

Bret Benesh

The College of Saint Benedict and Saint John's University
Department of Mathematics
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Citizenship: USA

Date of Birth: December 5, 1976

Place of Birth: Saint Paul, MN

Employment:

- Professor at the College of Saint Benedict and Saint John's University, August 2018–present
- Data Scientist at Stearns Bank, June 2021–May 2022
- Associate Professor at the College of Saint Benedict and Saint John's University, August 2014–August 2018
- Assistant Professor at the College of Saint Benedict and Saint John's University, August 2008–August 2014
- Preceptor at Harvard University, July 2005–July 2008
- Teaching Assistant at the University of Wisconsin–Madison, Fall 2000–Spring 2002, Fall 2004–Spring 2005
- NSF Kindergarten-Through-Infinity (KTI) Fellow, June 2002–August 2004: This is an NSF program of joint professional development for K-12 teachers and graduate students in mathematics, science, and engineering. Duties included teaching a 9th grade class and attending professional development courses.

Education:

- Doctor of Philosophy in Mathematics
University of Wisconsin–Madison, May 2005

Thesis title: *Counting generators in finite groups that are generated by two subgroups of prime power order*

Advisor: Nigel Boston

- Master of Arts in Mathematics
University of Wisconsin–Madison, May 2002
- Bachelor of Science, Magma Cum Laude
University of Minnesota–Twin Cities, July 1998

Publications:

A single star (*) denotes an undergraduate, and double star (**) denotes a graduate student, and a dagger (†) denotes a high school student as co-author.

14. *Element building games on \mathbb{Z}_n* , to appear in the Arnold Mathematical Journal, with Robert Campbell.
13. *Periodicity in two-element subtraction games*, Integers 20 (2020), Paper No.G5, 6 pp, with Jamyllie Carter, et al*..
12. *On the number of elements in a group whose order is divisible by a common natural number*, Mathematical Proceedings of the Royal Irish Academy, 120A (1), 2020, pp 1–5, with Will Coker**.
11. *Impartial achievement games for generating nilpotent groups*, Journal of Group Theory, 22 (3), 2019, 515–527, with D. Ernst and N. Sieben.
10. *A q -player impartial avoidance games for generating finite groups*, International Journal of Game Theory, 47(2), 2018, pp 451–461, with Marisa Gaetz†.
9. *The Metric metric on S_4* , Mathematics Magazine, 91(1), 2018, 33–36.
8. *Impartial achievement games for generating generalized dihedral groups*, Australasian Journal of Combinatorics, vol. 68(3) 2017, pp 371–384, with D. Ernst and N. Sieben.
7. *Impartial avoidance and achievement games for generating finite symmetric and alternating groups*, International Electronic Journal of Algebra, vol. 20 2016, pp 70–85, with D. Ernst and N. Sieben.
6. *Impartial avoidance games for generating finite groups*, North-Western European Journal of Mathematics, vol. 2, 2016, pp 83–102, with D. Ernst and N. Sieben.
5. *Undergraduate students' self-reported use of mathematics textbooks*, with T. Boester, A. Weinberg, and E. Wiesner, PRIMUS Journal, **22** issue 2, 152-175, February 2012.
4. *The probabilistic zeta function*, Computational group theory and the theory of groups, II, 1–9, Contemp. Math., 511, Amer. Math. Soc., Providence, RI, 2010. 20B35 (20E28).
3. *A classification of certain maximal subgroups of alternating groups*, Computational group theory and the theory of groups, 21–26, Contemp. Math., 470, Amer. Math. Soc., Providence, RI, 2008. 20B35 (20E28).
2. *A classification of certain maximal subgroups of symmetric groups* with B. Newton, J. Algebra **304** (2006), no. 2, pp 1108-1113.
1. *Undergraduates' use of mathematics textbooks* with T. Boester, A. Weinberg, and E. Wiesner. In *Proceedings of the 28th annual meeting for the North American Chapter of the International Group for the Psychology of Mathematics Education* (2006).

