
| – <i>The New Hampshire</i> , UNH | – <i>The Creightonian</i> , Creighton Univ. |
| – <i>The Temple News</i> , Temple Univ. | – <i>The Davidsonian</i> , Davidson College |
| – <i>The Manitou Messenger</i> , St. Olaf College | – <i>The Voice</i> , Westfield State College |
| – <i>The Scarlet</i> , Clark University | – <i>The Globe</i> , Point Park University |
| – <i>The Oswegonian</i> , SUNY Oswego | – <i>The Lance</i> , Evangel University |

- *The Trinitonian*, Trinity University
- *The Review*, University of Delaware
- *The Oregon Daily Emerald*, U. Oregon
- *George-Anne Daily*, Georgia Southern
- *The Daily O'Collegian*, Oklahoma S.U.
- *The Lafayette*, Lafayette College
- *The Skyline*, Sul Ross State University
- *The Daily Pennsylvanian*, U. Penn
- *The Mesa Journal*, UT Permian Basin
- *The Lode*, Michigan Technological U.
- *The Crusader*, Holy Cross
- *The Bona Venture*, St. Bonaventure U.
- *The Maroon*, University of Chicago

PRESENTATIONS

Talks and Keynotes

Presentations of the same talk have been grouped together, although content evolves over time and changes to match audiences. Nearly all are invited talks and addresses.

Cellular Automata and Computational Crochet

- An Evening of Unnecessary Detail, Bell House Theatre, Brooklyn, August 2026.

Granny Life: Using Cellular Automata to Create Crochet Art

- Elon University, Voices of Discovery featured speaker, Elon, NC, April 2026.
- George Mason University, Fairfax, VA, December 2025.
- UVA AWM Seminar, Charlottesville, VA, November 2025.
- JMU Mathematics & Statistics colloquium, October 2025.
- Queens College, New York City, NY, October 2025.

Stealth Outreach: Granny Life and AutoScarf

- MAA MD/DC/VA Section Meeting, Frederick Community College, Frederick, MD, April 2026.

Hands-on Cellular Automata Code and Art

- Girls Code JMU, James Madison University, April 2026.

Demystifying the Expert

- Mystery guest, New and Improv'd improv comedy show, James Madison University, March 2026.

Following the Rules (When you like them)

- Maths Fest, Royal Institution, London, UK, February 2026.

Early UREs in Mathematics as Part of a First-Year STEM Residential Learning Community: Five Years of the Haynes Scholars ARLC at JMU

- With Elizabeth Arnold, Joint Mathematics Meetings, Washington, DC, January 2026.

In Memoriam: Roger Antonsen

- Emerging Complexity exhibition opening, SLMath Institute, Berkeley, California, April 2025.
- Peg Jumping, Celtic Knots, and Stitch Wizardry, Illustrating Mathematics Seminar, May 2024.

Interactive Patterns: Using math and code to optimize crafts

- Maggie Lynn Walker Governor's School, March 2025.

Knit Knots and Computational Crochet

- An Evening of Unnecessary Detail, Bell House Theatre, Brooklyn, August 2024.
- An Evening of Unnecessary Detail, Caveat Theatre, Manhattan, July 2023.

Crochet & Code: Predicting Planned Pooling Patterns

- With students Ekaterina Birch, Jared Gonzalez, Claire Jones, and Lauren Wiermanski, Bridges Conference, VCU, Richmond, Virginia, July 2024.

Ideal Spatial Graphs

- Bridges Conference, invited JMA session, VCU, Richmond, Virginia, July 2024.

Mathematical Technocraft

- Illustrating Mathematics Seminar (remotely), September 2023.
- Bridges Conference closing plenary address, Halifax, Nova Scotia, July 2023.

Tritangentless trefoils, ideal graph configurations, and chaotic attractors

- United States Air Force Academy, Colorado, March 2024.
- Mathematical Association of America Distinguished Lecture, April 2023.
- North Carolina State Banquet Dinner for the Southeast Section of the MAA, October 2022.
- With Stephen Lucas, JMU Mathematics & Statistics colloquium, August 2022.
- With Stephen Lucas, Heidelberg Experimental Geometry Lab, Germany (remotely), June 2022.

The JMU Haynes Scholars Program: A Model for Fostering a Sense of Belonging through Discipline-Based Residential Learning Communities

- With Elizabeth Arnold, JMU Office of Planned Giving, March 2024.
- With Elizabeth Arnold, JMU Diversity Conference, March 2023.

Categorizing Celtic Knot Designs

- With Roger Antonsen, Bridges Aalto 2021, Finland (remotely), August 2021.

3D Printed Hinged Dissections and Foldable Polyhedra

- FUNDAPROMAT speaker series, Panama (remotely), May 2021.
- Gathering 4 Gardner Celebration of Mind, invited speaker (remotely), April 2021.

Coding and technical design software for mathematical 3D printing

- Geometry Labs United, invited seminar speaker (remotely), October 2020.

Design x Code: Generative design for 3D printing

- Institute for Mathematics and its Applications (IMA), Public Lecture (remotely), Feb 2021.
- Willamette University, Dept. of Mathematics Colloquium (remotely), April 2020.
- Oberlin College, “Fuzzy Vance” Distinguished Visitor Public Lecture, March 2020.
- Brown University, Undergraduate Mathematics Seminar, December 2019.
- City University of New York, Graduate Center, Data Science Seminar, November 2019.
- 3DPrint.com, Advanced Design for 3D Printing, course livestream, March 2019.
- Sol Plaatje University, Kimberly, South Africa, Embassy Program, May 2018.
- University of Pretoria, SciEnza Lecture, South Africa, Embassy Program, May 2018.
- University of Witwatersrand, Johannesburg, South Africa, Embassy Program, May 2018.
- James Madison University, Computer Science Research Seminar, March 2018.

Symmetry Generator: Wallpaper Patterns for Lattice Designs

- With Carolyn Yackel, Bridges Aalto Conference (remotely), August 2020.

Level Up: Growing a campus-wide curriculum in a dedicated 3D printing classroom

- With Jamie Calcagno-Roach, Construct3D Conference in Houston, TX, February 2020.

Math x Art: Finding internal and external support for interdisciplinary work

- James Madison University, CFI Faculty Semester Sketch, January 2020.

Managing unreasonable meshes and infinitely thin surfaces

- ICERM, Brown University, Illustrating Mathematics Technical Seminar, October 2019.

Parametric design with OpenSCAD

- With Sylviana Amethyst, ICERM, Illustrating Mathematics Technical Seminar, October 2019.
- Trinity Upper School, NYC, Open Lunch-and-Learn Session, April 2019.
- With Marius Kintel, Construct3D Conference, Duke University, Durham, NC, May 2017.
- ICERM Illustrating Mathematics Workshop, Providence, RI, June 2016.

