DONNA L. BEERS, Ph.D.

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Education

Ph.D., Mathematics 1976
The University of Connecticut, Storrs, CT

Dissertation: *The Isomorphism Problem for Infinite Abelian Group Rings*

M.S., Mathematics 1972
The University of Connecticut, Storrs, CT

B.A., Mathematics 1970
The University of Connecticut, Storrs, CT

Highest Honors, Phi Beta Kappa, University Scholar

Research Specializations & Interests

Pure Mathematics: Infinite abelian groups and commutative algebras.

Applied Mathematics: Social network analysis, graph and network theory, civilian citizen science, cyber-physical infrastructure defense, and soft target risk management.

Academic Appointments

Simmons University	
Professor of Mathematics	1993–Present
Associate Professor of Mathematics	1986–1993
Connecticut College	
Assistant Professor of Mathematics	1984–1986
Wellesley College	
Assistant Professor of Mathematics	1977–1984
Connecticut College	
Assistant Professor of Mathematics	1976–1977
Instructor of Mathematics	1975–1976

Administrative & Leadership Experience

Simmons University

Director, Verizon Scholars Program	2001–2003
Director, Honors Program	2000–2002
Chair, Department of Mathematics & Computer Science	1993–1999

Honors & Distinguished Awards

- **Award for Distinguished College or University Teaching** | *Northeastern Section, Mathematical Association of America (MAA)* 2015

  Recognizing excellence in university instruction and impactful pedagogical contributions to the region.

- **The Toby Sloane Award for Student-Centeredness in Teaching** | *Simmons University* 2012

  Awarded for unparalleled commitment to undergraduate student mentorship and success.

- **The MAA Certificate of Meritorious Service** | *Mathematical Association of America* 2007

  Presented in formal recognition of outstanding service to the national organization and leadership within the Northeastern Section.

Professional Development & Certifications

- **AI Literacy Micro-Credential for Educators** | *ALCHEMY* **May 2026**

  Completed a comprehensive four-module framework covering AI's Role in Education, Reimagining Assessment in the Age of AI, Making AI-Enhanced Learning Inclusive, and Critically Reflective AI Pedagogy.

Publications

Refereed Journal Articles

- **Beers, Donna**, and Ellen Davidson. "A Learning Community for Pre-service Elementary Teachers: A Collaboration between Mathematics and Education." *PRIMUS*, vol. 19, no. 6, 2009, pp. 519–540. [Link to article]
- **Beers, Donna L.** "The Role of Applications in the New Calculus." *PRIMUS*, vol. 1, no. 4, 1991, pp. 368–372. [Link to article]
- **Beers, Donna,** Fred Richman, and Elbert Walker. "Group Algebras of Abelian Groups." *Rendiconti del Seminario Matematico della Università di Padova*, vol. 69, 1983, pp. 41–50. [Link to article]

Refereed Conference Proceedings

- **Beers, Donna**, and Clifton P. Morrow. "Bridging the Gap: A Linear Algebra Unit for Critical Infrastructure Defense." *Proceedings of the First International Conference on Cross-Domain Security in Distributed, Intelligent, and Critical Systems (CROSS-SEC 2026)*, IARIA, Lisbon, Portugal, April 19–23, 2026, pp. 107–111. [Link to paper]
- **Beers, Donna**, Roger Hunter, Fred Richman, and Elbert Walker. "Computing Valuated Trees." *Abelian Group Theory: Proceedings of the Third Conference on Abelian Group Theory at Oberwolfach (August 11–17, 1985)*, Gordon and Breach Science Publishers, New York and London, 1987, pp. 65–88. [Link to paper]
- **Beers, Donna**, Roger Hunter, and Elbert Walker. "Finite Valuated p-Groups." *Proceedings of the Honolulu Conference on Abelian Groups (December 28, 1982 – January 4, 1983)*, Lecture Notes in Mathematics, vol. 1006, Springer-Verlag, Berlin and New York, 1983, pp. 471–507. [Link to paper]

Peer-Reviewed Educational & Curriculum Modules

- **Beers, Donna**, and Clifton P. Morrow. "Decision Trees in Action: Evacuation and Fire Safety." *SENTRY/CCICADA Educational Modules*, 2025. [Link to module]
- **Beers, Donna**, Clifton P. Morrow, and Yachi Wanyan. "Neighborhood Walk." *SENTRY/CCICADA Educational Modules*, 2024. [Link to module]
- **Beers, Donna**, and Robert Campbell. "Community Detection with Hierarchical Clustering Algorithms." *CCICADA Educational Modules*, 2017. [Link to module]
- **Beers, Donna**, Maurino Bautista, and Mary Goodloe. "Who is Really in Charge: An Application of Graph and Network Theory to Analyzing Social Networks." *CCICADA Educational Modules*, 2015. [Link to module]

- **Beers, Donna**, and Catherine Crawford. "Connecting Forensics and Linear Algebra." *CCICADA Educational Modules*, 2014. [Link to module]

Book Chapters & Invited Contributions

- **Beers, Donna**. "Essays: Pros and Cons of External Funding"; "Encouraging/Leading Curriculum Renewal"; "Winning Faculty Buy-In for Use of Technology to Enhance Teaching and Learning"; "Dependence on and Culturalization of Part-Time Faculty." In *Leading the Mathematical Sciences Department: A Resource for Chairs*, MAA Notes No. 64, Mathematical Association of America, 2004.
- **Beers, Donna**. "Microlabs and Cooperative Group Learning: New Ways to Teach the Calculus." In *The Laboratory Approach to Teaching Calculus*, MAA Notes No. 20, Mathematical Association of America, 1991, pp. 33–37.