Other Publications:

4. *Sequence A270123 on ζ -primes*, The On-Line Encyclopedia of Integer Sequences, <https://oeis.org/A270123>, 2016, with D. Ernst and N. Sieben.
3. *Comes a day you're gonna have to decide whether it's about you or about the work.* Virtual Conference on Core Values at http://larkolicio.us/blog/?page_id=873, July, 2011.
2. *SBF (Standards Based Feedback)*
SBG (Standards Based Grading) Gala #6 at <http://oldmathdognewtricks.blogspot.com/2011/06/sbg-gala-6.html>, June 23, 2011.
1. *SBG (Standards Based Grading) Reflections*
SBG (Standards Based Grading) Gala #6 at <http://oldmathdognewtricks.blogspot.com/2011/06/sbg-gala-6.html>, June 23, 2011.

Submitted publications:

1. *The spectrum of nim-values for achievement games for generating finite groups*, with D. Ernst and N. Sieben.

Research Interests:

- Finite group theory
- Combinatorial game theory
- The scholarship of teaching and learning college-level mathematics

Grants and funding:

- Awarded CSBSJU FDRC Faculty Development Grant of \$7500 for development of an interdisciplinary and experiential learning-focus Honors Program (with Emily Esch and Beth Wengler)
- Awarded CSBSJU FDRC Faculty Development Grant of \$750 for development of modules for data exploration with Python (with Robert Campbell, Sunil Chetty, Bob Hesse, and Anne Sinko)
- Selected and funded to work with six other mathematicians on an open problem in game theory at American Institute of Mathematics, San Jose, CA, July 17–21, 2017
- Selected and funded to attend “Research experiences for undergraduate faculty” at American Institute of Mathematics, San Jose, CA, July 25–29, 2016
- Selected and funded to be a TIMES (NSF grant) fellow to receive training in NSF-sponsored curricula, North Carolina State University, Raleigh, NC, June 22–24, 2016
- Applied for National Association of Math Circles Exchange Grant for to visit Kansas State Math Circle, Spring 2016 (denied funding)

- Applied for Xcel Energy Education Grant for Central Minnesota Math Teachers' Circle, Summer 2015 (denied funding)
- Applied for National Association of Math Circles Seed Grant for Central Minnesota Math Teachers' Circle, Summer 2015 (denied funding)
- Awarded CSBSJU FDRC Faculty Development Grant of \$2170 for development of a Sage training course (with Sunil Chetty)
- Awarded Educational Advancement Foundation and Academy for Inquiry Based Learning grant of \$2500 for development of a capstone course for mathematics for Summer 2012
- Awarded CSBSJU Scholarship and Teaching Project Fellowship (course release for research), Spring 2011

Awards and Honors:

- Awarded a sabbatical for 2021–2022 to be a data scientist at Stearns Bank
- My thesis student Emily Twardy won the 2021 “Most Outstanding Senior Thesis at CSBSJU,”
- Awarded the Linda Mealey Faculty/Student Collaborative Research and Creativity teaching award, 2018–2019
- Awarded a CSBSJU Summer Collaboration Grant for Summer 2019
- Nominated for Sister Mary Grell Teacher of Distinction Award, 2017
- Awarded a sabbatical for Spring 2015 semester
- My thesis student Marie Meyer won the 2013 “Most Outstanding Senior Thesis at CSBSJU,”
- Nominated for Linda Mealey Faculty/Student Collaborative Research and Creativity teaching award, 2012–2013
- My thesis student Marie Meyer won the 2012 Council on Undergraduate Research (CUR) Award at MathFest in Madison, Wisconsin.
- Co-winner of the Tom Creed Memorial Award for Effective Electronic Pedagogy at CSBSJU, 2011-2012
- My thesis student Jason Lutz won the 2009 “Most Outstanding Senior Thesis at CSBSJU.”
- My thesis student Debbie Tully won the 2008 Dean's Prize for Outstanding A.L.M. Thesis in Mathematics for Teaching at the Harvard Extension School.
- My thesis student Jessica Kuh won the 2007 Dean's Prize for Outstanding A.L.M. Thesis in Mathematics for Teaching at the Harvard Extension School.