3D Printed Mathematics: Student design and creation of mathematical objects

- MAA MD/DC/VA Section Meeting at Hood College, MD, April 2019.
- Joint Mathematics Meetings in Baltimore, MD, Contributed Paper Session, January 2019.
- Construct3D Conference at Georgia Tech, Atlanta, GA, October 2018.

Math by Design: 3D printing for the working mathematician

- Trinity Upper School, NYC, James H. Fogelson Memorial Symposium, April 2019.
- James Madison University, Mathematics and Statistics Colloquium, September 2018.
- College Board AP Calculus Reading in Kansas City, MO, Professional Night Speaker, June 2018.
- SIAM Conference on Industrial and Applied Geometry, Pittsburgh, PA, July 2017.
- Joint Mathematics Meetings, MAA Invited Address, Atlanta, GA, January 2017.
- University of Missouri, Kansas City Mathematics Technology Expo Keynote, October 2016.
- CEPT University, Maker Fest Main Auditorium Talk, Ahmedabad, India, January 2016.

Mastery Based Grading: Infinity War

- MAA MD/DC/VA Section Meeting, University of Mary Washington, November 2018.

FAIL: A mathematician's apology

- MAA MathFest in Denver, CO, Invited Address, Chan Staneck Student Lecture, August 2018.
- Northwestern University, Invited address at Undergraduate Awards Ceremony, May 2018.
- MAA MD/DC/VA Section Meeting in Frostburg, MD, Invited Banquet Address, April 2017.

Welcome to 3D Printing: A tour of design, math, and failure

- Essex High School Honors Program, Essex Junction, VT (remotely), June 2020.
- U.S. State Department Speaker Program, Afghanistan (remotely in Pashto), August 2018.
- U.S. State Department Speaker Program, Afghanistan (remotely in Dari), August 2018.
- Math & Science Leadership Academy in Kimberly, South Africa, Embassy Program, May 2018.
- University of Cape Town, Graduate School of Business, Embassy Program, May 2018.
- Western Cape Department of Education, South Africa, Embassy Program, May 2018.
- Council for Scientific and Ind. Research, Pretoria, South Africa, Embassy Program, May 2018.
- Rosa Parks Library & Innovation Studio in Soweto, South Africa, Embassy Program, May 2018.
- Walt Whitman High School, Nifty Fifty USA Science & Engineering Speaker, May 2015.
- Friends Seminary High School, MoMath Speaker, New York City, NY, November 2014.
- Sacred Heart Middle and High School, MoMath Speaker, New York City, NY, November 2014.

Printing Perfect Pentagons

- Gathering for Gardner Conference G4G13, Atlanta, GA, April 2018.

Math as Design Engine: Leveraging mathematics to create 3D printed art

- Joint Mathematics Meetings in San Diego, MAA Arts and Mathematics Session, January 2018.
- MAA MD/DC/VA Section Meeting, Christopher Newport University, November 2017.

From Print to Product: Design Resources and Shop Strategies

- New York Public Libraries, Shapeways Design Exhibition, New York, NY, September 2017.

3D Printing with mathgrl

- Woodbridge Technology Innovation Lab, invited discussion, Manassas, VA, October 2016.

Abstraction Takes Shape

- Smithsonian Associates, Invited Seminar Series, Washington, DC, September 2016.

Designing 3D printed mathematical knots

- UnKnot Conference III at Denison University, Invited Address, Denison, OH, August 2016.
- AMS Section Meeting, Knot Theory Special Session, UNC Greensboro, November 2014.
- MakerBot Thingiverse Make-a-Thon, Brooklyn, NY, October 2014.

Bringing Abstract Mathematics into Reality: 3D printed Catalan wireframes

- UNC Greensboro Mathematics and Statistics Conference, November 2015.
- New York University Courant, Martin Gardner Celebration of Mind Keynote, October 2015.
- MakerBot Industries, Tech Exchange, Brooklyn, NY, August 2015.
- MAA MathFest in Washington, DC, MAA Themed Paper Session, August 2015.
- Two Sigma Investments, Invited Speaker Series, New York City, NY, June 2015.

Engaged Learning: Make stuff, do it yourself, learn to fail

- JMU Institute for Visual Studies, Madison Catalyst Series, November 2015.

Leveling Up: 3D Printing and Higher Education

- MakerBot Industries, Webinar Series, New York City, NY, August 2015.

3D Printed Research: Combining math and art to introduce students to knot theory

- Joint Mathematics Meetings in San Antonio, MAA Math and the Arts Session, January 2015.

Kick-starting undergraduate research

- Joint Mathematics Meetings in San Antonio, MAA Undergrad Research Session, January 2015.

Making Mathematics Real: Knot theory, experimental math, and 3D printing

- James Madison University, SUMS Conference Keynote, September 2014.
- NYU Courant Institute GSTEM Program, New York, August 2014.
- New Jersey City University, Opening the Gate Summer Institute, July 2014.
- National Museum of Mathematics, Math Encounters Lecture, July 2014.
- USA Mathematics Olympiad, Award Presentations, Washington, DC, June 2014.
- Virginia Council of Teachers of Mathematics, Invited Conference Address, March 2014.
- MAA National Headquarters, Carriage House Distinguished Lecture Series, February 2014.
- James Madison University, CFI January Symposium, January 2014.
- UNC, Greensboro, Helen Barton Computational Lecture, November 2013.
- James Madison University, Teaching and Learning with Technology Conference, October 2013.

Menger, Menger, Menger

- Gathering for Gardner Conference G4G11, Atlanta, Georgia, March 2014.

JMU 3SPACE: 3D printing in the classroom

- MAA MD/DC/VA Section Meeting, Longwood College, Longwood, VA, October 2013.

Spiral knots, singular knots, and exploratory mathematics

- MAA MathFest in Hartford, Open & Accessible Problems in Knot Theory, August 2013.
- James Madison University, Institute for Visual Studies Lecture Series, March 2013.

Patterns, Proofs, and Purity: Or how I learned to stop worrying and love computers

- University of Tennessee, UT Undergraduate Math Conference, April 2013.
- Maggie Walker Governor's School, Mu Alpha Theta Induction, February 2013.

- Longwood College, Mathematical Colloquium Series, January 2013.

16 Is Not Enough: The minimum clue conjecture for Sudoku

- Gathering for Gardner Conference G4G10, Atlanta, Georgia, March 2012.