Articles & Professional Features

- **Beers, Donna**, Nancy Baxter Hastings, and Kyle Riley. "Implementing an Efficient Departmental Review." *MAA FOCUS*, vol. 30, no. 6, Dec. 2010 / Jan. 2011, pp. 23–24.
- **Beers, Donna**. "As Massachusetts Goes, So Goes the Nation?" *MAA FOCUS*, vol. 29, no. 4, Aug. / Sept. 2009, pp. 24–26.
- **Beers, Donna**. "Where Mathematics Meets Biology: Resources for Students." *MAA FOCUS*, vol. 27, no. 8, Nov. 2007, pp. 23–24.
- **Beers, Donna**. "A Letter from Cambridge, Massachusetts." *Regional Review* (Federal Reserve Bank of Boston), vol. 11, no. 2, 2001, pp. 31–33.

Conference Papers and Presentations (2000–Present)

Peer-Reviewed & Faculty Presentations

- **Beers, Donna,** Arpita Saha, Meghan Johnston, Jane Lopilato, Megan McCarty. "Using Mathematics to Make Meaning: Lessons from an Interdisciplinary Research Experience." Presentation at the Themed Contributed Paper Session*, Mentoring in Practice: Lessons from Undergraduate Research - Successes, Challenges, and Insights*, MAA MathFest 2026, Boston, MA, August 5-8, 2026.
- Johnston, Meghan, **Donna Beers**, and Megan McCarty. "The implementation of a guided interdisciplinary summer research mentorship program." Faculty Poster Presentation at the 2026 Massachusetts PKAL Regional Network Meeting. Weston, MA, June 2026.
- **Beers, Donna**, and Clifton P. Morrow. "Bridging the Gap: A Linear Algebra Unit for Critical Infrastructure Defense." Virtual slide presentation with pre-recorded audio at the *First International Conference on Cross-Domain Security in Distributed, Intelligent, and Critical Systems (CROSS-SEC 2026)*, Lisbon, Portugal, April 19–23, 2026. [Slides] [Video]

- McCarty, Megan, Arpita Saha, **Donna Beers**, Jane Lopilato, and Meghan Johnston. "STEM Summer Research Experience: Bolstering Self-Confidence, Belonging, Competency, and Interdisciplinary Thinking." Presented at *The Eastern Psychological Association Meeting*, Boston, MA, February 2026.
- Saha, Arpita, Megan McCarty, **Donna Beers**, Jane Lopilato, and Meghan Johnston. "Assessing the Implementation of a Research-Based Mentorship Program at Simmons University in Boston, Massachusetts." Presented at *The European ICSE Science Factory Conference and the 6th International STEM Education Conference*, Istanbul, Turkey, November 2025.
- **Beers, Donna**. "Analyzing Urban Vulnerability: Citizen Science and Soft Target Risk Assessment." Minisymposium 60: Undergraduate Research Using the Mathematics of Soft Target Risk Assessment, *Third Joint SIAM/CAIMS Annual Meetings (AN25)*, Montreal, Canada, July 28–August 1, 2025.
- **Beers, Donna**, Arpita Saha, Megan McCarty, Meghan Johnston, and Jane Lopilato. "The Dynamic Research Education Academy for Mentoring Womxn in STEM (DREAM-WSTEM) at Simmons University, Boston, Massachusetts." Faculty Poster Presentation at the *AAC&U Conference: Transforming STEM Higher Education*, Arlington, VA, November 7–9, 2024.
- **Beers, Donna**. "How to Introduce Machine Learning to Early Undergraduates." Invited lecture at the *SENTRY Reconnect Workshop 2024 (AI for Security and Security for AI: A Two-way Exploration)*, Chadds Ford, PA, June 19, 2024.
- **Beers, Donna**. "Neighborhood Walk: Identifying and Protecting Soft Targets and Crowded Places." Poster presented at the *COF Teaching and Learning Conference (Teaching in the Time of AI)*, Emmanuel College, Boston, MA, March 22, 2024.
- **Beers, Donna**. "Developing a Course for Undergraduates on the Mathematics of Machine Learning." Presented at the *AMS Contributed Paper Session on Mathematics Education, Joint Mathematics Meetings*, Boston, MA, January 4–7, 2023.
- **Beers, Donna**. "Renewing Elementary Linear Algebra Courses with Activities in Data Science." Presented at the *MAA Session: Cross-Curricular Applications for Pure Mathematics Courses, Virtual MAA MathFest*, August 5, 2021.
- **Beers, Donna**. "Visualizing the transformative role of mathematics in the fin-de-siècle culture with social network analysis." Presented at the *Contributed Paper Session, Fall Meeting of the Northeastern Section MAA*, Babson College, Wellesley, MA, November 22–23, 2019.
- **Beers, Donna**. "Visualizing the transformative role of mathematics in the fin-de-siècle culture with social network analysis." Poster presented at *MAA MathFest*, Cincinnati, OH, July 31–August 3, 2019.
- **Beers, Donna**. "Uncovering the Critical Nodes in a Supply Chain with Social Network Analysis." Poster presented at the *Colleges of the Fenway Teaching & Learning Conference*, Simmons University, Boston, MA, November 1, 2018.

