DONNA L. BEERS, Ph.D.

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Education

Ph.D., Mathematics	The University of Connecticut, 1976
	Dissertation: The Isomorphism Problem for Infinite Abelian Group Rings
M.S., Mathematics	The University of Connecticut, 1971
B.A., Mathematics	The University of Connecticut, 1970
	Highest Honors, Phi Beta Kappa, University Scholar

Research Areas and Interests

Infinite abelian groups and commutative algebras
Applications to graph and network theory and risk management

Academic Appointments

Simmons University	Professor of Mathematics	1993-present
	Associate Professor of Mathematics	1986-1993
Wellesley College	Assistant Professor of Mathematics	1977-1984
Connecticut College	Assistant Professor of Mathematics	1976-1977, 1984-1986
	Instructor of Mathematics	1975-1976

Administrative Experience

Simmons University	Director, Verizon Scholars Program	2001-2003
	Director, Honors Program	2000-2002
	Chair, Mathematics & Computer Science	1993-1999

Awards

2015	The Northeastern Section of the Mathematical Association of America (MAA) Award for Distinguished College or University Teaching
2012	The Toby Sloane Award for Student Centeredness in Teaching at Simmons University
2007	The MAA Certificate of Meritorious Service, in recognition of outstanding service to the MAA and to the Northeastern Section of the MAA

Refereed Publications

1. Beers, Donna and Clifton Morrow, "Decision Trees in Action: Evacuation and Fire Safety." *SENTRY/CCICADA Educational Modules*. https://sentry.northeastern.edu/wp-content/uploads/2025/04/decision-trees-in-action-module.pdf (2025). (Accessed June 16, 2025)
2. Beers, Donna and Clifton Morrow and Yachi Wanyan. "Neighborhood Walk." *SENTRY/CCICADA Educational Modules*. https://ccicada.org/wp-content/uploads/2024/02/2023_-2Neighborhood-Walk.pdf (2024) (Accessed June 16, 2025)
3. Beers, Donna and Robert Campbell. "Community Detection with Hierarchical Clustering Algorithms." *CCICADA Education Modules*. http://ccicada.org/wp-content/uploads/2017/06/Community-Detection-with-Hierarchical-Clustering-Algorithms-Feb-3-2017.pdf. (2017) (Accessed June 16, 2025)
4. Beers, Donna and Maurino Bautista and Mary Goodloe. "Who is Really in Charge: An Application of Graph and Network Theory to Analyzing Social Networks." *CCICADA Education Modules.* http://ccicada.org/wp-content/uploads/2015/06/WhoIsReallyInChargeModule_Bautista_Beers_Goodloe_final-October-29-2015.pdf. (2015) (Accessed June 16, 2025)
5. Beers, Donna and Catherine Crawford. "Connecting Forensics and Linear Algebra." *CCICADA Education Modules.* http://ccicada.org/wp-content/uploads/2014/06/RGBDCTModule_BeersCrawford_final.pdf. (2014) (Accessed June 16, 2025)
6. Beers, Donna, Nancy Baxter Hastings, Kyle Riley. "Implementing an Efficient Departmental Review." *MAA FOCUS*, Vol. 30 No. 6 (December 2010/January 2011), 23-24. https://digitaleditions.walsworth.com/publication/?i=54560&article_id=568649&view=articleBrowser. (Accessed June 16, 2025)
7. Beers, Donna and Ellen Davidson. "A Learning Community for Pre-service Elementary Teachers: A Collaboration between Mathematics and Education." *Problems, Resources, and Issues in Mathematics Undergraduate Studies* (*PRIMUS*), Vol. 19 No. 6 (November/December 2009). 519-540. https://www.tandfonline.com/doi/full/10.1080/10511970802067574. (Accessed June 16, 2025)
8. Beers, Donna. "As Massachusetts Goes, So Goes the Nation?" *MAA FOCUS*, Vol. 29 No. 4 (August/September 2009), 24-26. https://maa.org/wp-content/uploads/2025/04/augsept09web.pdf. (Accessed June 16, 2025)
9. Beers, Donna. "Where Mathematics Meets Biology: Resources for Students." *MAA FOCUS*, Vol. 27 No. 8 (November 2007), 23-24. https://www.maa.org/sites/default/files/pdf/pubs/nov07web.pdf. (Accessed February 3, 2023)
10. 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." *Leading the Mathematical Sciences Department: A Resource for Chairs*, MAA Notes No. 64 (2004).
11. Beers, Donna. A Letter from Cambridge, Massachusetts. *Regional Review* (Federal Reserve Bank of Boston), Q2 (2001), 31-33. https://www.bostonfed.org/publications/regional-review/2001/quarter-2/letter-from-cambridge-massachusetts.aspx. (Accessed June 16, 2025)
12. Beers, Donna L. "The Role of Applications in the New Calculus." *PRIMUS*, Vol.1 (1991), 368-372.
13. Beers, Donna. "Microlabs and Cooperative Group Learning: New Ways to Teach the Calculus." *The Laboratory Approach to Teaching Calculus,* MAA Notes No. 20 (1991), 33-37.
14. 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), 65-88. https://www.researchgate.net/publication/267469798_Computing_valuated_trees. (Accessed June 16, 2025)