Sudoku: Questions, variations, and research

- Mount St. Mary's University, Pi Mu Epsilon Induction Ceremony, March 2012.
- Moravian College, Student Mathematics Conference, February 2012.
- University of Mary Washington, Invited Speaker Series, November 2010.
- Notre Dame, Lectures for Undergraduates Series, September 2010.
- MAA Allegheny Section Meeting, University of Pittsburgh at Johnstown, April 2010.
- JSR Community College, GRCTM High School Math Conference, March 2010.
- Western New England College, NE MAA Section Meeting, November 2009.
- MAA Illinois Section Meeting, Bradley University, Peoria, IL, March 2009.
- University of Chicago, Association for Women in Mathematics Lecture, March 2009.
- Columbia College, Invited Lecture Series, Chicago, IL, March 2009.
- MAA EPaDel Section Meeting, Gettysburg College, PA, March 2009.
- Brigham Young University, CURM/MAA Conference, Provo, UT, March 2009.
- V2CTM Teachers Conference, Rockingham County, VA, November 2008.
- Roanoke College, MAA Conversation Series, VA November 2008.
- AMTNYS Summer Institute for Math Teachers, Syracuse, NY, August 2008.
- MAA MathFest in Madison, WI, Invited Lecture for Students, August 2008.
- University of Virginia, Public Lecture Series, Charlottesville, VA, April 2008.
- US Naval Academy, Service Academy Student Math Conference, April 2008.
- St. Mary's College of Maryland, Natural Science & Math Colloquium, February 2008.
- Maggie Walker Governor's School, Mu Alpha Theta Series, Richmond, VA, December 2007.
- Maggie Walker Governor's School, Student Research Group, Richmond, VA, December 2007.
- Gettysburg College, Undergraduate Colloquium Series, Gettysburg, PA, November 2007.
- Eastern Mennonite University, Student Research Group, September 2007.
- James Madison University, Mathematics and Statistics Colloquium, September 2007.
- Madison Area Technical College, Sudoku Master Competition, Madison, WI, April 2007.
- MAA Carriage House Opening Ceremonies, Washington, DC, April 2007.
- American University, Fool's Feast Celebration, Washington, DC, March 2007.
- Sam Houston State University, Piney Woods Lecture Series, Huntsville, TX, March 2007.
- Longwood University, Mathematics Colloquium, Farmville, VA, March 2007.
- Harvey Mudd College, Invited Lecture Series, Claremont, CA, January 2007.
- University of Maryland, Graduate Minicourse Series, VA, November 2006.
- Washington and Lee University, Colloquium, Lexington, VA, November 2006.
- MAA MathFest in Knoxville, TN, Gems of Recreational Mathematics, August 2006.
- Wake Forest University, Mathematics Colloquium Series, April 2006.
- MAA MD/DC/VA Section Meeting, Loyola College, April 2006.
- MAA Kentucky Section Meeting, Project NExT, Centre College, March 2006.
- MAA MD/DC/VA Section Meeting, Project NExT, Montgomery College, November 2005.

Homework is Dead, Long Live Homework

- MAA MD/DC/VA Section Meeting, Christopher Newport University, November 2011.

Integrated Calculus: A combination course for STEM majors

- MAA Kentucky Section Meeting, Closing Keynote Address, March 2011.
- MAA MathFest in Knoxville, TN, Contributed Paper Session, August 2006.

- Joint Mathematics Meetings in Phoenix, AZ, Contributed Paper Session, January 2004.
- Joint Mathematics Meetings, San Diego, Contributed Paper Session, 2002.
- MAA MD/DC/VA Section Meeting, Project NExT Session, Virginia Military Institute, April 2001.

Teaching proofs at the undergraduate level

- James Madison University, Center for STEM Education and Outreach, November 2009.

Spiral Knots

- With Len Van Wyk, UnKnot Conference at Denison University, Invited Address, July 2009.
- Joint Mathematics Meetings in San Diego, Contributed Paper Session, January 2008.

Mathematical projects for science fairs and symposia

- With Carla Martin and Peter Kohn, V2CTM Teachers Conference, November 2007.

Problem Zero: Encouraging students to read math and make it their own

- MAA MD/DC/VA Section Meeting, University of Virginia, November 2005.
- MAA MathFest in Providence, RI, Concepts Through Writing Session, August 2004.

An exact sequence of weighted Nash complexes

- MAA MathFest in Albuquerque, NM, Contributed Paper Session, August 2005.

Brainwashing and Great Expectations: Persuasion, bribes, and humor in the classroom

- MAA MD/DC/VA Section Meeting, Project NExT, Montgomery College, November 2005.
- MAA MathFest in Albuquerque, NM, Alder Awards Sessions, August 2005.

How not to give a talk

- James Madison University, Research Experiences for Undergraduates Seminar, July 2005.

The Nash bundle and the Nash sheaf

- James Madison University, Mathematics Colloquium, October 2002.

Complete resolutions, Hsiang-Pati coordinates, and the Nash sheaf

- AMS Western Section Meeting, San Francisco State University, October 2000.

Poster Presentations

Exploring minerals at the nanoscale using 3D printing

With Jamie Calcagno-Roach and Chiara Elmi.
Construct3D Conference, February 2020.

Workshops

AutoScarf: The scarf that designs itself

- Workshop, Bridges Conference, Galway, Ireland, August 2026.

Zero to App in One Hour: A math coding workshop for non-coders

- Queens College, Mirzakhani Day Conference, New York City, NY, May 2026.
- Elon University, Voices of Discovery, Elon, NC, April 2026.
- Invited plenary workshop, Bridging Visualisation and Understanding in Geometry and Topology, Institut Henri Poincaré, Paris, February 2026.

Making Knots: Digital creation, physical fabrication, and online dissemination

- Invited plenary workshop, Unknot V Conference, Seattle University, July 2024.

Talking Math in Public: 3D Printing and Fabrication

- With Christian Lawson-Perfect, TMiP Conference, Newcastle University, UK, August 2023.

Hands-on 3D printing outreach workshops at JMU 3SPACE

- James Madison University, MakerGirl Workshop for University of Illinois, June 2019.
- James Madison University, College of Science and Mathematics STEM Day, June 2018.
- With Rebecca Field, James Madison University, Expanding Your Horizons, March 2017.
- James Madison University, First LEGO League Gyro Maker Workshop, December 2016.
- Raw Learning Education Group, JMU 3SPACE, Harrisonburg, VA, March 2014.
- James Madison University, First LEGO League State Championships, December 2013.
- Loudon County Mercer Middle School, JMU 3SPACE, Harrisonburg, VA, November 2013.

Introduction to 3D Design Software and 3D Printing

- Math & Science Leadership Academy in Kimberly, South Africa, Embassy Program, May 2018.
- Central Cape Town Library, American Corner, South Africa, Embassy Program, May 2018.
- Brooklyn Research, Lady Tech Guild Design Workshop, Brooklyn, NY, August 2017.
- With Jamie Calcagno-Roach, James Madison University, TLT Conference, October 2016.
- Tarrant County College, Professional Development Week Speaker, Hurst, TX, August 2016.
- Fat Cat Fab Lab, 3D Printing and Hacking Guest Lecture, New York City, NY, April 2016.
- Two Sigma Investments Hacker Lab, New York City, NY, June 2015.
- MAA MathFest in Washington, DC, Project NExT Invited Workshop, August 2015.
- MAA MD/DC/VA Section Meeting at JMU, Invited Faculty Workshop, April 2014.