- **Beers, Donna**. "Uncovering Critical Nodes in a Supply Chain: Connecting Graph and Network Theory to Supply Chain Risk Management." Presented at the *MAA Session: Best Practices and Innovation in the Teaching of Discrete Mathematics, MAA MathFest*, Denver, CO, August 1–4, 2018.
- **Beers, Donna**. "Community Detection with Hierarchical Clustering Algorithms: Connecting Graph and Network Theory to Analyzing Social Networks." Presented at the *MAA Session: Teaching and Learning Advanced Mathematics, MAA MathFest*, Chicago, IL, July 26–29, 2017.
- **Beers, Donna**. "Who is Really in Charge? Connecting graph and network theory to analyzing social networks." Invited keynote address at *The Fifteenth Annual Preskenis Dinner/Lecture*, Framingham State University, Framingham, MA, April 6, 2017.
- **Beers, Donna**. "Who is Really in Charge? Connecting graph and network theory to analyzing social networks." Presented at the *MAA Session: Graph Theory and Other Topics, MAA MathFest*, Columbus, Ohio, August 3–6, 2016.
- **Beers, Donna**. "Connecting Forensics and Linear Algebra." Invited address at the *Pi Mu Epsilon Math Honor Society Induction*, Western New England University, Springfield, MA, April 8, 2016.
- **Beers, Donna**. "Connecting Forensics and Linear Algebra." Presented at the *Mathematics Seminar*, Middlebury College, Middlebury, VT, March 8, 2016.
- **Beers, Donna**. "Connecting Forensics and Linear Algebra." Presented at the *Fall Meeting of the Northeastern Section MAA*, Gordon College, Wenham, MA, November 21, 2015.
- **Beers, Donna**. "Connecting Forensics and Linear Algebra." Invited lecture at the *Applied Math Career Lecture Series*, Wentworth Institute of Technology, Boston, MA, October 6, 2015.
- **Beers, Donna** and Catherine Crawford. "Connecting Forensics and Linear Algebra." Presented at the *MAA Session: Algebra and Linear Algebra, MAA MathFest*, Washington, D.C., August 5–8, 2015.
- **Beers, Donna**. "The Key Player Problem (KPP) for Social Networks: An introduction to network theory, network tools for solving the KPP, and applications to public health and national security." Presented at the *Colleagues in Conversation Series*, Simmons University, Boston, MA, April 9, 2015.
- **Beers, Donna**. "Connecting Forensics and Linear Algebra." Presented at the *Mathematics Department Colloquium*, Providence College, Providence, RI, March 4, 2015.
- **Beers, Donna**. "The summer 2014 SURPASs program and my experience as a Faculty Mentor." Presented at the *MAA Session: Undergraduate Research in Mathematics: How, When, Why, MAA MathFest*, Portland, OR, August 7–9, 2014.

- **Beers, Donna**. "Using Think-Alouds in an Undergraduate Mathematics Course for Preservice Elementary School Teachers." Presented at the *MAA Session: Mathematics Education I, Joint Mathematics Meetings (JMM)*, Baltimore, MD, January 15–18, 2014.
- **Beers, Donna**. "Preliminary Report: Strengthening Student Understanding of One-to-One and Onto Functions." Presented at the *MAA Session: Teaching and Learning Advanced Mathematics, MAA MathFest*, Madison, WI, August 2012.
- **Beers, Donna**. "Strengthening the Teaching and Learning of 'Function': Addressing the Classroom Challenges and Identifying Research Opportunities for Faculty." Presented at the *MAA Session: General Contributed Papers, MAA MathFest*, Lexington, KY, August 2011.
- **Beers, Donna**. "Strengthening the Teaching and Learning of 'Function'." Invited keynote address for the *Project New Experiences in Teaching (NExT) Session, Spring Meeting of the Northeastern Section MAA*, Norwich University, Northfield, VT, June 10, 2011.
- **Beers, Donna**. "Preliminary Report: Strengthening Undergraduate Student Understanding of 'Function'." Presented at the *Fall Meeting of the Northeastern Section MAA*, Providence College, Providence, RI, November 20, 2010.
- **Beers, Donna**. "Preliminary Report: Strengthening Undergraduate Student Understanding of 'Function'." Invited poster presentation at the *Ninth Annual Fall Teaching and Learning Conference of the Colleges of the Fenway*, Emmanuel College, Boston, MA, October 28, 2010.
- **Beers, Donna**. "Preparing Elementary School Teacher Candidates to Meet Changing Licensure Requirements in Mathematics." Presented at the *MAA Session: Innovations in Mathematics Education, MAA MathFest*, Madison, WI, August 2, 2008.
- **Beers, Donna**. "How Can We Help Students Become More FIT (Fluent in Information Technology) for Mathematics?" Presented at the *Spring Meeting of the Northeastern Section MAA*, St. Michael's College, Colchester, VT, May 31, 2008.
- **Beers, Donna**. "What are program review and self-study?" Invited lecture at the *MAA Professional Enhancement Program (Leading the Academic Department: A Workshop for Chairs of Mathematical Sciences Departments)*, Washington, D.C. [Presented sequentially across two sessions: June 19–22, 2008 and October 12–15, 2006].
- **Beers, Donna**, and Ellen Davidson. "A Learning Community for Preservice Elementary School Teachers: Principles and Practices." Invited poster presentation at the *Workshop: Developing Teachers' Knowledge of Mathematics* (sponsored by the Center for Proficiency in Teaching Mathematics), Irvine, CA, January 24, 2007.
- **Beers, Donna**, and Ellen Davidson. "Prospective Teachers Bridge Content and Pedagogy." Presented at the *MAA Session: Promoting Integrative Learning in Mathematics through Learning Communities, MAA MathFest*, Knoxville, TN, August 10, 2006.