- Nominated for Joseph R. Levenson Memorial Teaching Prize at Harvard University, Spring 2007
- Derek Bok Center for Teaching and Learning Certificate of Distinction in Teaching, Fall 2006, Fall 2007
- Recognized by Madison Metropolitan School Board, February 2004
- University of Wisconsin–Madison Mathematics Department's Excellence in Teaching Award, May 2003
- Participant in the Minnesota State Math Tournament, 1995
- Individual champion of the Saint Paul Suburban Math League, 1994-1995

Research Students:

Work with students as an Advisor:

- Benchelo Victorin, Emerging Scholars, 2020
- Emily Twardy, senior thesis: *Games on dihedral groups*, 2020–2021
- Ally Wilson, Summer Undergraduate Research Program, Summer 2020
- Max Hennen, Summer Undergraduate Research Program (Summer Collaboration Grant Recipient), Summer 2019
- Emily Twardy, Summer Undergraduate Research Program, Summer 2019
- Jon Blomquist, senior thesis 2016–2017
- Jaehyun 'Jake' Park, Summer Undergraduate Research Program, Summer 2016
- Marisa Gaetz (high school student), IB Project: *3-player Do Not Generate on cyclic and dihedral groups*, Spring 2015 and Fall 2015
- Alyssa Whitesell, senior project: *Constructions in taxicab geometry*, Fall 2014
- Marie Meyer, senior thesis: *Nim on groups*, 2012–2013
- Whitney Radil, senior thesis: *The growth in normal subgroups under direct products*, 2012–2013
- Marie Meyer, Summer Undergraduate Research Program, Summer 2012
- Hongying "Shadow" Zhao, senior thesis: *Nonabelian groups with perfect order subsets*, 2011–2012
- Hongying "Shadow" Zhao, Summer Undergraduate Research Program, Summer 2011
- Cong Van, senior thesis: *The number of conjugacy classes of a finite group and its Sylow p -subgroups*, 2010–2011

- Cong Van, Summer Undergraduate Research Program, Summer 2010
- Jason Lutz, senior thesis: *An Analog for a Basis in Finite Groups*, 2009–2010
- Jason Lutz, Summer Undergraduate Research Program: Summer 2009
- Greg Williamson, Degree of Master of Liberal Arts in Extension Studies at Harvard University: *Memorization of multiplication facts: an investigation into the connection between mastery of basic multiplication facts and performance on fifth-grade standardized math tests*, Spring 2009
- Jason B. Franklin, Degree of Master of Liberal Arts in Extension Studies at Harvard University: *The use and effectiveness of a class-supporting website in an eighth grade math class in Boston public schools*, Spring 2008
- Armando Segura, Degree of Master of Liberal Arts in Extension Studies at Harvard University: *Supplemental design for a curriculum in non-Euclidean geometry in secondary education mathematics*, Spring 2008
- Deborah Tully, Degree of Master of Liberal Arts in Extension Studies at Harvard University: *The effect of single gender mathematics learning environments on self efficacy and post secondary curricular paths: an Australian case study*, Spring 2008
- Jessica Kuh, Degree of Master of Liberal Arts in Extension Studies at Harvard University: *International Baccalaureate mathematics projects: what they are and why their inclusion in standard American math classes would be beneficial*, Spring 2007
- Jaret Dunn, research assistant through the Faculty Aide Program at the Harvard Extension School, studying the education literature on effective classrooms: Fall 2007
- Greg Williamson, research assistant through the Faculty Aide Program at the Harvard Extension School: studying the correlation between knowledge of the multiplication tables and the 5th grade curriculum: Fall 2007

Work with Students as a Reader:

- Esther Banaian, reader for senior thesis: 2015–2016
- Shannon Essler-Petty, reader for PhD thesis at Hamline University: 2012–2014
- Margaret Peterson, reader for senior thesis: 2012–2013
- Christopher Roering, reader for senior thesis: 2012–2013
- David Byrne Walmsley, reader for senior thesis: 2010–2011
- Matthew Donner, reader for senior thesis: 2010–2011
- Laura Buggy, reader for senior thesis: 2009–2010

Research Groups Led:

- Bardia Bijani Aval, Mitchell Hansen, Eddy MacDonald, and Emily Twardy on a game about determinants on matrices, Fall 2018 and Spring 2019
- Jordan Paulson, Forrest Ward, and Kang Yan on coprime entries of generalized Fibonacci sequences, Spring 2016
- Marisa Gaetz (Saint John's Preparatory School student) on 3-player games on finite groups, Fall 2015–Spring 2016
- Adam Hey and Reese Thoen on finding primitive elements of finite fields, Fall 2015