15. 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), 471-507. https://www.researchgate.net/publication/267092942_Finite_Valuated_p-Groups. (Accessed June 16, 2026)
16. Beers, Donna, Fred Richman, and Elbert Walker. "Group Algebras of Abelian Groups." *Rend. Sem. Mat. Univ. Padova*, 69 (1983), 41-50. http://www.numdam.org/item/RSMUP_1983__69__41_0/. (Accessed June 16, 2025)

Conference Papers and Presentations, 2000-present

1. "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. (Abstract available at https://meetings.siam.org/sess/dsp_talk.cfm?p=148729)
2. "The Dynamic Research Education Academy for Mentoring Womxn in STEM (DREAM-WSTEM) at Simmons University, Boston, Massachusetts." Faculty Poster Presentation: D. Beers, A. Saha, M. McCarty, M. Johnston, J. Lopilato. AAC&U Conference: Transforming STEM Higher Education. Arlington, VA. November 7-9, 2024.
3. Student-Faculty poster presentations; underlined are the undergraduate students
   - "Chemical Analysis Of the Muddy River." Poster presentation: Gina Gawargi, Katie Mendez-Solano, Alyssa Kuhn, Meghan Johnston, Jane Lopilato, Donna Beers, Arpita Saha. Muddy River Symposium. Boston, MA. April 8, 2025.
   - "Microbial Analysis on the Muddy River." Poster presentation: Fuma Iwakura, Madison Williams, Jane Lopilato, Meghan Johnston, Donna Beers, Arpita Saha. PITTCON International Conference. Boston, MA. March 1-5, 2025
   - "Chemical Analysis Of the Muddy River." Poster presentation: Gina Gawargi, Katie Mendez-Solano, Alyssa Kuhn, Meghan Johnston, Jane Lopilato, Donna Beers, Arpita Saha. PITTCON International Conference. Boston, MA. March 1-5, 2025
   - "Water Quality Analysis of the Muddy River and Jamaica Pond." Poster presentation: Anna Ng, Janhavi Beley, MJ Vasquez, Meghan Johnston, Jane Lopilato, Donna Beers, Arpita Saha. PITTCON International Conference. Boston, MA. March 1-5, 2025.
4. "How to Introduce Machine Learning to Early Undergraduates." Invited lecture. SENTRY Reconnect Workshop 2024, AI for Security and Security for AI: A Two-way Exploration. June 19, 2024. Mendenhall Inn. Chadds Ford, PA.
5. "Neighborhood Walk: Identifying and Protecting Soft Targets and Crowded Places." Poster. COF Teaching and Learning Conference, Teaching in the Time of AI. Friday, March 22, 2024. Emmanuel College.
6. "Developing a Course for Undergraduates on the Mathematics of Machine Learning." AMS Contributed Paper Session on Mathematics Education. Joint Mathematics Meetings. January 4-7, 2023. Boston, MA. (Abstract available at https://meetings.ams.org/math/jmm2023/meetingapp.cgi/Paper/20178)
7. "Renewing Elementary Linear Algebra Courses with Activities in Data Science." MAA Session: Cross-Curricular Applications for Pure Mathematics Courses. Virtual MAA MathFest. August 5, 2021.
8. "Visualizing the transformative role of mathematics in the fin-de-siècle culture with social network analysis." Contributed Paper Session. Fall Meeting, Northeastern Section MAA. Babson College. Wellesley, MA. November 22- 23, 2019.
9. "Visualizing the transformative role of mathematics in the fin-de-siècle culture with social network analysis." Poster. MAA MathFest. Cincinnati, OH. July 31 - August 3, 2019.