- **Beers, Donna**, and Ellen Davidson. "A Learning Community for Prospective Elementary School Teachers." Presented at the *Spring Meeting of the Northeastern Section MAA*, Boston University, Boston, MA, June 3, 2006.
- **Beers, Donna**. "Symmetry Patterns from Botswana." Presented at the *Hudson River Undergraduate Mathematics Conference*, Westfield State College, Westfield, MA, April 8, 2006.
- **Beers, Donna**. "Infusing Writing to Promote Students' Knowledge of Mathematics for Teaching." Presented at the *MAA Session: Current Issues in Mathematics Education, MAA MathFest*, Albuquerque, NM, August 4, 2005.
- **Beers, Donna**. "Using Writing to Promote Learning and Self-Assessment in a Mathematics Course for Prospective Elementary School Teachers." Presented at the *MAA Session: Getting Students to Discuss and to Write about Mathematics, Joint Mathematics Meetings*, Atlanta, GA, January 6, 2005.
- **Beers, Donna**. "The Convergence of Mathematics and Art in *The Da Vinci Code*." Presented at the *Fall Meeting of the Northeastern Section MAA*, Worcester Polytechnic Institute, Worcester, MA, November 20, 2004.
- **Beers, Donna**. "Integrating Learning, Assessment, and Extracurricular Activities." Presented at the *MAA Session: Extracurricular Mathematics, MAA MathFest*, Providence, RI, August 12, 2004.
- **Beers, Donna**. "Guidelines, Timelines, and Tools for Self-Assessment: Students Get Set for Mathematics Conference." Invited address at the *Spring Meeting of the Northeastern Section MAA*, Roger Williams University, Newport, RI, June 4, 2004.
- **Beers, Donna**. "The Convergence of Mathematics and Art in *The Da Vinci Code*." Presented at the *Hudson River Undergraduate Mathematics Conference*, Mount Holyoke College, South Hadley, MA, April 3, 2004.
- **Beers, Donna**. "The Role of Mathematics: Past, Present, and Future Grand Challenges." Invited *Pi Mu Epsilon Address*, Providence College, Providence, RI, April 23, 2003.
- **Beers, Donna**. "What Drives Mathematics? How Does Mathematics Drive Innovation?" Invited *MAA Student Lecture Keynote*, Joint Mathematics Meetings, Baltimore, MD, January 17, 2003.
- **Beers, Donna**. "An Interdisciplinary Honors Seminar: The Art and Science of Patterns." Presented at the *MAA Session: Integrating Mathematics and Other Disciplines, Joint Mathematics Meetings*, San Diego, CA, January 7, 2002.
- **Beers, Donna**. "Outside Academia: A Sabbatical in Industry." Presented at the *Joint Mathematics Meetings*, New Orleans, LA, January 11, 2001.
- **Beers, Donna**. "A Sabbatical at MathSoft: Launching Mathcad 2000 and a Learning Site." Invited address at the *Fall Meeting of the Northeastern Section MAA*, Providence College, Providence, RI, November 17, 2000.

- **Beers, Donna**. "Experimenting with Student Active Learning in a Course for Prospective Elementary School Teachers." Presented at the *MAA Session: Student Active Learning, MAA MathFest*, UCLA, Los Angeles, CA, August 4, 2000.

Mentored Student-Faculty Poster Presentations

Note: Undergraduate student co-authors are underlined.

- Kharina, Alissa, Clarissa Weaver, Gia Gill, Jingwen Pan, Katriel Master, Lauren Barnett, Natasha Maher, Yingjia Xu, Sage Lefebvre, Erica Walker, and **Donna Beers**. "Decoding Environmental Comfort: Does Camberville Air, Noise, and Light Quality Support a Holistic Environment?" Poster presented at the *Simmons University School of Sciences and Health Professions STEM Colloquium*, Boston, MA, April 2026.

  This project was a cross-institutional collaboration with the Community Noise Lab at the Brown University School of Public Health. Dr. Erica Walker (Assistant Professor of Epidemiology) serves as the Director of the Lab, and Sage Lefebvre, MPH, serves as its Program Coordinator.

- Pan, Jingwen and **Donna Beers**. "Decomposing Complexity into Simplicity: An Introduction to Fourier Series." Poster presented at the *Simmons University School of Sciences and Health Professions STEM Colloquium*, Boston, MA, April 2026.

- Afzal, Sumeya, Torres-Perez, Katherine, Javier, Kyara, Jane Lopilato, Meghan Johnston, **Donna Beers**, and Arpita Saha. "Microbial Water Analysis of Muddy River." Poster presented at *the 27th Northeast Student Chemistry Research Conference (NSCRC)* and the *SSHP STEM Colloquium, Simmons University*, Boston, MA, April 2026.

- Capobianco, Julianna, Samantha English, Margaret Hoskins, Isabella Wong, Jane Lopilato, Meghan Johnston, **Donna Beers**, and Arpita Saha. "Chemical Analysis of Boston's Muddy River." Poster presented at *the 27th Northeast Student Chemistry Research Conference (NSCRC)* and the *SSHP STEM Colloquium, Simmons University*, Boston, MA, April 2026.

- Angjeli, Artemisa, Aisha Shaikh, Jane Lopilato, Meghan Johnston, **Donna Beers**, and Arpita Saha. "Muddy River Water Analysis." Poster presented at Northeastern Section of the American Chemical Society program, *Celebrating Women's Careers in Chemistry*, Boston, MA, March 2026.

- Ng, Anna, Janhavi Beley, Gina Gawargi, Madison Williams, Alyssa Kuhn, Jane Lopilato, Meghan Johnston, **Donna Beers**, and Arpita Saha. "Water Quality Assessment of the Muddy River in Boston, MA." Poster presented at *The NDiSTEM at SACNAS Annual Conference*, Columbus, Ohio, November 2025.

- Beley, Janhavi, Madison Williams, Anna Ng, Gina Gawargi, Alyssa Kuhn, Jane Lopilato, Meghan Johnston, **Donna Beers**, and Arpita Saha. "Quantitative Biological Data Analysis of The Muddy River." Poster presented at *The NDiSTEM at SACNAS Annual Conference*, Columbus, Ohio, November 2025.

- Angjeli, Artemisa, Jane Lopilato, Meghan Johnston, **Donna Beers**, and Arpita Saha. "Muddy River Water Analysis." Poster presented at *The Massachusetts Science & Engineering Fair*, Boston, MA, October 2025.

- Gawargi, Gina, Katie Mendez-Solano, Alyssa Kuhn, Meghan Johnston, Jane Lopilato, **Donna Beers**, and Arpita Saha. “Chemical Analysis of the Muddy River.” Poster presented at the *Muddy River Symposium*, Boston, MA, April 8, 2025.
- Iwakura, Fuma, Madison Williams, Jane Lopilato, Meghan Johnston, **Donna Beers**, and Arpita Saha. “Microbial Analysis on the Muddy River." Poster presented at the *PITTCON International Conference*, Boston, MA, March 1–5, 2025.
- Gawargi, Gina, Katie Mendez-Solano, Alyssa Kuhn, Meghan Johnston, Jane Lopilato, **Donna Beers**, and Arpita Saha. “Chemical Analysis of the Muddy River." Poster presented at the *PITTCON International Conference*, Boston, MA, March 1–5, 2025.
- Ng, Anna, Janhavi Beley, MJ Vasquez, Meghan Johnston, Jane Lopilato, **Donna Beers**, and Arpita Saha. “Water Quality Analysis of the Muddy River and Jamaica Pond.” Poster presented at the *PITTCON International Conference*, Boston, MA, March 1–5, 2025.