3D Printing Beyond Plastic

- James Madison University, TLT Conference, October 2017.

Designing Large: Z-Unlimited

- Fat Cat Fab Lab, 3D Printing and Hacking Guest Lecture, New York City, NY, May 2016.

Designing with Code

- CEPT University, Maker Ring Workshop, Lady Tech Guild, Ahmedabad, India, January 2016.
- CEPT University, Thermaform Bracelets Workshop, LTG, Ahmedabad, India, January 2016.

Introduction to 3D Printing: Penny Traps and Math Gyros

- National Museum of Mathematics (MoMath), fall workshops, New York City, NY, Fall 2014.

Intermediate 3D Printing: Trigonometry bracelets with OpenSCAD

- National Museum of Mathematics (MoMath), fall workshops, New York City, NY, Fall 2014.

High Resolution 3D Printing: Trigonometry sculptures with OpenSCAD and FormLabs

- National Museum of Mathematics (MoMath), fall workshops, New York City, NY, Fall 2014.

MegaMenger Project

- Worldwide Distributed Fractal Build, Queen Mary University London (remotely), October 2014.
- National Museum of Mathematics, two-week build, New York City, NY, October 2014.

Functioning in Calculus: Supporting STEM calculus students with precalculus and algebra

- MAA MathFest in Madison, WI, Project NExT Invited Workshop, August 2012.
- MAA MathFest in Pittsburgh, PA, Project NExT Invited Workshop, August 2010.
- Houghton Mifflin Mathematics Faculty Workshop, Chicago, IL, June 2004.

Topology and the Euler characteristic

- James Madison University, Expanding Your Horizons Conference Workshop, April 2010.
- James Madison University, Expanding Your Horizons Conference Workshop, April 2009.
- James Madison University, Expanding Your Horizons Conference Workshop, April 2008.
- James Madison University, Conversations Between Mathematicians Project, January 2008.
- James Madison University, Conversations Between Mathematicians Project, January 2006.

Math $\Leftrightarrow$ Patterns

- James Madison University Institute for Visual Studies, Seminar Class, April 2009.
- James Madison University, Bridge Summer Camp, June 2010.
- James Madison University, Bridge Summer Camp, June 2009.
- James Madison University, Bridge Summer Camp, June 2008.

Modular origami polyhedra

- James Madison University, Content Teaching Academy Workshop, June 2009.

Demonstrations

Mathematics in 3D

- ICERM, WaterFire public event and Big Bang Science Fair, October 2019.

Name That Polyhedron: 3D printed Catalan solids

- Trinity Upper School, NYC, interactive demonstration with 3D printed models, April 2019.
- Joint Mathematics Meetings in Baltimore, MD, Gathering for Gardner event, January 2019.

Yosizawa/Miura Press

- CUNY Graduate Center, MOVES Conference on Recreational Mathematics, August 2019.

Cube Puzzles and Girih Tiles

- Maker Faire Bay Area booth exhibit, Featured Educator, Ultimaker, San Mateo, CA, May 2016.
- USA Science & Engineering Festival in DC, Featured Educator, Ultimaker, April 2016.
- South by Southwest, Create/Interactive Featured Educator, Ultimaker, Austin, TX, March 2016.

Fidget Stars

- World Maker Faire, New York Hall of Science, Featured Thingiverse Designer, September 2015.

Trigonometric Bracelets

- Joint Mathematics Meetings in San Antonio, MoMath Exhibit Booth, January 2015.

Panel Sessions

Graduate School and Academic Careers in Mathematics

Elon University Department of Mathematics, Elon, NC, April 2026.

Student Engagement

MAA Section NExT, MD/DC/VA Sectional Meeting at James Madison University, April 2024.

The Pedagogy of Classroom Voting/Polling

MAA Project NExT Webinar, April 2021.

Getting Started with Mastery Based Grading

MAA MathFest, Project NExT (remotely), July 2020.

Math + Art

ICERM, Brown University, and Rhode Island School of Design, October 2019.

Exploring 3D Design Software and Best Practices

Construct3D Conference, Duke University, Durham, NC, May 2017.

Refocusing Your Career: Making Time and Space

Joint Mathematics Meetings in Atlanta, MAA Panel Session, January 2017.

3D Printing in Education

Inside 3D Printing Conference, New York, NY, April 2014.

Benefits of hosting a Regional Undergraduate Mathematics Conference

Joint Mathematics Meetings in New Orleans, January 2011.

Obtaining funding for and maintaining REU Programs

MAA MathFest in Pittsburg, Project NExT, August 2010.

Making the math major work for the underprepared student

Joint Mathematics Meetings in San Diego, Project NExT, January 2008.

Teaching Issues in Calculus

Thomson/Brooks-Cole/Cengage LearningWorkshop, San Francisco, CA, September 2007.

Getting your first textbook published

Joint Mathematics Meetings in New Orleans, Project NExT, January 2007.

Strategies for establishing a research/scholarship agenda

JMU Center for Faculty Innovation, Faculty Workshop Series, September 2006.

Tenure and Pre-Tenure Review

MAA MathFest, Project NExT Meeting, Knoxville, TN, August 2006.

Finding your classroom style

MAA Kentucky Section Meeting, Project NExT Session, Centre College, March 2006.

TEACHING

Mathematics Courses

Experience includes extensive General Education curriculum development for unique liberal arts math classes and STEM Calculus with Precalculus. List of mathematics courses taught:

- The Nature of Mathematics (Games, Puzzles, Knot Theory, 3D Printing, Origami)
- Fundamentals of Mathematics
- Algebra Gateway
- Calculus with Functions I and II
- Calculus I and II
- Introduction to Proof and Discrete Mathematics
- Graph Theory
- Abstract Algebra
- Advanced Linear Algebra
- Algebraic Topology

Design Courses

Interdisciplinary courses taught through JMU 3SPACE, the JMU College of Education, and the JMU General Education program, including:

- Interactive Patterns and Artificial Intelligence
- rAnDomNEsS and Generative Design
- Fabrication and Analysis of 3D Puzzles
- Representing the World in 3D
- Mathematical 3D Fabrication
- Laboratory Introduction to 3D Printing

- Mathematics Methods: Desktop Fabrication (with Geoffray Estes)

Faculty Workshops

Co-taught with Jamie Calcagno-Roach.

Semester and summer programs for JMU faculty interested in incorporating 3D printing and design into their own curriculum and scholarship, taught with support from JMU Libraries:

- Introduction to 3D Printing
- Introduction to 3D Scanning
- Virtual Reality with Sketchup and Oculus Rift
- Digital Fabrication with Carvey and ShopBot
- 3D Design in Color with MeshMixer, DaVinci Color, and Mosaic Palette
- 3D Printing Beyond Plastic: Food Printing
- Design Beyond Tinkercad: MeshMixer and Fusion 360
- Design It, Print It, Share It: Fusion 360 and Shapeways
- Integrative Design Technology Fellows, Semester Institute

ORGANIZING

Conferences

ICERM Hot Topics Workshop: AI-assisted coding for Mathematical Exploration

Co-Organizer.