10. "Uncovering the Critical Nodes in a Supply Chain with Social Network Analysis." Poster. 2018 Colleges of the Fenway Teaching & Learning Conference: Excellence in Teaching and Scholarship. Simmons University. November 1, 2018.
11. "Uncovering Critical Nodes in a Supply Chain: Connecting Graph and Network Theory to Supply Chain Risk Management." MAA Session: Best Practices and Innovation in the Teaching of Discrete Mathematics. MAA MathFest. Denver, CO. August 1-4, 2018.
12. "Community Detection with Hierarchical Clustering Algorithms: Connecting Graph and Network Theory to Analyzing Social Networks." MAA Session: Teaching and Learning Advanced Mathematics. MAA MathFest. Chicago, IL. July 26-29, 2017.
13. "Who is Really in Charge? Connecting graph and network theory to analyzing social networks." Invited keynote. The Fifteenth Annual Preskenis Dinner/Lecture. Framingham State University. April 6, 2017.
14. "Who is Really in Charge? Connecting graph and network theory to analyzing social networks." MAA Session: Graph Theory and Other Topics. MAA MathFest. The Hyatt Regency Columbus and the Greater Columbus Convention Center. Columbus, Ohio. August 3-6, 2016.
15. "Connecting Forensics and Linear Algebra." Invited address. Pi Mu Epsilon math honor society induction. Western New England University. April 8, 2016.Mathematics Seminar. Middlebury College. March 8, 2016.Fall meeting of the Northeastern Section/MAA. Gordon College. November 21, 2015. Wentworth Institute of Technology. Applied Math Career Lecture Series. October 6, 2015.Providence College. Mathematics Department Colloquium. March 4, 2015.
16. "Connecting Forensics and Linear Algebra," with Dr. Catherine Crawford. MAA Session: Algebra and Linear Algebra. MAA MathFest. Washington, D.C. August 5-8, 2015.
17. "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." Colleagues in Conversation Series. Simmons University. Boston, MA. April 9, 2015.
18. "The summer 2014 SURPASs program and my experience as a Faculty Mentor." MAA Session: Undergraduate Research in Mathematics: How, When, Why. MAA MathFest. Portland Hilton. Portland, OR. August 7-9, 2014.
19. "Using Think-Alouds in an Undergraduate Mathematics Course for Preservice Elementary School Teachers." MAA Session: Mathematics Education I. Joint Mathematics Meetings of the American Mathematical Society and the Mathematical Association of America (JMM). Baltimore Convention Center. Baltimore, MD. January 15-18, 2014.
20. "Preliminary Report: Strengthening Student Understanding of One-to-One and Onto Functions." MAA Session: Teaching and Learning Advanced Mathematics. MAA MathFest. Madison, WI. August 2012.
21. "Strengthening the Teaching and Learning of "Function": Addressing the Classroom Challenges and Identifying Research Opportunities for Faculty."
    - MAA Session: General Contributed Papers. MAA MathFest. Lexington, KY. August 2011.
    - Invited keynote address for Project New Experiences in Teaching (NExT) session. Spring Meeting, Northeastern Section MAA. Norwich University. Northfield, VT. June 10, 2011.
22. "Preliminary Report: Strengthening Undergraduate Student Understanding of “Function”."
    - Fall Meeting, Northeastern Section MAA. Providence College. Providence, RI. November 20, 2010.
    - Invited poster. Ninth Annual Fall Teaching and Learning Conference of the Colleges of the Fenway. Emmanuel College. Boston, MA. October 28, 2010.
23. "Preparing Elementary School Teacher Candidates to Meet Changing Licensure Requirements in Mathematics." MAA Session: Innovations in Mathematics Education. MAA MathFest. Madison, WI. August 2, 2008.