Workshops, Panels, and Professional Development

Chaired & Organized Academic Minicourses & Panels

- **Panel Co-Organizer** (with Clifton Morrow). Engaging Students with the Mathematics of Soft Target Risk Assessment. MAA MathFest, Indianapolis, IN. August 7–10, 2024.

  Presented: "Neighborhood Walk: A Citizen Science Project" (August 8, 2024).
- **Co-Organizer and Leader** (with Richard Gillman). Developing Departmental Self-Studies. MAA National Minicourse, Joint Mathematics Meetings (JMM).

  San Antonio, TX | January 2015

  Washington, D.C. | January 2009
- **Co-Organizer and Leader** (with Nancy Baxter Hastings). Developing Departmental Self-Studies. MAA National Minicourse, Joint Mathematics Meetings (JMM).

  San Francisco, CA | January 2010

  San Diego, CA | January 2008
- **Panel Organizer and Co-Chair** (with Kyle Riley). The Departmental Self-Study: How to Ensure That It Is Purposeful. MAA MathFest, San Jose, CA. August 3–5, 2007.

Invited Panels & Speaking Engagements

- **Panelist.** "STEM Research and Internships @ Simmons." Co-presentation with student Rachel Beaulieu (Data Science & Analytics '22): Singular Mathematics Powers Research in Big Data. Simmons University. November 17, 2021.

- **Invited Faculty Mentor.** Career Mentoring Workshop (Mentoring program for women doctoral candidates in mathematics). Wheaton College, Norton, MA. June 7, 2016.
- **Invited Panelist.** "CCICADA's Accomplishments: Education." CCICADA Annual Retreat, Department of Homeland Security Center of Excellence, Rutgers University, Piscataway, NJ. April 29, 2016.
- **Invited Panelist.** "The Mystery of the Disappearing Woman: Keeping Women and Girls in the STEM Pipeline." Campus Celebration, Simmons University. September 11, 2015.
- **Invited Panelist.** "Celebrating Women in STEM Fields." Simmons University Student Government Association, Women's College Week. March 20, 2013.
- **Invited Panelist.** "Serving as an Outside Consultant." MAA Minicourse: Preparing to be an External Consultant in the Mathematical Sciences, Joint Mathematics Meetings, Boston, MA. January 4–7, 2012.
- **Invited Panelist.** "New England's Recipe for Stronger Mathematics in Elementary School." Northeastern Section MAA Fall Meeting, Western New England College. November 20–21, 2009.
- **Invited Panelist.** "Putting Together Pre-Tenure Review Materials." MAA Project NeXt, MAA MathFest, Portland, OR. August 5, 2009.
- **Invited Panelist.** "What algebraic skills and habits are useful for high school graduates to ensure success in post-secondary institutions?" Massachusetts Department of Education Algebra II Symposium, Tyngsboro, MA. November 15, 2007.
- **Invited Panelist.** "Creating and Maintaining Active Math Clubs." MAA Project NeXt Panel, Joint Mathematics Meetings, New Orleans, LA. January 5–8, 2007.
- **Invited Workshop Leader.** Developing Internal Departmental Self-Studies for Mathematical Sciences. MAA PREP Consultants Workshop, Dickinson College, Carlisle, PA. June 11–14, 2006.
- **Invited Workshop Leader** (with student co-presenters Karyn Deptula, Carolyn Farmer, and Hannah Kimball). "Frieze patterns: Designing Beautiful Tablescapes—with Geometry!" Sonya Kovalevsky High School Math Day, Simmons University. March 31, 2006.
- **Invited Panelist.** "Defining Leadership for a Mathematical Sciences Department Chair." MAA PREP Workshop for Chairs, Reston, VA (June 2003) & Towson State University, Towson, MD (June 2002).
- **Invited Panelist.** "Tiling as a Bridge between Art and Science." Fourth Annual Symposium: Mathematics & Culture, Boston University, Boston, MA. March 29, 2001.

Selected Professional Development & Grant-Funded Workshops

DHS Center of Excellence Faculty Reconnect Workshops

Selected participant for intensive training initiatives sponsored by SENTRY (Soft Target Engineering to Neutralize the Threat Reality at Northeastern University) and CCICADA (Command, Control, and Interoperability Center for Advanced Data Analysis at Rutgers University).

- **2024 (SENTRY):** "AI for Security and Security for AI: A Two-way Exploration." Mendenhall Inn, Chadds Ford, PA. June 16–19, 2024.
- **2023 (SENTRY):** "Risk Assessment." Omni Hotel, Providence, RI. June 18–23, 2023.
- **2016 (CCICADA):** "Mathematical and Computational Tools for Cyber Security." U.S. Military Academy, West Point, NY. June 12–18, 2016.
- **2015 (CCICADA):** "Mathematical and Computational Tools for Social Networks with Applications to Homeland Security." Rochester Institute of Technology, Rochester, NY. June 14–20, 2015.
- **2014 (CCICADA):** "Forensics." Massachusetts Maritime Academy, Buzzards Bay, MA. June 1–7, 2014.