Three-day workshop at the Institute for Computational and Experimental Research in Mathematics, Brown University, December 2026 (upcoming).

ICERM Illustrating Mathematics Reunion/Expansion Workshop

Co-Organizer.

Week-long workshop at the Institute for Computational and Experimental Research in Mathematics, Brown University, August 2025.

Park City Mathematics Institute (PCMI) Graduate Summer Program

Illustrating Mathematics Organizing Committee.

Week-long NSF-funded remote summer course open to graduate students and the larger mathematical community, 2021.

Construct3D

- Higher Education Committee, Rice University, February 2020.
- Higher Education Program Chair, Georgia Tech, October 2018.
- Organizing Committee for this academic 3D printing conference, and also Steering Committee for the inaugural conference at Duke University, May 2017.

ICERM Illustrating Mathematics Semester Program

Program Organizer.

Semester-long program at the Institute for Computational and Experimental Research in Mathematics that brought together over 250 research mathematicians and artists, 50 of which were in residence for the semester, Fall 2019.

Computational Textiles Working Group

Co-Organizer.

Week-long workshop conference, part of the ICERM Illustrating Mathematics Semester Program, Brown University, Fall 2019.

Illustrating Mathematics Workshop

Co-Organizer.

Week-long conference on mathematics and 3D digital media at the Institute for Computational and Experimental Research in Mathematics, June 2016.

Shenandoah Undergraduate Mathematics and Statistics (SUMS) Conference

Co-Director, with Elizabeth Brown.

Each year we hosted 200–360 attendees, 25–45 student talks, 20–30 student posters, and two invited keynote addresses, for nine years, 2005–14.

MOVES Conference on Recreational Mathematics

Conference Director for the inaugural year.

This conference drew 250 mathematicians and educators from around the world to see two keynote addresses, six featured talks, 38 research talks, 17 family track activities, and mathematical evening entertainment, in conjunction with the National Museum of Mathematics (MoMath), August 2013.

MAA MD/DC/VA Section Meetings

Program Chair.

Fall and Spring regional conferences for the Mathematical Association of America, each involving 100–200 attendees, 20–40 faculty and student talks, and 3–4 invited speakers, 2006–07 and 2007–08. Also organizer of the undergraduate portion of the Spring Meeting in 2009.

Sessions

Illustrating Mathematics Technical Seminars Program

Co-Organizer.

Semester-long series of technical talks and workshops, part of the ICERM Illustrating Mathematics Semester Program, Brown University, Fall 2019.

MAA Paper Sessions

Organizer or Co-Organizer.

Invited and contributed paper sessions, each involving 8–21 speakers:

- Technical Tools for Mathematical 3D Printing, Joint Math Meetings, Atlanta, 2017.
- What Can a Mathematician Do With a 3D Printer?, MathFest, Washington, DC, 2015.
- Knot Theory and its Applications, AMS Section Meeting, UNC Greensboro, 2014.
- The Mathematics of Sudoku and Other Pencil Puzzles, Joint Math Meetings, Boston, 2012.
- The Mathematics of Games and Puzzles, Joint Math Meetings, New Orleans, 2011.
- Open and Accessible Problems in Knot Theory, MathFest, Portland, 2009.
- The Mathematics of Games and Puzzles, Joint Math Meetings, Washington, DC, 2009.
- The Mathematics of Sudoku and Other Puzzles, Joint Math Meetings, New Orleans, 2007.

MAA and Project NExT Panel Sessions

Organizer or Co-Organizer.

- Integrating Calculus, Precalculus, and Algebra, Joint Math Meetings, Baltimore, 2003.
- Project NExT Pedagogy Swap, Joint Math Meetings, New Orleans, 2001.

PROFESSIONAL SERVICE

Committees and Boards

IMPACT-CalcPlot3D Consultant and Advisory Board

Sharing expertise on STL file generation and 3D printing of conceptually and pedagogically useful solids from CalcPlot3D, for the National Science Foundation grant *Collaborative Research: Institutional Mentored Partnerships Advancing Multivariable and Vector Calculus Teaching with CalcPlot3D*, held by Paul Seeburger, Shelby Stanhope, Stepan Paul, and Deb Moore-Russo, 2025-present.

Roger Antonsen Memorial Prize Committee

Committee that proposed, and obtained funding for, a new American Mathematical Society award in honor of Roger Antonsen, Oslo University, 2025-present.

Illustrating Mathematics Steering Committee

This committee identifies and organizes future workshop and semester opportunities for collaborative research between mathematicians and artists, 2019-present.

IHP Trimester Program Scientific Committee

Member of the scientific committee for Illustration as a Mathematical Research Technique, a trimester program at the Institut Henri Poincaré, Paris, France, January-April 2026.

MAA MD/DC/VA Award Committee

Selection committee for yearly awards given by the Mathematical Association of America, including the Sister Helen Christiansen Meritorious Service Award, John M. Smith Teaching Award, and nominations for the national Haimo award, 2018-25.

MAA Polya/NAM/AWM Section Lecturers Committee

National committee of the Mathematical Association of America, council of prizes and awards, 2020-22.

Project NExT Mentor and Consultant

Mentor and consultant for Project NExT Fellows at the section and national levels, 2006-13, 2018-20.

Jury Member, *Journal of Mathematics and the Arts*

Committee for selecting the annual Outstanding Paper Award for the journal, 2016-19.

Founding Board Member, Lady Tech Guild

The Lady Tech Guild is a collective of professional women from New York City and around the globe who are 3D artists, designers, biohackers, educators and entrepreneurs, 2014-18.

MAA Social Media Task Force

Member of this committee reporting to the Executive Committee and Board of Governors of the Mathematical Association of America, 2016-17.

Allendorfer Award Committee

National award committee of the Mathematical Association of America, 2008-11.

Carriage House Advisory Board

National committee of the Mathematical Association of America headquarters, 2005-09.

Program Chair, MAA MD/DC/VA Section

- Outgoing Program Chair, 2008.
- Regional conference organizer for the Mathematical Association of America 2006-07.

– Program Chair-Elect, 2005.

Trevor Evans Award Committee

National awards committee of the Mathematical Association of America, 2005-08.

Editing and Reviewing

Bridges Programme Committee

Reviewer of short and long papers for the competitive *Proceedings of the Bridges Conference on Mathematics, Art, Architecture, Education, and Culture*, 2020-present.