24. "What are program review and self-study?" Invited lecture. MAA Professional Enhancement Program, Leading the Academic Department: A Workshop for Chairs of Mathematical Sciences Departments. Washington, D.C. June 19-22, 2008 and October 12-15, 2006."How Can We Help Students Become More FIT (Fluent in Information Technology) for Mathematics?" Spring Meeting, Northeastern Section MAA. St. Michael's College. May 31, 2008.
25. "A Learning Community for Preservice Elementary School Teachers: Principles and Practices," with Ellen Davidson. Invited poster. Workshop: Developing Teachers' Knowledge of Mathematics sponsored by the Center for Proficiency in Teaching Mathematics. Irvine, CA. January 24, 2007.
26. "Prospective Teachers Bridge Content and Pedagogy," with Ellen Davidson. MAA Session: Promoting Integrative Learning in Mathematics through Learning Communities. MAA MathFest. Knoxville, TN. August 10, 2006.
27. "A Learning Community for Prospective Elementary School Teachers," with Ellen Davidson. Spring Meeting, Northeastern Section MAA. Boston University. Boston, MA. June 3, 2006.
28. "Symmetry Patterns from Botswana." Hudson River Undergraduate Mathematics Conference. Westfield State College. Westfield, MA. April 8, 2006.
29. "Infusing Writing to Promote Students' Knowledge of Mathematics for Teaching." MAA Session: Current Issues in Mathematics Education, MAA MathFest. Albuquerque, NM. August 4, 2005.
30. "Using Writing to Promote Learning and Self-Assessment in a Mathematics Course for Prospective Elementary School Teachers." MAA Session: Getting Students to Discuss and to Write about Mathematics. Joint Mathematics Meetings of the American Mathematical Society and the Mathematical Association of America. Atlanta, GA. January 6, 2005.
31. "Integrating Learning, Assessment, and Extracurricular Activities." MAA session: Extracurricular Mathematics. MAA MathFest. Providence, RI. August 12, 2004.
32. "Guidelines, Timelines, and Tools for Self-Assessment: Students Get Set for Mathematics Conference." Invited address. Spring Meeting, Northeastern Section MAA. Roger Williams University. Newport, R.I. June 4, 2004.
33. "The Convergence of Mathematics and Art in *The Da Vinci Code*."
    - Fall Meeting, Northeastern Section MAA. Worcester Polytechnic Institute. Worcester, MA. November 20, 2004.
    - The Hudson River Undergraduate Mathematics Conference. Mount Holyoke College. South Hadley, MA. April 3, 2004.
34. "The Role of Mathematics: Past, Present, and Future Grand Challenges." Invited Pi Mu Epsilon address. Providence College, Providence, RI. April 23, 2003.
35. "What Drives Mathematics? How Does Mathematics Drive Innovation?" Invited MAA Student Lecture keynote. Joint Mathematics Meetings. Baltimore, MD. January 17, 2003.
36. "An Interdisciplinary Honors Seminar: The Art and Science of Patterns." MAA Session: Integrating Mathematics and Other Disciplines. Joint Mathematics Meetings. San Diego, CA. January 7, 2002.
37. "Outside Academia: A Sabbatical in Industry." Joint Mathematics Meetings. New Orleans, LA. January 11, 2001.
38. "A Sabbatical at MathSoft: Launching Mathcad 2000 and a Learning Site." Invited address. Fall Meeting, Northeastern Section MAA. Providence College. Providence, RI. November 17, 2000.
39. "Experimenting with Student Active Learning in a Course for Prospective Elementary School Teachers." MAA Session: Student Active Learning. MAA MathFest. UCLA. Los Angeles, CA. August 4, 2000.

Workshops, Panels, Minicourses, 2000-present

1. Panel co-organizer (with Clifton Morrow). *Engaging Students with the Mathematics of Soft Target Risk Assessment*. 2024 MAA MathFest. Indianapolis, IN. August 7-10, 2024.
   - Panelist presentation: "Neighborhood Walk: A Citizen Science Project." August 8, 2024.
2. Selected participant. *SENTRY/Reconnect Workshops* for mathematics and computer science faculty. Sponsored by the Soft Target Engineering to Neutralize the Threat Reality (SENTRY), a Department of Homeland Security Center of Excellence at Northeastern University and the Command, Control, and Interoperability Center for Advanced Data Analysis (CCICADA), a Department of Homeland Security Center of Excellence at Rutgers University.
   - SENTRY Reconnect Workshop 2024: "AI for Security and Security for AI: A Two-way Exploration." Mendenhall Inn, Chadds Ford, PA. June 16-19, 2024.
   - SENTRY Reconnect Workshop 2023: "Risk Assessment." Omni Hotel. Providence, R.I. June 18-23, 2023.
   - CCICADA Reconnect Workshop 2016: "Mathematical and Computational Tools for Cyber Security." U.S. Military Academy. West Point, NY. June 12-18, 2016.
   - CCICADA Reconnect Workshop 2015: "Mathematical and Computational Tools for Social Networks with Applications to Homeland Security." Rochester Institute of Technology. Rochester, NY. June 14-20, 2015.
   - CCICADA Reconnect Workshop 2014: "Forensics." Massachusetts Maritime Academy. Buzzards Bay, MA. June 1-7, 2014.
3. Panelist. *STEM Research and Internships @Simmons*. Co-presentation with Rachel Beaulieu (Data Science & Analytics major, Class of 2022), "Singular Mathematics Powers Research in Big Data." Simmons University. November 17, 2021.
4. Attendee. *[Online] MSRI Institute Workshop on Mathematics and Racial Justice.* Attended the following plenary talks:
   - "Seeking Racial Equity and Social Justice in Mathematics Teaching and Learning." Robert Berry (University of Virginia). June 9, 2021.
   - "Designing [Algorithms] for Equity." Sharad Goel (Stanford University). June 10, 2021
   - "Sources and consequences of algorithmic bias." Maria De-Arteaga (The University of Texas at Austin). June 10, 2021.
   - "The Pandemic [of Healthcare Disparities] Within the Pandemic." Darius McDaniel (Leidos). June 11, 2021.
   - "Teaching to Transgress: Mathematics as a tool for social justice." Brittany Mosby (Tennessee Higher Education Commission). June 16, 2021.
5. Participant. *Proposal House*, a proposal-writing workshop organized and hosted by the Inaugural Dean of the College of Organizational, Computational, and Informational Sciences (COCIS) at Simmons University, Marie desJardins, for faculty in COCIS. June 3-4, 2019.
6. Participant. *Learning Community Course Design Institute*, sponsored by the Simmons Center for Excellence in Teaching. June 13-14, 20, 2019; June 18-20, 2018, Simmons University.
7. Participant. Project Kaleidoscope (PKAL) workshop, *Faculty Development for Inclusive Excellence in STEM*. Wheaton College. January 9, 2019.
8. Invited participant. New England Regional Meeting on Upper-Division Math Pathways, a workshop of the *Transforming Post Secondary Education in Math* (TPSE Math) initiative, sponsored by Carnegie Corporation of New York, the Alfred P. Sloan Foundation, and the National Science Foundation. Worcester Polytechnic Institute. June 11-12, 2018.

