MINDY B. CAPALDI
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EDUCATION

2010 Ph.D. in Mathematics, North Carolina State University
Advisor: Dr. Tom Lada
Dissertation: Developing a New L_∞ Algebra Using Symmetric Brace Algebras
2008 M.S. in Mathematics, North Carolina State University
2006 B.S. in Mathematics & B.A. in History, Georgetown College

PROFESSIONAL EXPERIENCE

2023-Present Associate Dean of Faculty Support and Development, Professor of Mathematics & Statistics, James Madison University, Harrisonburg, Virginia
2021-2023 Program Director (Visiting Scientist, Engineer, and Educator), National Science Foundation, Division of Undergraduate Education, Directorate for STEM Education
2017-2023 Associate Professor of Mathematics and Statistics, Valparaiso University, Valparaiso, Indiana
2011-2017 Assistant Professor of Mathematics and Statistics, Valparaiso University
2010-2011 Visiting Assistant Professor of Mathematics and Statistics, Valparaiso University

RESEARCH INTERESTS

Mathematics Education, Faculty Development and Mentoring, Scholarship of Teaching and Learning with a focus on memory science and active learning

AWARDS, HONORS, and FELLOWSHIPS

2023 Special Act Award, NSF
2022 Special Act Award, NSF
2022 Special Act Award, NSF
2019 Summer Teaching and Learning Fellowship, Valparaiso University
2011-2012 Project NExT Fellowship, Mathematical Association of America (MAA)
2009-2010 Preparing the Professoriate Program Participant and Scholarship, NCSU
2006 Summa Cum Laude, Georgetown College
2002-2006 Honor's Scholar, Georgetown College

PUBLICATIONS

Journal Articles

- Capaldi, Mindy, "Finite Mathematics Course Notes," *Journal of Inquiry-Based Learning of Mathematics*, 57 (April 2022): 1-92.
- Capaldi, Mindy, Watters, Michael, Bugajski, Kristi, Slattery, Michelle, and Dahlke-Goebbert, Bonnie, "Improving the Recruitment and Retention of Commuter STEM Students," SPUR, 6.1 (2022): 14-22.
- Capaldi, Mindy, "What Definitions are Your Students Learning?," *PRIMUS*, 30.4 (2019): 400-414.

- Beagley, Jonathan and Capaldi, Mindy, "Using Cumulative Homework in Calculus Classes," *PRIMUS,* 30.3 (2019): 335-348.
- Capaldi, Mindy, "The Use of Exam Notes in an Online Mathematics Course," *Journal of Educators Online,* 16.2 (2019).
- Capaldi, Mindy, "Mathematics Versus Statistics," *Journal of Humanistic Mathematics,* 9.2 (2019): 149-156.
- Capaldi, Mindy and Kolba, Tiffany, "Carcassonne in the Classroom," *College Mathematics Journal*, 48.4 (2017): 265-73.
- *Lezark, Kathryn and Capaldi, Mindy, "New Findings in Old Geometry: using triangle centers to create similar or congruent triangles," *Minnesota Journal of Undergraduate Mathematics*, 2.1 (2016): 1-12.
- Beagley, Jonathan and Capaldi, Mindy, "The Effect of Cumulative Tests on the Final Exam," *PRIMUS,* 26.9 (2016): 878-888.
- Capaldi, Mindy, "An Analysis of Proof-Based Final Exams," In *Conference Proceedings of RUME XVIII,* edited by T. Fukawa-Connely, N. Infante, K. Keene, and M. Zandieh (2015): 112-119.
- Capaldi, Mindy, "Including Inquiry-Based Learning in a Flipped Class," *Special Issue on Flipped Classes: Reflections on Implementation* in *PRIMUS*, 25.8 (2015): 736-744.
- Capaldi, Mindy, "Non-traditional Methods of Teaching Abstract Algebra," *PRIMUS,* 24.1 (2014): 12-24.
- Capaldi, Mindy, "A Study of Abstract Algebra Textbooks," In *Conference Proceedings of RUME XV,* edited by S. Brown, S. Larsen, K. Marrongelle, and M. Oehrtman, 1 (2012): 83-93.