Peer Reviews of Mathematical Articles

For many professional journals, including the *College Math Journal*, *Math Horizons*, *Mathematics Magazine*, *Journal of Mathematics and the Arts*, *Interlace*, and the *American Mathematical Monthly*, 2001-present.

Manuscript Reviews

For publishers including Oxford University Press, Cambridge University Press, Princeton University Press, Dover, World Scientific, Wiley, and Pearson, 2000-present.

NSF Ad Hoc Reviewer

Ad hoc review of a conference grant proposal for the National Science Foundation, May 2025.

SMI-SCULPT Program Committee

Papers Committee for Shape Modeling International (SMI) and Shape Creation Using Layouts, Programs, & Technology (SCULPT) forum and symposium, with proceedings in a special issue of *Computers & Graphics*, Elsevier, 2022-24.

Puzzle Editor, *FOCUS*

Editor of puzzle column in each issue of the magazine of the Mathematical Association of America, 2011-15.

***Math Horizons* Editorial Board**

Undergraduate magazine of the Mathematical Association of America, 2008-13.

Columnist, *College Math Journal*

Regular contributor for the Media Highlights section of the journal, 2008-09.

Freelance Mathematical Accuracy-Checker

Including *Calculus* (Smith and Minton), *Elementary Linear Algebra* (Anton and Rorres), *Visual Linear Algebra* (Herman and Pepe), *The Art and Craft of Problem Solving* (Zeitzi), *College Algebra* (Young), and *Technical Mathematics* (Calter), 2001-09.

MATHCOUNTS Proofreader and Mathematical Accuracy-Checker

For Handbook problems and National and State competition problems, 2002-08.

UNIVERSITY SERVICE

Leadership

Faculty Advisor, Yarn Works JMU Student Club

Faculty advisor for the re-boot of this club for students interested in knitting, crochet, weaving, and other fiber arts, 2026-present.

Roop Display Case for Undergraduate Research

Established and manage the Roop Hall foyer display case for undergraduate research, 2024-present.

Co-Director, Haynes Scholars Residential Learning Community

Co-director, with Elizabeth Arnold.

An academic residential learning community for first-year STEM majors at JMU, run by the Department of Mathematics and Statistics, 2021-present.

Founder and Director, JMU Experimental Mathematics Lab (JEM Lab)

An undergraduate research lab for experimental mathematics by early-career students. Member of Geometry Labs United, a consortium of technology research labs at national and international research universities, and the first at a primarily undergraduate institution, 2013-present.

Entrepreneurship Faculty Fellow

Representative of the Gilliam Center for Entrepreneurship for the JMU College of Science and Mathematics, to spread the entrepreneurial mindset to students across the university, 2023-25.

Leadership Team, JMU 3SPACE

Part of a small team that advises JMU Libraries and helps create curriculum and training for the JMU 3SPACE 3D Printing Classroom, which I founded, and which is now part of and managed by Carrier Library, 2013-23.

Committees

Reader for JMU Honors Thesis papers

Selected reader/reviewer for various student research projects in the JMU Department of Mathematics and Statistics, the JMU Department of Computer Science, and the JMU Honors College, 2008-present.

College and University Committees

Includes service on Sponsored Programs Evaluation Services, Diversity Council, Academic Integrity Task Force, Honor Board, Judicial Board, Goldwater Scholarship Committee, Academic Programs, Faculty Senate Alternate, and Search Committee for CSM Scientific Computing Specialist, various years 2000-present.

Departmental Committees

Includes service on Technology, Website, Pure Math, MATH 231-232 Coordinator, Acting Pure Math Chair, Recruitment and Activities, Diversity, Search Committees, Search Committee Chair, Program Review, Mentoring, Service Courses, First-Year Courses, and Calculus committees, various years 2000-present.

Shenandoah Valley Science Fair Judge

Volunteer judge for Mathematics, Computer Science, and Consumer Science categories, James Madison University, 2003-09.

Editor, Problem of the Week

James Madison University Department of Mathematics and Statistics, 2003-08.

Editor, *Online Journal of Undergraduate Papers in Knot Theory*

Self-managed resource hosted at James Madison University where undergraduates interested in knot theory could find papers written by their peers, 2003-08.

Editor, JMU High School Mathematics Contest

James Madison University Department of Mathematics and Statistics, 2003 and 2004.

FUNDING

Grants

Tensor SUMMA (Strengthening Undergraduate Minority Mathematics Achievement) Grant

Co-PI, with PI Elizabeth Arnold.

From the Mathematical Association of America, **\$5,500** for continued support of the Haynes Scholars Residential Learning Community, FY 2024-25, no cost extension FY 2025-26.

Tickle & Bliss Summer Research Scholarships

\$4,000, four \$1,000 scholarships for students Kae Birch, Jared Gonzalez, Claire Jones, and Lauren Wiermanski to continue Crochet & Code research under my direction, Summer 2024.

Undergraduate Research in View: JMU Math & Stat Display Case

Lead, with Elizabeth Arnold, David Duncan, Caroline Lubert, Stephen Lucas, Minah Oh, Roger Thelwell, and Prabhashi Withana Gamage.

\$1,785 from a JMU College of Science & Mathematics Spring Research Stimulus grant, to convert a large display case into a high-traffic showcase of innovative undergraduate research projects from the Department of Mathematics & Statistics, Spring 2024.

Donor Funding for the Haynes Scholars Program

With Elizabeth Arnold.

\$2,500 expendable donation from Steve and Nora Crouch, through JMU Development, JMU Foundation, Spring 2024.

JMU Experimental Mathematics Lab: Supporting undergraduate research projects and multi-university grant opportunities

For equipment replacement to sustain our ability to create high-quality mathematical models for research exploration and grant support, **\$3,195**, Spring 2023.

Tensor SUMMA (Strengthening Undergraduate Minority Mathematics Achievement) Grant

Co-PI, with PI Elizabeth Arnold.

From the Mathematical Association of America, **\$6,000** for projects designed to encourage the pursuit and enjoyment of mathematics by students who are members of groups historically underrepresented in the field of mathematics, to support student leaders, tutors, supplies, and trips in the Haynes Residential Learning Community, FY 2021-22, no cost extensions FY 2022-23, and FY 2023-24.

JMU Faculty Senate Mini-Grant

With Elizabeth Arnold.

\$4,500 to support materials, student advisory committee, and faculty consultants for development of the Haynes Residential Learning Community, Spring 2021.

JMU Provost's Faculty Diversity Curriculum Development Grant

With Elizabeth Arnold.

\$3,000 to support faculty curriculum development for the academic component of the Haynes Residential Learning Community, Spring 2021.

JEM Lab Equipment Funds

Ongoing end-of-financial-year support from the Department of Mathematics and Statistics, in particular **\$3,000** and facilities support in 2013; **\$5,000** for new equipment in 2018.

Regional Undergraduate Mathematics Conference (RUMC)

With Elizabeth Brown.