9. Invited faculty mentor. "Career Mentoring Workshop," a mentoring program for women doctoral candidates in mathematics. Wheaton College, Norton, MA. June 7, 2016.
10. Invited panelist. Command, Control, and Interoperability Center for Advanced Data Analysis (CCICADA) Retreat. "CCICADA's Accomplishments: Education." Rutgers University (Busch campus). Piscataway, NJ. April 29, 2016.
11. Invited panelist. "The Mystery of the Disappearing Woman: Keeping Women and Girls in the STEM Pipeline." Campus celebration. Simmons University. September 11, 2015.
12. Organizer and leader, with Richard Gillman. MAA Minicourse. "Developing Departmental Self-Studies."
    - 2015 Joint Mathematics Meetings. San Antonio, TX. January 11, 13, 2015.
    - 2009 Joint Mathematics Meetings. Washington, D.C. January 6, 8, 2009.
13. Organizer and leader, with Nancy Baxter Hastings. MAA Minicourse. "Developing Departmental Self-Studies."
    - 2008 Joint Mathematics Meetings. San Diego, CA. January 6, 8, 2008.
    - 2010 Joint Mathematics Meetings. San Francisco, CA. January 13, 15, 2010.
14. Invited Panelist. "Celebrating Women in STEM Fields." Sponsored by the Simmons University Student Government Association. Women's College Week. Simmons University. March 20, 2013.
15. Invited panelist. "Serving as an Outside Consultant." MAA Minicourse: Preparing to be an External Consultant in the Mathematical Sciences. Joint Mathematics Meetings (JMM). Boston, MA. January 4-7, 2012.
16. Invited panelist. "New England's Recipe for Stronger Mathematics in Elementary School." Fall Meeting, Northeastern Section MAA, Western New England College. November 20-21, 2009.
17. Invited panelist. "Putting Together Pre-Tenure Review Materials." MAA Project New Experiences in Teaching (NeXt). 2009 MAA MathFest, Portland, OR. August 5, 2009.
18. Invited panelist. "What algebraic skills and habits are useful for high school graduates to ensure success in post-secondary institutions?" Algebra II Symposium sponsored by the Education Development Center, Inc., and the Massachusetts Department of Education, Tyngsboro, MA. November 15, 2007.
19. Panel organizer and co-chair (with Kyle Riley, South Dakota School of Mines and Technology). "The Departmental Self-Study: How ensure that it is purposeful?" 2007 MAA MathFest, San Jose, CA. August 3-5, 2007.
20. Invited workshop participant. Developing Teachers' Knowledge of Mathematics. Center for Proficiency in Teaching Mathematics (CPTM), Irvine, CA, January 24-25, 2007 and the University of Michigan, Ann Arbor, MI. June 5-12, 2004.
21. Invited panelist. MAA Project NeXt panel: Creating and Maintaining Active Math Clubs. 2007 JMM, New Orleans, LA. January 5-8, 2007.
22. Invited workshop leader. MAA PREP Consultants Workshop: "Developing Internal Departmental Self-Studies for Mathematical Sciences." Dickinson College. Carlisle, PA. June 11-14, 2006.
23. Invited workshop participant. "Developing Resources for External Evaluators of Mathematical Science Departments: Guidelines, Case Studies, and Training Materials." MAA PREP Consultants Workshop. Dickinson College. Carlisle, PA. June 15-18, 2005.
24. Invited workshop leader. "Frieze patterns: Designing Beautiful Tablescapes - - with Geometry!" with Simmons University students Karyn Deptula, Carolyn Farmer, Hannah Kimball. Sonya Kovalevsky High School Math Day. Simmons University. Boston, MA. March 31, 2006.
25. Invited workshop participant. "Video Analysis Work Session: Using TIMSS Videos to Improve Learning of Mathematics." Research for Better Schools and the Johnson Foundation. Wingspread Conference Center. Racine, WI. August 14-17, 2004.
26. Invited panelist. "Defining Leadership for Mathematical Sciences Department Chair." MAA PREP program, *Leading the Academic Department: A Workshop for Chairs of Mathematical Sciences*

Departments. Reston, VA, June 19-22, 2003; Towson State University, Towson, MD. June 27-29, 2002.