Higher Education, Pedagogy, & Inclusive Excellence Workshops

- **Participant.** Workshop on Mathematics and Racial Justice. Mathematical Sciences Research Institute (MSRI). Focus areas included algorithmic equity, healthcare disparities, and social justice frameworks in STEM pedagogy. [Online] June 9–16, 2021.
- **Participant.** Proposal House (Advanced grant and proposal-writing workshop hosted by Dean Marie desJardins). College of Organizational, Computational, and Informational Sciences (COCIS), Simmons University. June 3–4, 2019.
- **Participant.** Learning Community Course Design Institute. Simmons Center for Excellence in Teaching, Simmons University. June 2018 & June 2019.
- **Participant.** Faculty Development for Inclusive Excellence in STEM. Project Kaleidoscope (PKAL) Workshop, Wheaton College. January 9, 2019.
- **Invited Participant.** New England Regional Meeting on Upper-Division Math Pathways. Transforming Post-Secondary Education in Math (TPSE Math) Initiative, sponsored by the NSF, Carnegie Corporation, and Sloan Foundation. Worcester Polytechnic Institute. June 11–12, 2018.
- **Invited Participant.** Developing Resources for External Evaluators of Mathematical Science Departments. MAA PREP Consultants Workshop, Dickinson College, Carlisle, PA. June 15–18, 2005.

- **Invited Participant.** Developing Teachers' Knowledge of Mathematics. Center for Proficiency in Teaching Mathematics (CPTM), Irvine, CA (Jan. 2007) & University of Michigan, Ann Arbor, MI (June 2004).
- **Invited Participant.** "Video Analysis Work Session: Using TIMSS Videos to Improve Learning of Mathematics." Research for Better Schools / The Johnson Foundation, Wingspread Conference Center, Racine, WI. August 14–17, 2004.

Funded Grants & Sponsored Research

Major External & Federal Grants

- **NASA MUREP: DREAM-WSTEM (Dynamic Research Education Academy for Mentoring Women in STEM)**
  - *Funding Agency:* National Aeronautics and Space Administration (NASA)
  - *Role:* Core Faculty Mentor (Representing the Mathematics Discipline)
  - *Amount:* $750,000
  - *Period:* July 2023 – July 2025 *(Abbreviated due to NASA programmatic restructuring)*
  - *Scope:* Institutional grant to develop and implement a comprehensive, tiered, and holistic mentorship ecosystem supporting undergraduate women throughout their matriculation in STEM tracks.
- **Clare Boothe Luce Program for Women in STEM: STEM Enrichment Program (SEP)**
  - *Funding Agency:* The Henry Luce Foundation
  - *Role:* Core Faculty Member (Representing the Mathematics Discipline)
  - *Amount:* $645,000
  - *Period:* January 2025 – December 2029
  - *Scope:* Five-year institutional grant supporting a collaborative faculty team to engineer an interdisciplinary corequisite course (*STEM 100*) aimed at bridging foundational mathematical and scientific literacy gaps for first-year students.
- **HHMI Inclusive Excellence 3 (IE 3) Grant**
  - *Funding Agency:* Howard Hughes Medical Institute (HHMI)
  - *Role:* Core Team Member (Representing the Mathematics Discipline)
  - *Amount:* $377,800 *(Simmons University allocation within a 14-institution collaborative cluster)*
  - *Period:* November 2022 – February 2025 *(Funding adjusted due to HHMI structural programmatic shifts)*

  - *Scope:* Collaborative multi-university project focused on building capacity for equity and inclusion by systemically reforming introductory-level STEM curricula.

- **Clare Boothe Luce Program: CBL STEM Community Grant**
  - *Funding Agency:* The Henry Luce Foundation
  - *Role:* Project Director
  - *Amount:* $80,000
  - *Period:* January 2025 – December 2025
  - *Scope:* Institutional grant to support the collaborative development of a planning grant for a local, equitable STEM ecosystems to recruit and retain women and girls in partnership with community organizations.

Corporate & Institutional Grants

- **The Verizon Scholars Program**
  - *Funding Agency:* The Verizon Foundation
  - *Role:* Program Director / Principal Investigator
  - *Period:* Academic Years 2001–2002 and 2002–2003
  - *Scope:* Secured corporate sponsorship to launch a targeted mentoring and web-development training initiative at Simmons University for high school girls from the Boston Public School system.
- **Celebrating Women in Mathematics, Past and Present**
  - *Funding Source:* Presidential Diversity and Inclusion Advisory Council (PDIAC) Grant, Simmons University
  - *Role:* Project Lead
  - *Period:* Spring 2014
  - *Scope:* Funded a collaborative student-faculty research initiative culminating in a dedicated digital and online library catalog feature for Women's History Month.

Selected Proposals Under Review / Unfunded

- **CBL STEM Community Grant**
  Invited Institutional Proposal, 2026 Clare Boothe Luce Program
  - *Role:* Team Member | *Status:* Not Funded.

Professional Affiliations & Leadership

- The Mathematical Association of America (MAA) 1973–2026
    - *Section Leadership, Northeastern Section:*
        - Governor 2000–2003
        - Chair 1993–1995
        - Vice-Chair 1992–1993
- The American Mathematical Society (AMS) 1972–2026
- Society for Industrial and Applied Mathematics (SIAM) 2025–2026

Selected Professional Service

Editorial Boards

- Editorial Board Member, *PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies* 2013–2022
- Editorial Board Member, MAA *Carus Mathematical Monographs* 2010–2016
- Editorial Board Member, MAA *Dolciani Mathematical Expositions* 1999–2005
- Editorial Board Member, *The American Mathematical Monthly* 1996–2001
- Editorial Board Member, *Mathematics Magazine* 1992–1995
- Editorial Board Member, *MAA Anneli Lax New Mathematical Library* 2005–2008

External Program Reviews & Advisory Boards

- **External Program Reviewer**, Mathematics Programs:
    - Ithaca College (Ithaca, NY) March 2023
    - Saint Michael's College (Colchester, VT) March 2015
    - Framingham State College (Framingham, MA) March 2010
    - Stonehill College (Easton, MA) October 2008
- **Chair of the External Visiting Team**, K-12 Mathematics, Weston Public Schools (Weston, MA) March 2007
- **Member**, Applied Mathematics Industrial Professional Advisory Committee, Wentworth Institute of Technology 2014–2016

- **Member**, Massachusetts Board of Higher Education Commissioner's Working Group on Mathematics 2009–2010

  Focus: Diagnostic instruments for elementary teacher preparation.