Books

- Capaldi, Mindy ed. (2021), *Teaching Mathematics Through Games,* (Vol. 65). AMS/MAA Classroom Resources Materials Series.
    - Podcast about book: https://newbooksnetwork.com/teaching-mathematics-through-games

Book Chapters

- Capaldi, Mindy and *DeRolf, Timothy, "Get in the 'Sonne: Using Carcassonne to explore mathematics," In M. Capaldi (Ed.) *Teaching Mathematics Through Games*, 167-175, AMS/MAA Classroom Resources Materials Series.
- Capaldi, Mindy, "Teaching with Two-Column Proofs," In *MAA Notes: Beyond Lecture: Techniques to Improve Student Proof-Writing Across the Curriculum*, edited by R. Schwell, A. Steurer, & J. Vasquez, Mathematical Association of America, Washington, DC, (2016): 59-64.
- Capaldi, Mindy, "Inquiry-Based Learning in Mathematics," In *Inquiry-Based Learning for Science, Technology, Engineering, and Math (STEM) Programs: A conceptual and practical resource for educators*, edited by P. Blessinger & J. Carfora, in series *Innovations in Higher Education Teaching and Learning*, Emerald Group Publishing Limited, 4 (2015): 281-297.

Published Book Reviews

- Capaldi, Mindy, review of *Data Science and Predictive Analytics: Biomedical and Health Applications using R*, by I. Dinov, *International Statistical Review,* 87.1 (2019): 181-182.
- Capaldi, Mindy, "Mathematics Education Gets Its Own History Handbook," review of *Handbook on the History of Mathematics Education*, edited by A. Karp and G. Schubring, *MAA FOCUS,* 36.3 (2016): 34-35.

Undergraduate Research Projects Supervised

- Eric Burkholder, Timothy DeRolf, Gabe Fragoso, and Thomas Shomer, Mathematics of Chinese Checkers, 2019-2020.
- Timothy DeRolf, Mathematics of Carcassonne, summer 2019.
- Jonathan Metcalfe, Junta Callahan, and Austin Schnoor, Gerrymandering Project, 2018-2019.
- Alexander Bruno and Lindsey Arndt, Pedagogy project to develop materials for Math 124: Finite Mathematics, summer 2017.
- Kathryn Lezark, "New Findings in Old Geometry," Spring 2016.
- Nathan Underwood, Pedagogy project to develop materials for Math 314: Elements of Geometry, summer 2015.
- Brooke LeFevre, "Study Habits of Mathematics Students," Fall 2014.
- Michelle Kleckner, Alexandra Paradine, Kathryn Merkling, "Investigating Prerequisite Grade Requirements in the Calculus Sequence," 2012-2013.

EXTERNAL GRANTS

2021 National Science Foundation (NSF) Award No. 2120720, *PI,* "Transforming the Teaching and Learning of Foundational Mathematics," $299,226 (finalized after Program Director position began).

2021 NSF Award No. 2129206, *co-PI,* "Understanding and Evaluating Practices for Integrating Commuter Students in Science, Technology, and Mathematics through Mentoring, Undergraduate Research, and Social Supports," $1,500,000 (finalized after Program Director position began).

2020 NSF Award No. HRD-1826719 with Chicago State University under CSU Grant No. 53112, Louis Stokes Midwest Regional Center of Excellence, *PI,* "Basic Needs and Responsibilities Assessment of STEM and non-STEM College Students," $5,000.

2016 NSF Award No. 1564855, *co-PI,* "EPIC: Establishing Practices Integrating Commuter Students," $999,991 (2016-2021), Michael Watters (lead PI), Mindy Capaldi, Karl Schmitt, Kristi Bugajski, Bonnie Dahlke-Goebbert.