27. Invited panelist. "Tiling as a Bridge between Art and Science." Fourth Annual Symposium: Mathematics & Culture, Boston University. Boston, MA. March 29, 2001.

Grant Activities

1. Award: Clare Boothe Luce STEM Community Grant from the Clare Boothe Luce Program for Women in STEM of the Henry Luce Foundation, a planning grant to support the development of equitable STEM ecosystems for women and girls in the Boston community.
   Role: Project Director.
   Status: January 1 – October 31, 2025.
2. Award: Clare Boothe Luce (CBL) Program for Women in STEM of the Henry Luce Foundation, *STEM Enrichment Program (SEP*), a grant to support a Clare Boothe Luce Professor who will lead a CBL faculty team to design and implement a new STEM 100 interdisciplinary course to be offered beginning in Fall 2026. STEM 100 is a corequisite course for first-year science students that introduces these students to a particular real-world problem and acquaints them with different tools and approaches from across the STEM disciplines for solving it. STEM 100 addresses gaps (math, scientific literacy, etc.), and what it means to be a STEM major.
   Role: Core Faculty Member representing the mathematics discipline.
   Status: 2025-2029.
3. Award: Howard Hughes Medical Institute (HHMI) Inclusive Excellence 3 (IE 3) grant, *Increasing Capacity to Support Equitable and Inclusive Learning Environments for Introductory-level STEM Students across the LCC2 Learning Community*, a project to build capacity for inclusion by reforming the content of introductory science courses, $378,000.
   Role: Core team member representing the mathematics discipline.
   Status: 2021-2025.
4. Award: NASA Minority University Research and Education Project (MUREP) grant, *Dynamic Research Education Academy for Mentoring Women in STEM (DREAM-WSTEM*), a program to provide a tiered and holistic mentorship experience for STEM majors throughout their undergraduate journey.
   Role: Core faculty mentor representing the mathematics discipline, $499,666.
   Status: 2023-2025.
5. Simmons College Presidential Diversity and Inclusion Advisory Council (PDIAC) faculty grant, *Celebrating Women in Mathematics, Past and Present,* a project with mathematics majors that included a program of guest speakers, student team projects, and digital and physical displays for Women's History Month, $1000. Spring 2014.
6. Award: Grant from the Verizon Foundation, the *Verizon Scholars Program*, a mentoring and web training program at Simmons University for high school girls from the Boston Public School system, $125,000.
   Role: Director.
   Status: 2001-2003.

Professional Affiliations

- The Mathematical Association of America (MAA)
  Governor, Northeastern Section MAA 2000-2003
  Chair, Northeastern Section MAA 1993-1995
  Vice-Chair, Northeastern Section MAA, 1992-1993
- The American Mathematical Society (AMS)
- Society for Industrial and Applied Mathematics (SIAM), 2025-present

Selected Professional Service Activities

- MAA Carl B. Allendoerfer Award Committee 2021-2025
- External program reviewer, the Mathematics Program
  - Ithaca College March, 2023
  - Saint Michael's College March, 2015
  - Framingham State College March, 2010
  - Stonehill College October, 2008
  - K-12 Mathematics in Weston, MA Public Schools March, 2007
    Chair of the External Visiting Team
- Editorial Board Member
  - PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies 2013-2022
  - MAA Carus Monographs 2013-16, 2010-2013
  - MAA Anneli Lax New Mathematical Library 2005-2008
  - MAA Dolciani Mathematical Expositions 2002-2005, 1999-2002
  - The American Mathematical Monthly 1996-2001
  - Mathematics Magazine 1992-1995
- MAA Project NExT mentor to new mathematics faculty 2017-present
- MAA Committee on Undergraduate Programs in Mathematics 2018-2021
- Northeast Section MAA Meritorious Service Award Committee Fall, 2016
  Chair of the Committee
- MAA Committee on Departmental Review 2011-2014, 2008-2011
- Member, The Applied Mathematics Industrial Professional Advisory Committee, Wentworth Institute of Technology Spring 2014-present
- MAA Investment Committee 2010-2014, 2006-2010
- Member, ad hoc Invited Addresses Committee for MathFest 2013 October 2011- January 2013
- National Science Foundation review panelist for the STEM Talent Expansion Program (NSF/STEP) Fall 2011, 2009, 2007
- Member, Massachusetts Board of Higher Education Commissioner's Working Group on Mathematics Diagnostic instruments for elementary teacher preparation Fall 2009-Fall 2010
- MAA Strategic Planning Task Force on Students 2006-2008
- MAA Chauvenet Prize Committee 2004-2008
  Chair of the Committee 2005-2006
- Adviser, Simmons University Student MAA Chapter 2004-2014
- Organizer, MAA Contributed Paper Sessions 2000-2006