Invited Talks:

- *Using mastery grading in upper division courses* panel discussion member, Mastery Grading Conference, Online, June 6, 2020
- *Blended Learning and the Flipped Classroom*
Blended Learning workshop at CSBSJU, June 6, 2016
- *Gimme Sympathy: the mathematics of Metric's music video*
Saint Cloud State University Mathematics Colloquium, December 2, 2015
- *When is S_n maximal in S_m ?*
Northern Arizona University Mathematics Colloquium, Northern Arizona University, February 17, 2015
- *Groups with all order subsets dividing the order of the group*
Northern Arizona University Mathematics Algebra, Combinatorics, Geometry, and Topology Seminar, Northern Arizona University, February 17, 2015
- *Groups with all order subsets dividing the order of the group*
Ohio State-Denison Mathematics Conference, Ohio State University, May 10, 2014
- *Assessing the chimera: Determining how effective a Frankenstein pedagogy is in Calculus I*
Saint Cloud State University Mathematics Colloquium, February 27, 2013
- *Creating an IBL/flipped-classroom hybrid*
MathFest, Madison, Wisconsin, August 3, 2012
- *Maximal subgroups of solvable groups*
Faculty Research Seminar, Saint Olaf College, Northfield Minnesota, December 9, 2011
- *National Day of Writing panel*
Panel discussion hosted by the CSBSJU Writing Center, October 19, 2010

- *When is S_n maximal in S_m ?*
Faculty Research Seminar, Saint Olaf College, Northfield Minnesota, October 22, 2010
- *From matrices to magic eight balls: a look at three types of symmetry*
Colloquium, Concordia College, September 8, 2009
- *STEM education: future issues, concerns and problems for national competitiveness R&D*
Panel discussion hosted by The Heritage Foundation, October 22, 2008
- *The probabilistic zeta function*
AMS Sectional Meeting, Western Michigan University, October 18, 2008
- *From matrices to magic eight balls: a look at three (?) types of symmetry*
Colloquium, Colby College, May 5, 2008
- *Some maximal subgroups of symmetric groups*
Colloquium, Oregon State University, November 16, 2007
- *Pairing up: a case study in cooperative learning.*
Derek Bok Center for Teaching and Learning Fall Teaching Conference, Harvard University, September 12, 2007
- *Some maximal subgroups of symmetric groups*
University of Georgia VIGRE seminar, March 20, 2007
- *A classification of certain maximal subgroups of symmetric groups and alternating groups*
Zassenhaus Group Theory Seminar, Saint Louis University, March 17, 2007
- *A classification of certain maximal subgroups of symmetric groups*
AMS Sectional Meeting at Davidson College in North Carolina, March 4, 2007
- *A classification of certain maximal subgroups of symmetric groups*
Colloquium, Western Michigan University, October 12, 2006
- *A different take on teaching*
Pi Mu Epsilon, Western Michigan University, October 13, 2006
- *Building bridges: a model for connecting K-12 and postsecondary schools*
University of Wisconsin-Eau Claire, March 2005

Selected Contributed Talks:

- *A game on \mathbb{Z}_n*
Zassenhaus Group Theory Conference, virtual conference due to Covid 19, May 28, 2021
- *The spectrum of nim-values of a game on finite groups*
Zassenhaus Group Theory Conference, virtual conference due to Covid 19, May 30, 2020