National Science Foundation grant via the Mathematical Association of America, **\$2,500–\$3,000** yearly for the SUMS Conference each year 2005-15.

Shapeways Education Grant

Educational grant of **\$1,000** awarded to student Jonathan Gerhard to support work in the JEM Lab under my direction, 2018.

Ultimaker Equipment Sponsorship for the JMU 3SPACE Classroom

Sponsorship of eight Ultimaker 3D printers worth **\$29,440** for increasing capacity and capability in the JMU 3SPACE General Education classroom and at JMU Libraries, 2017.

JMU 3SPACE 3D Printing classroom

Funds from Dean Brakke and a university donor, **\$35,000** for 3D printers, computers, and facilities, 2013; **\$5,000** for equipment upgrades, 2014.

Creating a Group Learning Classroom

Grant of **\$3,000** from the Center for Faculty Innovation at James Madison University for the purchase of tables to convert a classroom to a group learning environment, Fall 2011.

National Research Experience for Undergraduates Program (NREUP)

Co-PI, with PI Anthony Tongen.

MAA grant funding of **\$27,499** for *M3: Mentoring for Minorities in Mathematics, Mancala-type games and numerical solution of ODEs*, 2010.

CCLI (Phase II) National Science Foundation Grant

Co-PI, with PI Donna Sundre.

Grant for JMU Center for Assessment & Research Studies, **\$498,765** for *Advancing Assessment of Scientific and Quantitative Reasoning*, renewed November 2009.

Fellowships

QRT Fellowship and Housing Stipend, Institut Henri Poincaré

Three weeks of lodging and expenses in Paris, paid by the Institut Henri Poincaré (IHP) to promote the participation of women in scientific programs, for the Illustration as a Mathematical Research Technique trimester, February 2026.

Entrepreneurship Faculty Fellow

College of Science & Mathematics representative for the Gilliam Center for Entrepreneurship in the JMU College of Business, to support undergraduate projects, ideas, and competitions, and to foster innovation and new venture development, **\$3,000**, 2023-24 and 2024-25.

Faculty Associate for JMU Libraries

Multi-year appointment with **\$3,500/semester** release time to work with Jamie Calcagno-Roach in the office of JMU Innovation Services and Instructional Technology to support the JMU 3SPACE Classroom, Rose Library 5th floor experimental 3D printing hardware, 3DPAC Conference Development, Integrative Design Technology Fellows Program, and upcoming Estonia Study Abroad Program, 2016-20.

ICERM Illustrating Mathematics Semester Research Fellow

Brown University, **\$20,000**, Fall 2019; supported by National Science Foundation Grant No. DMS-1439786 and the Alfred P. Sloan Foundation award G-2019-11406, and by a Simons Foundation Targeted Grant award 507536, 2019.

MoMath Mathematician-in-Residence

Salary supported by Two Sigma and the Simons Foundation, through the National Museum of Mathematics (MoMath), New York City, Fall 2014.

Visitor Support

Maison Poincaré, Institut Henri Poincaré

Travel within Europe and lodging, paid by the exhibition *Création, entre arts et mathématiques*, to return to Paris to close out the exhibit, July 2026.

Voices of Discovery Guest Speaker, Elon University

One week of travel and hotel, paid by Elon University, for a visit as the university-wide Voices of Discovery guest speaker, April 2026.

JMU College of Science & Mathematics Professional Development Funding

For a three-day hands-on loom weaving workshop in Appomattox, Virginia, to support future collaboration with Lisa Marks (Georgia Tech), March 2026.

Maths Fest, Royal Institution, London

Travel within Europe, paid by Matt Parker (Stand-up Maths), to perform in this three-day festival of maths for sixth formers, February 2026.

Gorenstein Visitor, Queens College

Two weeks of travel and hotel in New York City, paid by Queens College, to support a research collaboration and department visit, October 2025 and May 2026.

Illustrating Mathematics Reunion/Expansion Workshop, ICERM

One week of travel and hotel, paid by the Institute for Computational and Experimental Research in Mathematics, to attend this workshop as an organizer, Brown University, August 2025.

Tangled in Knot Theory, ICERM

One week of travel and hotel, paid by the Institute for Computational and Experimental Research in Mathematics, for attending and participating in this summer research workshop conference, Brown University, Summer 2023.

Distinguished Visitor, Oberlin College

Travel and lodging, paid by the “Fuzzy Vance” Distinguished Visitor program, for a residency with Robert Bosch at Oberlin College, and a public lecture, March 2020.

Illustrating Mathematics Workshop, ICERM

One week of travel and hotel, paid by the Institute for Computational and Experimental Research in Mathematics, to attend this workshop as an organizer, Brown University, June 2016.

HONORS**Awards**

International Lighting Competition Winner

With designer Alicia Tam Wei (Parsons) as AABSTRACT Studio; our mathematical acoustic lamp collection *Illumiknotti* was selected as the winner of the Acoustic category in the 2023 International Lighting Competition sponsored by LAMP and design\milk, 2023.

US State Department Embassy Speakers Program

Part of a selected group of American experts and specialists who engage with foreign audiences around the world through lectures, workshops, and seminars, 2018-20.

SCHEV Outstanding Faculty Award

The Commonwealth's highest honor for faculty at Virginia's public and private colleges and universities, for superior accomplishments in teaching, research, and public service, from the State Council of Higher Education for Virginia, 2013.

PROSE Award

The American Publishers Awards for Professional and Scholarly Excellence, for the book *Taking Sudoku Seriously* in the category of Best Popular Science and Mathematics book, 2012.

Textbook Excellence ("Texty") Award

From Text and Academic Authors Association (TAA), for the textbook *Integrated Calculus: Calculus with Precalculus and Algebra*, 2006.

MAA Alder Award

This national MAA award that recognizes talented young mathematics teachers whose teaching has had influence beyond their own classrooms, 2005.

MAA Trevor Evans Award

This national MAA award for exceptional articles that are accessible to undergraduates and published in the magazine *Math Horizons*, 2003.

MAA Project NExT Fellow

Competitive fellowship for new mathematicians and teachers of mathematics, part of the New Experiences in Teaching professional development program of the Mathematical Association of America, Fellowship year 2000-01.

University Awards

JMU Provost's Award for Excellence in Inclusivity

Recognition for inclusivity work in calculus courses, undergraduate research in mathematics, and the Haynes Scholars residential learning community, 2024.

JMU Purple Star Award for Community Service and Volunteerism

With Harrisonburg Makers Help and James Madison University Libraries, created over 3,000 3D printed and lasercut COVID-19 face shields for PPE donations to local medical facilities, 2020.

JMU Department of Mathematics and Statistics Distinguished Scholar Award

Recognition for active scholarly work in research publications, 2014.

JMU College of Science and Mathematics Distinguished Teacher Award

Given annually to one faculty member in the college, 2008.