  - Promoting Integrative Learning in Math. MathFest. Knoxville. August 10, 2006
  - Aligning Assessment Methods with Learning and Teaching for Majors. Albuquerque. August 5, 2005
  - Model Lessons from First-Year Calculus. MathFest. Providence. August 13, 2004
  - Independent Learning Experiences for Undergraduates in Mathematics. MathFest. Burlington. August 1-2, 2002
  - Student Active Learning. MathFest. UCLA. August 4, 2000
- Northeastern Section MAA 50th Anniversary Program Committee 2004-2005
- Steering Committee for MAA PREP Workshop for Chairs: Leading the Academic Department 2001-2010
- Northeastern Section MAA Award for Distinguished College or University Teaching Committee 2001-2003
- MAA Hasse Prize Committee 2000-2003

Committee Service at Simmons University, AY 2000-2001 to present

- AI Academic Working Group 2025-present
  Member, Appointed by Faculty Senate
- Undergraduate Curriculum Committee 2021-2024, 2019-2021
  COCIS Representative
- Ad Hoc on STEMM Education for SSHP
  Member, Faculty member from CDMS Spring 2023-present
- Howard Hughes Medical Institute (HHMI) Spring 2021 - present
  Member, Core faculty team
  Faculty lead, Curriculum Project team 2023-present
- NASA DREAM-WSTEM Spring 2023 - present
  Member, Faculty mentor
- New England Commission of Higher Education 2019-2021
  2020 Self-Study Steering Committee
- Review Committee for SURPASs proposals Spring 2019, Spring 2018
- General Education Advisory Committee 2019-2020
  Faculty Convener for Learning Communities
- Search Committee for the inaugural Dean of the College of Organizational, Informational, and Computational Sciences Spring 2018
- College of Arts & Sciences (CAS) STEM Working Group 2015-2017
  Co-Convener of the Working Group 2016-2017
- Undergraduate Symposium Advisory Committee 2014-2016
- All College Faculty Fiscal Affairs Committee January 2014-2017
  Co-Chair of the Committee Spring 2016 - 2017
- CAS Promotion and Tenure Committee 2013-2017
  Chair of the Committee 2014-2015
- All Simmons Assessment Committee 2014-2015
- Committee on Tenure and Appointments 2011, 2007, 2005; 1996-2001
  Chair of the Committee 2000-2001
- CAS Fiscal & Budgetary Affairs Committee 2001-2012
  Co-Chair of the Committee 2004-2006

- Academic Technology Committee 2000-2012
- Information Technology Governance Advisory Committee 2000-2010
  Chair of the Committee Summer 2001- Fall 2003
- Information Technology Steering Committee 2001-03
  Chair of the Committee 2001-03
- Curriculum Committee 1993-96
- Faculty Council 1987-92

Teaching Experience

Courses in the Undergraduate Mathematics Major

- Introductory Statistics
- Calculus I Differential Calculus
- Calculus II Integral Calculus
- Single Variable Calculus (differential and integral calculus)
- Calculus III Multivariable Calculus
- Differential Equations
- Discrete Mathematics
- Modern Geometries
- Elementary Linear Algebra
- Mathematical Modeling
- Modern Algebra
- Numerical Analysis
- Real Analysis
- Special Topics Seminars
  - Mathematics for Machine Learning
  - Advanced Linear Algebra
  - Graph and Network Theory

Undergraduate Service Courses

- Introduction to Social Network Analysis (Learning Community)
- The Art and Science of Patterns (Honors Program Interdisciplinary Seminar)
- Number Systems and Algebra for Elementary School Teachers
- Geometry and Data Analysis for Elementary School Teachers

Graduate Course for the Simmons University School of Management

- Quantitative Analysis

Independent Studies, Internships, and Fieldwork Supervised, 2010-present

AY 2019-2020

- Independent Study: *The Effects of Probiotics in Reducing C. Difficile*
- Fieldwork at the Manville School
  Project: To learn the elementary school mathematics curriculum and to observe mathematics teaching practices (visualizations, rhymes, games, individualized teaching, small group teaching) for special needs children.

2017 Summer SURPASs

- *Title*: Non-Antiziganist and Antiziganist Social Networks' Impact on Public Perception of the Romani People
  Project: To study the public perception of the Romani people and how it may be influenced by two large social networks: the antiziganist network, composed of institutions that have discriminated against and racialized the Romani people; and the non-antiziganist network, made up of institutions that denounce antiziganism.