National & Regional Leadership

National Prize & Selection Committees

- **Member**, MAA Carl B. Allendoerfer Award Committee | *2021–2025*

  The Carl B. Allendoerfer Award is given annually to recognize outstanding expository articles published in Mathematics Magazine.

- **Chair**, Northeastern Section MAA Meritorious Service Award Committee | *Fall 2016*

- **Chair**, MAA Chauvenet Prize Committee | *2005–2006 (Member, 2004–2008)*

  The Chauvenet Prize Committee recognizes outstanding expository writing in mathematics, celebrating articles that make complex ideas accessible and engaging.

- **Member**, MAA Hasse Prize Committee | *2000–2003*

  *The **Merten M. Hasse Prize** is awarded every two years to recognize exceptional expository writing in mathematics. At least one author of the winning paper must be a younger mathematician, and the paper must be published in an MAA publication.*

- **Member**, Northeastern Section MAA Award for Distinguished College or University Teaching Committee | *2001–2003*

National Strategy & Advisory Governance

- **Panel Reviewer**, National Science Foundation (NSF), STEM Talent Expansion Program (STEP) | *2007, 2009, 2011*

- **Member**, MAA Committee on Undergraduate Programs in Mathematics (CUPM) | *2018–2021*

- **Member**, MAA Committee on Departmental Review | *2008–2014*

- **Member**, MAA Investment Committee | *2006–2014*

- **Steering Committee Member**, MAA PREP Workshop for Chairs: *Leading the Academic Department* | *2001–2010*

- **Member**, MAA Strategic Planning Task Force on Students | *2006–2008*

- **Member**, ad hoc Invited Addresses Committee for MathFest 2013 | *2011–2013*

- **Member**, Northeastern Section MAA 50th Anniversary Program Committee | *2004–2005*

Mentorship & Professional Session Organization

- **National Mentor**, MAA Project NExT (*New Experiences in Teaching*) | *2017–2019*

  Provided targeted career, research, and pedagogical mentorship to incoming mathematics faculty.

- **Faculty Adviser**, Simmons University Student MAA Chapter | *2004–2014*
- **Faculty Adviser**, Theta of Massachusetts Chapter of Pi Mu Epsilon | *2009–2026*
- **Organizer**, MAA Contributed Paper Sessions (*MathFest*) | *2000–2006*
  - *Promoting Integrative Learning in Math* (Knoxville) | *August 2006*
  - *Aligning Assessment Methods with Learning and Teaching for Majors* (Albuquerque) | *August 2005*
  - *Model Lessons from First-Year Calculus* (Providence) | *August 2004*
  - *Independent Learning Experiences for Undergraduates in Mathematics* (Burlington) | *August 2002*
  - *Student Active Learning* (UCLA) | *August 2000*

Institutional Service to Simmons University

- **Founder and Faculty Adviser**, Pi Mu Epsilon National Mathematics Honor Society (Massachusetts Theta Chapter), 2009–Present.

  Established the campus chapter to honor outstanding student achievement in mathematics; oversee annual student nominations, coordinate formal induction ceremonies, and mentor undergraduate members.

- **Faculty Lead**, Corequisite Mathematics Courses, HHMI / SCIENCE Collaborative (Core Faculty Team Member since 2021), 2023–Present.
- **Member**, Midpoint Review Committee, School of Sciences and Health Professions (SSHP), Spring 2026.
- **Member**, School Contract and Promotion Committee, SSHP, Spring 2026.
- **Faculty Mentor**, NASA DREAM-WSTEM Initiative, 2023–2026.
- **Faculty Member representing CDMS**, Ad Hoc Committee on STEMM Education for SSHP, 2023–2025.

- **Member**, Periodic Developmental Multi-Year Review Committee, College of Natural and Behavioral Sciences (COCIS), Spring 2024.
- **SSHP/COCIS Representative**, Undergraduate Curriculum Committee, 2019–2024.
- **Member**, Local Promotion and Tenure Committee, SSHP/COCIS (Active: Fall 2020, Fall 2021, Fall 2023), 2020–2023.
- **Member, Steering Committee, NECHE 2020 Self-Study**, 2019–2021.
- **Faculty Convener for Learning Communities**, General Education Advisory Committee, 2019–2020.
- **Review Committee Member, SURPASs Proposals** (Spring terms), 2018, 2019.
- **Search Committee Member**, Inaugural Dean of the College of COCIS (Spring), 2018.
- **Chair (2014–2015) / Member**, CAS Promotion and Tenure Committee, 2013–2017.
- **Co-Chair (2016–2017) / Member**, All-College Faculty Fiscal Affairs Committee, 2014–2017.
- **Co-Convener (2016–2017) / Member**, CAS STEM Working Group, 2015–2017.
- **Member**, Undergraduate Symposium Advisory Committee, 2014–2016.
- **Member**, All-Simmons Assessment Committee, 2014–2015.
- **Member**, Academic Technology Committee, 2000–2012.
- **Co-Chair (2004–2006) / Member**, CAS Fiscal & Budgetary Affairs Committee, 2001–2012.
- **Chair (2000–2001) / Member**, University Committee on Tenure and Appointments (Active: 1996–2001, 2005, 2007, 2011), 1996–2011.
- **Chair (2001–2003) / Member**, IT Governance Advisory Committee, 2000–2010.
- **Chair**, Information Technology Steering Committee, 2001–2003.
- **Member**, University Curriculum Committee, 1993–1996.
- **Elected Member**, Faculty Council, 1987–1992**.**

Teaching Interests & Experience

Undergraduate Courses in Pure and Applied Mathematics

Foundational & Computational Mathematics

- Calculus I: Differential Calculus
- Calculus II: Integral Calculus
- Calculus III: Multivariable Calculus
- Elementary Linear Algebra
- Discrete Mathematics
- Introductory Statistics

Advanced Core Mathematics

- Modern Algebra
- Real Analysis
- Differential Equations
- Numerical Analysis
- Mathematical Modeling
- Modern Geometries

Advanced Seminars & Special Topics

- Mathematics for Machine Learning
- Advanced Linear Algebra
- Graph and Network Theory

Interdisciplinary & Undergraduate Service Courses

- **The Art and Science of Patterns**
  Honors Program Interdisciplinary Seminar
- **Introduction to Social Network Analysis**
  First-Year Learning Community
- **Number Systems and Algebra**
  Curriculum for Elementary School Teachers

- **Geometry and Data Analysis**
  Curriculum for Elementary School Teachers

Supervision of Independent Research, Internships, & Fieldwork

Total mentorship portfolio includes 40+ undergraduate research initiatives since 2010.