JMU "Be the Change" Representative

One of many James Madison University people whose profiles are featured as part of the national Be the Change campaign, and one of twelve people on the 2007 JMU calendar, 2006-present.

JMU Department of Mathematics and Statistics Distinguished Teacher Award

Recognition for excellence in teaching and curriculum development, 2006.

Duke University L.P. and Barbara Smith Award for Excellence in Teaching

The highest graduate teaching award given by the Duke University Mathematics Department, 1998 and 1999.

Duke University Dean's Award for Excellence in Teaching

One of two recipients (on two occasions) of this university-wide annual award from the Duke University Graduate School, 1997 and 1999.

Duke University Mathematics Teaching Award

Annual graduate student award given by the Duke University Mathematics Department, 1997.

PRESS

Articles

- *Journal of Mathematics and the Arts*, “Editor’s Letter”, Joy Ko, 2026.
- *Journal of Mathematics and the Arts*, “Exhibition review of ‘Creation: Between Art and Mathematics’”, M. Skrodzki, 2026.
- *Nexus Network Journal*, “Bridges Halifax 2023”, Rachel Quinlan, 2024.
- *The Mathematical Intelligencer*, “The Illustrating Mathematics Program at ICERM”, Richard Evan Schwartz, 2020.
- American Mathematical Society, Mathematical Imagery, “ICERM Illustrating Mathematics”, 2019.
- Mike’s Math Page, multiple posts and videos, 2018.
- *Huffington Post*, “A Million Business Cards Present a Math Challenge”, Tim Chartier, 2017.
- James Madison University, *2015-2016 Annual 4-VA Report*, “Remodeling Math Education”, 2016.
- *The Wall Street Journal*, “Billionaires and Mathematicians Crack Jokes at Geekiest Event of the Season”, Bradley Hope, 2014.
- *Nature*, “Mathematician claims breakthrough in Sudoku puzzle”, Eugenie Samuel Reich, 2012.
- *Science News*, “Sudoku Class”, Ivars Peterson, 2007.

Interviews

- MAA Career Profiles, “3D Printing: A Growing Force”, 2019.
- My Favorite Theorem podcast, episode 14, “Unreasonably large bounds on Reidemeister move sequences”, with Evelyn Lamb and Kevin Knudson, 2018.
- MyMiniFactory, designer interview, “Laura Taalman aka mathgrl”, 2016.
- ThoughtStretchers Podcast, “3D Printing is Changing Everything”, 2015.
- Association for Women in Mathematics Student Essay Contest, “How to Math?! Interview with Laura Taalman”, Ellen Li, 2015.
- Science Friday, “The ABCs of 3D Printing”, with Bre Pettis, 2014.
- AMS Blog on Math Blogs, “The Revolution Will Be 3D Printed”, Evelyn J. Lamb, 2014.
- Inspired by Math podcast, episode 3, with Jason Rosenhouse, hosted by Sol Lederman, 2013.

Mentions in Books

- *Love Triangle: How Trigonometry Shapes the World*, Matt Parker, Riverhead Books, 2024.
- *The Mathematical Playground: People and Problems from 31 Years of Math Horizons*, Alissa S. Crans and Glen T. Whitney, MAA Press, 2024.
- *Introduction to Mathematics*, Scott A. Taylor, American Mathematical Society, 2023.
- *The Art of Computer Programming: Combinatorial Algorithms, Volume 4A*, Donald Knuth, Addison-Wesley, 2021.
- *Pi in Nature, Art, and Culture: Geometry as a Hermeneutic Science*, Marcel Danesi, Brill, 2020.

- *Abstract Algebra with Applications*, Audrey Terras, Cambridge Mathematical Textbooks, 2019.
- *Visualizing Mathematics with 3D Printing*, Henry Segerman, Johns Hopkins Univ. Press, 2016.
- *Things to Make and Do in the Fourth Dimension*, Matt Parker, Doubleday Canada, 2014.
- *SAS/OR 9.22 User's Guide: Constraint Programming*, SAS Institute, 2010.

DEVELOPMENT

Continuing Education

- Weaving Workshop, three-day hands-on profile drafting class, Appomattox, VA, August 2026.
- Weaving Workshop, three-day hands-on loom weaving class, Appomattox, VA, March 2026.
- Patterning in Machine Knitting, The Knitting School Online, workshop course, Spring 2024.
- The Nature of Code: p5.js, Kadenze, taken for certificate, Summer 2020.
- Surface Design II, Rhode Island School of Design, taken for grade (A), Summer 2020.
- WebAssign Coding Webinar, Cengage WebAssign technical series, July 2020.
- Surface Design, Rhode Island School of Design, taken for grade (A), Fall 2019.
- Applied Color, Rhode Island School of Design, taken for grade (A), Fall 2019.
- CS 180E: Python, James Madison University, taken for grade (A), May 2019.
- Machine Knitting 102: Texture + Patterns, Brooklyn Studio, Textile Arts Center, August 2018.
- Machine Knitting 101, Brooklyn Studio, Textile Arts Center, April 2018.
- Rhino: Introduction to NURBS Modeling, Magnetic Visions, Brooklyn, NY, February 2016.
- Parametric Design with Grasshopper, Cooper Union, New York City, NY, January 2016.
- Digital Ideation with Maya, Pratt Institute, Brooklyn, NY, February 2015.

Instructional Training

- JMU IRB Social/Behavioral Research Course, Stage 1, completed and passed 2021 and 2026.
- FERPA 2.0, JMU IT Training eLearning, completed January 2024.
- Inclusive Communication in the STEM Classroom, Sathy/Hogan TopHat Webinar, Dec 2023.
- LLMs: A New Way to Teach Programming, Zingary/Porter ACM TechTalk Webinar, June 2023.
- Kognito Mental Health Training, completed and passed Fall 2022.
- DEI Workshop for REU Directors & Faculty, Minorities in the Mathematical Sciences, May 2021.
- EVERFI Diversity Training, completed Spring 2021.
- jmuDESIGN Institute, Virtual Edition, Center for Faculty Innovation, June 2020.
- Best Practices and Resources for Temporary Remote Teaching, Innovation Services, March 2020.
- JMU Green Dot Training, College of Science and Mathematics, January 2020.
- Cascade Open Lab, technical web design, July 2019.
- Cascade Version 8, web development and content management system, March 2019.
- DIY Instructional Videos, for creating short, quick-cut videos for tutorials, November 2018.
- Teaching and Learning with Technology, Conferences and workshops, 2016, 2017, and 2018.
- Madison Maker Fellows, digital fabrication community development, September 2017.
- Cascade Overview, basic technical training for publishing websites, 2016.
- Using Clickers & IF-ATs, Center for Faculty Innovation, September 2007.

Memberships

- Mathematical Association of America

- National Association of Mathematicians
- American Association of University Professors, JMU Chapter
- MAA SIGMAA-REC
- Lady Tech Guild