2014 Educational Advancement Foundation (EAF) grant to develop Finite Mathematics as an inquiry-based course, $2500, 2014.

SERVICE

Service to the Profession

2008-Present	Member	Mathematical Association of America (MAA)
2016-Present	Member	Special Interest Group of the MAA on Inquiry-Based Learning
2012-Present	Member	Special Interest Group of the MAA on Research in Undergraduate Education
2020-2021	Congressperson	MAA Congress, representing the Indiana Section
2018-2023	Member	Council on Undergraduate Research (CUR)
2020-2021	Member	MAA Comm. On Early Career Mathematicians
2019-2021	Faculty Liaison	Louis Stokes Midwest Regional Center of Excellence
2015-2020	Member	MAA Comm. on the Teaching of Undergraduate Mathematics
2016-2017	Member	National Council of Teachers of Mathematics
2020. 2018	Panelist	NSF Review Panel

2019-2020	Assoc. Editor	MAA Reviews (responsible for Mathematics Education reviews)
2015-2018	Member	Distinguished Service Award Selection Comm. for the INMAA (Chair 2018)
2011-2015	Secretary	Indiana MAA Section NExT
2012-2013		Northwestern Indiana Science and Engineering Fair Judge
2012, 2014		American Women in Mathematics Essay Judge
2011-2016		Young Mathematicians Conference Judge
2012-2019		Assisted with MathCounts competition
Various	Reviewer	PRIMUS, Educational Studies in Mathematics, RUME Conference, Journal of Humanistic Mathematics, Mathematics, Mathematics Magazine, International Journal of STEM Education

Service to the NSF

2021-2023	S-STEM Program Co-Lead
2022-2023	IPA Hiring Committee
2021-2022	Rotator Working Group

2021-Present	Scholarships in STEM (S-STEM) Program Co-Lead
2021-Present	Lead for STEM/Noyce Research Experiences Dear Colleague Letter/Review
2021-Present	Rotator Working Group
2021-Present	Liaison with Department of Education for Math Summit planning

Service to Valparaiso University

2017-2021	Educational Policy Committee (Chair 2018-2021)
2017-2021	Student Support Coordinator for the MST Department
2018-2021	Faculty Senate Executive Committee
2015-2021	Faculty Senator representing the MST and CIS departments
2018-2021	Faculty Advisor for the Alpha Gamma Delta sorority
2016-2021	MST Department Library Liaison
2019-2020	University Council Executive Committee
2019-2020	President-appointed Compensation Working Group
2019	Online Graduate Expansion Team
2014-2019	VU Faculty Grievance Committee Member
2016-2017	University Council Vice-Chair
2015-2016	VU Student Scholarship Task Force Co-Chair
2015-2016	Persistence and Success Program Mentor
2014-2017	CAS Scholarship & Advising Committee Member
2013-2017, 2020	Mathematics Major Advisor

PRESENTATIONS AND OUTREACH

Invited Talks

- "The Politics and Mathematics of Redistricting," Math and the Public Good Series, Bellarmine University, Louisville, KY, February 6, 2018.
- "The Millennium Problems," Taylor University Mathematics Banquet, Marion, IN, April 25, 2016.

Panels/Sessions Organized

- Co-Organized MathFest Contributed Paper Session "Teaching Mathematics through Games," Cincinnati, OH, August 2, 2019.
- Co-Organized MathFest Contributed Paper Session "Enhance Your Teaching through Best Practices That Align with the Instructional Practices Guide," on behalf of the MAA CTUM Committee, Cincinnati, OH, August 1-2, 2019.
- Student Workshop on Gerrymandering, IN-MAA Section Meeting, Indianapolis, IN, April 6, 2019.
- Co-organized panel "Writing in Mathematics Classes," for Section NExT, MAA-IN Section Meeting, University of Indianapolis, October 22, 2011.
- Co-organized panel "Scholarship of Teaching and Learning," for Project NExT, Joint Mathematics Meetings, Lexington, KY, August 2-3, 2011.