Advanced Independent Research & Studies

- **Fourier Series: From Story to Structure to Space** | *Investigated the evolution of heat conduction, periodic functions, trigonometric basis functions, and linear algebra orthogonality.* | **Spring 2026**
- **Fourier Series: The Mathematics of Waves** | *Connected the mathematical and physical features of complex waveforms; modeled wave decomposition into sine waves.* | **Fall 2025**
- **The Effects of Probiotics in Reducing C. Difficile** | *Supervised interdisciplinary bio-mathematical data analysis.* | **AY 2019–2020**
- **Social Networks' Impact on Public Perception of the Romani People** | *Graph-theoretic modeling of antiziganist vs. non-antiziganist institutional networks. Conducted via the Summer Undergraduate Research Program at Simmons (SURPASs).* | **Summer 2017**
- **Information Security and Modern Cryptography** | *Supervised advanced independent student study.* | **AY 2016–2017**
- **Network Theory: Network Disruption Detection** | *Supervised computational graph theory project.* | **AY 2014–2015**
- **Network Theory: Metadata and Graph Theory to Find Superspreaders** | *Supervised algorithmic network project.* | **AY 2014–2015**
- **Continuous Advertising: A Facebook Case Study** | *Conducted via the Summer Undergraduate Research Program at Simmons (SURPASs).* | **Summer 2014**
- **Advanced Cryptography & Number Theory Modules** | *Supervised five distinct pure mathematics research tracks: RSA Cryptography, Elliptic Curve Cryptography, Orthogonal Matrices, Primality Testing, and The History of Number Theory.* | **AY 2013–2014**
- **Graph Theory & Social Network Analysis in Terrorist Organizations** | *Applied network metrics to illicit organizational structures.* | **AY 2011–2012**
- **The Mathematical Foundation of Cryptology** | *Supervised core algebraic theory studies.* | **AY 2011–2012**

- **The History of Algebra from Ancient Egypt to 19th Century Europe** | *Supervised historical-mathematical research thesis.* | **AY 2011–2012**
- **Group Theory and the Rubik's Cube** | *Supervised foundational abstract algebra study.* | **AY 2010–2011**
- **Fibonacci and Lucas Numbers: Properties and Applications** | *Supervised discrete number theory project.* | **AY 2010–2011**

Corporate, Healthcare, & Government Internships

- **Environmental Comfort Index Internship (Statistics)** | *Statistical modeling of community health impacts from urban air, noise, and light pollution across Boston-area neighborhoods.* | **Spring 2026**
- **NASA DREAM-WSTEM Interdisciplinary STEM Summer Research Experience, "Investigating Water Chemistry and Microbiology of the Muddy River in Boston, MA"** | *Faculty Research Mentor and Instructor.* | **Summer 2024, Summer 2025**
- **Boston Children's Hospital** | *Programmed SAS data structures utilizing the national Pediatric Health Information System (PHIS) dataset to track trends and interhospital variability in intravenous acetaminophen vs. opioid usage.* | **AY 2016–2017**
- **The Travelers Companies, Inc.** | *Provided corporate analytics to measure the rollout success of new enterprise business operating models.* | **AY 2015–2016**
- **Lantern Financial, LLC** | *Supervised four distinct software development and predictive planning tool placements:* | **2012–2016**
    - *Online client diagnostic database systems | AY 2015–2016*
    - *Automated tailored client surveying systems | Fall 2013*
    - *Financial planning automation engine architecture | Summer 2013*
    - *Spreadsheet master population application design | AY 2012–2013*
- **MITRE Corporation** | *Supervised three high-level federal/defense analytics placements.* | **2010–2015**
    - *Supply Chain Risk Management Quantification | AY 2014–2015*
    - *Data Mining Counter-IED Fertilizer Supply Chains in Pakistan/Afghanistan | AY 2011–2012*
    - *Rare Earth Elements & African Infrastructure Funding Patterns in China's Economy | AY 2010–2011*

- **OpSec Security** | *Modeled brand exposure risk and authored an industry white paper mapping the proliferation of illicit online pharmacies.* | **AY 2011–2012**
- **Massachusetts Department of Public Health** | *Conducted a cost-effectiveness study on Nucleic Acid Amplification screening models within the Division of Tuberculosis Prevention and Control.* | **AY 2010–2011**

Fieldwork & Educational Practicums

- **Mathematics Pedagogical Fieldwork** | *Supervised targeted classroom observation, pedagogical research, and secondary curriculum design placements across regional schools:* | **2010–2020**
    - *Manville School (Special Needs Math Pedagogies & Visualization) | AY 2019–2020*
    - *Bridgewater-Raynham High School (Secondary Math Instruction) | AY 2014–2015*
    - *Josiah Quincy Upper School (Middle School Math Curricula) | AY 2014–2015*
    - *Boston Latin School (High School Core Math Curricula) | AY 2014–2015*
    - *Diamond Middle School (Middle School Math Instruction) | AY 2010–2011*

- **Healthcare Disparities Collaborative Research** | *Partnered with Dr. Gary Gaumer (Simmons School of Management) to supervise statistical analysis of public Medicare data isolating regional, racial, and ethnic variations in clinical treatment.* | **AY 2014–2015**

- **Beyond Benign (Green Chemistry Curriculum)** | *Developed multi-disciplinary "Green Mathematics" middle school curricula mapping packaging waste and manufacturing.* | **AY 2011–2012**