AY 2016-2017

- *Internship at Boston Children's Hospital*
  Project: To use a national administrative dataset called PHIS along with SAS programming, in order to: (1) describe trends in intravenous acetaminophen utilization and changes over time in patients at major U.S. children's hospitals; (2) describe trends by two indications, fever vs. pain and All Patients Refined Diagnosis Related Groups (APR-DRG); (3) identify conditions that have the most interhospital variability in the use of intravenous acetaminophen; (4) describe trends in intravenous acetaminophen versus opioids utilization over time, looking only at the top 20 APR-DRGs that have the most intravenous acetaminophen encounters.
- Independent study. The connections between information security and modern cryptography.

AY 2015-2016

- *Internship at The Travelers*
  Project: To provide analytics to measure the success of the ongoing roll-out of the new Operating Model to Business; to support planning and execution of roll-out strategies.
- *Internship at Lantern Financial, LLC*
  Project: Working as a programmer/ developer to develop an online form/ questionnaire and database which will help the company to provide a new level of service to its clients.

AY 2014-2015

- Independent study: How to Apply Metadata and Graph Theory to Network Analysis to Find Superspreaders
- Independent study: Network Disruptions: A Mathematical Analysis
- *Internship at MITRE Corporation*
  Project: To investigate supply chain risk management and determine whether or not it is possible to quantify risk.
- Fieldwork at Bridgewater-Raynham High School to observe secondary school mathematics instruction
- Fieldwork at the Josiah Quincy Upper School to observe and contribute to middle school mathematics instruction
- *Fieldwork with Dr. Gary Gaumer of the Simmons University School of Management.*
  Project: To collaborate on a research paper based on public Medicare data. The topic of the paper is regional variations in racial and ethnic health disparities and treatment.
- Fieldwork at the Boston Latin School to learn the high school mathematics curriculum and to observe high school mathematics teaching practices.
- **2014 Summer SURPASs (Summer Undergraduate Research Program at Simmons)**
  Independent study: A Facebook Case Study Observing the Success of Continuous Advertising on Product Popularity

AY 2013-2014

- Independent study: RSA Cryptography
- Independent study: Elliptic Curve Cryptography
- Independent study: Orthogonal Matrices
- Independent study: The History of Number Theory
- Independent study: Primality Testing
- *Summer 2013 internship at Lantern Financial, LLC*
  Project: To advance ongoing work on creating materials and systems to increase the pace of financial planning development. To find and automate common processes and functions. To test current and future processes and find ways to improve them.
- *Fall 2013 internship at Lantern Financial, LLC*
  Project: As computer programmer, to develop an online survey for clients to complete which will be used to tailor a financial plan to the individual client.

AY 2012-2013

- *Internship at Lantern Financial, LLC*
  Project: As computer programmer to contribute to the ongoing project of improving efficiency by developing an app that will populate a master spread sheet and create a financial plan.

AY 2011-2012

- Independent study: The Mathematical Foundation of Cryptology
- Independent study: Graph Theory and the Use of Social Network Analysis in Linking the Members of Terrorist Organizations
- Independent study: The History of Algebra from Ancient Egypt to 19th Century Europe
- *Internship at OpSec Security*
  Project: To assist in the research and writing of a white paper to assess the exposure to and developments in online pharmacies over the past year. To prepare sales support materials that quantify risk for brands across all sectors. To use a model developed by OpSec to quantify risk. To work with the account management team in support of any internet investigations and test purchases.
- *Internship at MITRE Corporation*
  Project: To contribute to a case study on fertilizer production in Pakistan which entailed using data mining tools to research the chain from production of ammonium nitrate in Pakistan through its use in roadside bombs in Afghanistan.
- *Internship at Beyond Benign*
  Project: To develop two, multi-disciplinary math lessons, “All that Packaging” and “Manufacturing" to be piloted in middle school classrooms. The overall goal is to help strengthen middle mathematics by integrating green chemistry concepts into a “green mathematics” curriculum.

AY 2010-2011

- Independent study: Fibonacci and Lucas Numbers: Their Properties and Applications
- Independent study: Group Theory and the Rubik’s Cube
- *Internship at MITRE Corporation*
  Project: To research China’s economy, including state-owned enterprises (SOE), and from the SOEs to identify Chinese companies related to rare earth elements. Also, to investigate Chinese funding going into Africa, the different categories of funding, and trends and patterns of China's projects.

- *Internship at the Massachusetts Department of Public Health: Division of Tuberculosis Prevention and Control*
  Project: To contribute to a study investigating the cost effectiveness of using the Nucleic Acid Amplification method for detecting whether an individual has been exposed to the TB bacterium.
- Fieldwork at the Diamond Middle School to observe and contribute to middle school mathematics instruction.