Selected Presentations

- "The Role of SoTL in NSF Grant Proposals and Projects," Joint Mathematics Meeting, Boston, MA, January 2023.

- "Jump Starting Your Scholarship Program," MathFest/Project NExT Workshop, Philadelphia, PA, August 5, 2022.
- "Demystifying the NSF," American Mathematical Association of Two-Year Colleges, Webinar, Feb. 25, 2022.
- "College Students' Basic Needs Assessment- Food and Housing Insecurities at Private, Midwest Institutions," LSMRCE virtual conference, October 22, 2021.
- "Improving STEM Retention and Commuter Engagement through Research, Cohorts, and Faculty Mentoring," AAC&U STEM Conference, Atlanta, GA, November 9, 2018.
- "When mathematics and politics collide: measuring gerrymandering," Indiana MAA Section Meeting, Valparaiso, IN, March 24, 2018.
- "Assessing Pre-Class Assignments in a Flipped Class," JMM, Seattle, WA, January 6, 2016.
- "An Analysis of Proof-Based Final Exams," RUME Conference, Philadelphia, PA, February 21, 2015.
- "Flipping Calculus II: Did it improve this infamous course?," MathFest, Portland, OR, August 7, 2014.
- "What Did I Do Wrong (or Right)?," Legacy of R.L. Moore Conference, Denver, CO, June 18, 2014.
- "The 2-Column Method: a better way to teach proofs?," MathFest, Hartford, CT, August 2, 2013.
- "Transitioning to Teaching Abstract Algebra as IBL," MathFest, Madison, WI, August 3, 2012.
- "A Study of Abstract Algebra Textbooks," RUME Conference, Portland, OR, February 24, 2012.
- "A Semi-Flipped Finite Mathematics Class: is it possible and can it be successful?," Joint Mathematics Meetings, Boston, MA, January 5, 2012.
- "Teaching Proofs in Abstract Algebra: How important are proof structure, group work, and student presentations?," Joint Mathematics Meetings, New Orleans, LA, January 8, 2011.
- "L-infinity Algebras and Symmetric Braces," Joint Mathematics Meetings, San Francisco, CA, January 14, 2010.

Poster Presentations

- "S-STEM #1564855 Improving STEM Retention and Commuter Engagement through Research, Cohorts, and Faculty Mentoring" Michael Watters, Mindy Capaldi, Kristi Bugajski, Karl Schmitt, & Bonnie Dahlke Goebbert. NSF S-STEM Symposium, Washington DC, Sept. 12. 2019.
- "EPIC: Establishing Practices Integrating Commuters," MathFest, Denver, CO, August 3, 2018.
- "Teaching Probability through Board Games," MathFest, Columbus, OH, August 4, 2016.

Panel Participation

- "Women in STEM," Valparaiso University, April 16, 2016.
- "Innovative Methods of Assessment," IN-MAA Section Meeting, Franklin College, Franklin, IN, March 20, 2016.
- "The Learner-Centered Classroom," Valparaiso University Symposium on the Science of Learning, November 14, 2015.
- "Flipped Classrooms," Valparaiso University Mathematics Colloquium, December 5, 2014.
- "Teaching Strategies," Valparaiso University Mathematics Colloquium, April 12, 2013.
- "Inquiry-Based Learning," IN MAA Section Meeting, Butler University, Indianapolis, IN, October 27, 2012.
- "Measuring Teaching Effectiveness," Valparaiso University Faculty Workshop, October 12, 2012.

Colloquium Presentations

- “The Politics and Mathematics of Redistricting,” Valparaiso University Mathematics Colloquium, January 26, 2018.
- “The Effect of Cumulative Exams on the Final Exam,” with J. Beagley, MST Faculty Seminar, November 13, 2015.
- “The Millennium Problems,” Valparaiso University Mathematics Colloquium, November, 2013.
- “Introduction to Topology,” Valparaiso University Mathematics Colloquium, November, 2010.