- *On the number of elements with order divisible by m in a group (or, (Prop)³)*
Zassenhaus Group Theory Conference, Binghamton University, May 31, 2019
- *The periodicity of nim-numbers in subtraction games*
MAA North Central Section Meeting, Augsburg University, April 6, 2019
- *The game GENERATE on finite nilpotent groups*
Zassenhaus Group Theory Conference, University of Southern Florida, April 8, 2018
- *Strategies for an achievement game on finite groups*
Zassenhaus Group Theory Conference, Binghamton University, May 28, 2017
- *Sending internet signals over power lines: How group theory can help*
CSBSJU Capstone Presentations, SJU, October 20, 2016
- *A practical guide for managing a professor's time*
CSBSJU Thursday Forum, September 29, 2016
- *Strategies for an Achievement and Avoidance Game on Symmetric and Alternating Groups*
Zassenhaus Group Theory Conference, Adelphi University, June 10, 2016
- *Innovations in the undergraduate curriculum: grading with Robert Campbell*
MAA North Central Section Meeting, Macalester College, April 16, 2016
- *A 3-player game on finite groups*
MAA North Central Section Meeting, Macalester College, April 16, 2016
- *Nim on Cayley graphs of dihedral groups*
MAA North Central Section Meeting, Bemidji State University, October 24, 2015
- *Games on groups: GENERATE and DO NOT GENERATE*
Zassenhaus Group Theory Conference, SUNY-Binghamton, May 23, 2015
- *Games on groups: GENERATE and DO NOT GENERATE*
MAA NCS Sectional Meeting, Winona State University, April 24, 2015
- *Order subsets dividing the order of a group*
MAA NCS Sectional Meeting, Saint Cloud State University, April 24, 2014
- *What mathematics do elementary education teachers need to know?*
CSBSJU Thursday Forum, March 1, 2012
- *The representation theory of maximal subgroups of symmetric groups*
Zassenhaus Conference, Towson University, May 29, 2011
- *Adventures with Cooperative Learning and standards-based grading in the college classroom (or, how I tried to re-program myself to teach in only one semester)*
AMS/MAA Joint Meetings, New Orleans, Louisiana, January, 2011

- *Hands-on algebra - Using Algeblocks to create a deeper understanding for algebra concepts*
MCTM Spring Meeting, Duluth, Minnesota, May 1, 2010
- *When is S_n maximal in S_m ?*
MAA NCS Sectional Meeting, Saint Paul, Minnesota, April 23, 2010
- *Inquiry based learning at Harvard*
Mathematical Sciences Research Institute's "Teaching Teachers" workshop, Berkeley, California, May 30–June 1, 2007
- *Inquiry based learning at Harvard*
R.L. Moore Legacy Conference in Austin, Texas, April 13, 2007
- *Two examples of IBL classrooms for in-service high school teachers: rationals, implementation, and results*
R.L. Moore Legacy Conference in Austin, Texas, April 12, 2007
- *How your students use their textbook: a preliminary report*
Mathematics Education Seminar Series (MESS) at Harvard University, Cambridge, MA, April 6, 2007
- *How your students use their textbook: a preliminary report*
AMS/MAA Joint Mathematics Meetings, New Orleans, LA, January 6, 2007
- *A new geometry*
A presentation to high school students enrolled in Harvard Summer School, Cambridge, MA, Summer, 2006
- *A classification of certain maximal subgroups of symmetric groups*
The Ohio State–Denison Mathematics Conference, the Ohio State University, March 2006
- *Counting generators of finite groups that are generated by two subgroups of prime power order*
Zassenhaus Conference, Auburn University-Montgomery, March 2005
- *Counting generators of finite groups that are generated by two subgroups of prime power order*
Joint Mathematics Meetings, Atlanta, January 2005
- *An experiment in Japanese Lesson Study*
Joint Mathematics Meetings, Atlanta, January 2005
- *On maximal subgroups of symmetric groups*
Group Theory Seminar, University of Wisconsin, Spring 2005
- *A result from probabilistic group theory*
Group Theory Seminar, University of Wisconsin, Fall 2004
- *Generating finite groups with a unique minimal normal subgroup*
Group Theory Seminar, University of Wisconsin, Spring 2003

- *Profinite free products*
Group Theory Seminar, University of Wisconsin, Spring 2002

Classes Taught:

- Professor at The College of Saint Benedict and Saint John's University:
 - Algebraic Structures I, Spring 2010, Fall 2016
 - Algebraic Structures II, Spring 2017
 - Calculus I, Fall 2008, Fall 2012, Fall 2014, Fall 2016
 - Calculus II, Fall 2015
 - Complex Analysis, Spring 2012
 - Differential Equations, Spring 2009
 - Essential Calculus, Fall 2010, Spring 2017
 - Fundamentals of Mathematics I (for Education Majors), Spring 2009, Spring 2011, Spring 2012, Spring 2016, Fall 2016, Spring 2018
 - Fundamentals of Mathematics II (for Education Majors), Fall 2009, Spring 2014, Fall 2014, Spring 2016
 - Linear Algebra, Fall 2008, Fall 2010, Spring 2014, Spring 2018
 - Mathematics Capstone, Fall 2012, Spring 2013, Fall 2013, Spring 2014
 - Mathematics Exploration, Fall 2013
 - Multivariable Calculus, Fall 2009, Fall 2012
 - Probability and Statistical Inference, Spring 2013, Fall 2015, Fall 2017
 - Real Analysis, Fall 2011, Fall 2017
- Instructor at Harvard University:
 - Discrete Mathematics, Fall 2007
 - Introduction to Calculus, Fall 2005, Fall 2006
 - Introduction to Functions and Calculus I, Fall 2005, Fall 2006, Fall 2007
 - Introduction to Functions and Calculus II, Spring 2006, Spring 2007 and Spring 2008
 - Lesson Study Seminar, Fall 2005, Spring 2006, Fall 2006
 - Linear Algebra and Differential Equations, Spring 2008
 - Theory and Practice of Teaching Arithmetic, Summer 2007 and Spring 2008
 - Theory and Practice of Teaching Geometry, Summer 2006, Spring 2007, and Summer 2008
- Instructor at University of Wisconsin–Madison
 - Arithmetical Problem Solving for Elementary Teachers, Fall 2004

Calculus II, Spring 2002

College Algebra, Fall 2001

Geometric Problem Solving for Elementary Teachers, Spring 2005

- Teaching Assistant at the University of Wisconsin–Madison

9th Grade Integrated Math/CORE Plus at Madison East High School (through KTI), 2003–2004

9th Grade Algebra at Madison La Follette High School (through KTI), 2002–2003

Calculus II, Fall 2000

Topics in Finite Mathematics, Spring 2001

Service:

The College of Saint Benedict and Saint John's University

- CSBSJU Undergraduate Research Faculty Advisory Committee, 2020–present
- Member of ad hoc committee to determine definition of graduating with distinction at CSBSJU, Spring 2020
- Member of Strategic Directions 2025 Task Force, Fall 2019–Spring 2020
- Referee for the Journal of Humanistics Mathematics, Fall 2019–present
- Presenter at TechSavvy workshop on combinatorial game theory, which is a STEM workshop for K–12 girls, October 27, 2018
- Presenter at TechSavvy workshop on combinatorial game theory, which is a STEM workshop for K–12 girls, November 4, 2017
- Member of Mathematical Association of America Classroom Resource Materials Editorial Board, January 2018–January 2021
- Program Review coordinator for Mathematics Department, Fall 2016–Spring 2018
- Associate Chair of Common Curriculum Visioning Committee to create a new general education curriculum at CSBSJU, 2016–2017
- Associate Director of the Honors Program at CSBSJU, Spring 2017–present
- Referee for International Journal of Game Theory Spring 2017–present
- Referee for International Journal of Group Theory Fall 2017–present
- Referee for Communications in Algebra journal, Fall 2016–present
- Referee for Abstract Algebra and its Applications journal, Fall 2016–present

- Referee for the Designs, Codes, and Cryptography journal, Fall 2016–present
- Mentor in CSBSJU's Blended Learning Instruction Seminar, 2016–2017
- Chair of Common Curriculum Visioning subcommittee on Critical and Creative Thinking and Communication and Collaboration at CSBSJU, Spring 2016
- Chair of Common Curriculum Visioning subcommittee on Critical and Creative Thinking at CSBSJU, Fall 2015
- Co-founder and co-director of Central Minnesota Teachers' Math Circle, Fall 2015–present
- Founder and director of Central Minnesota Unschoolers' Math Circle Fall 2015–present
- Referee for the PRIMUS journal, Fall 2014–present
- Member of Common Curriculum Visioning Ad Hoc Committee at CSBSJU, Fall 2014
- Member of Common Curriculum Mathematics Goals Subcommittee for CSBSJU Mathematics Department, Fall 2013
- Member of Common Curriculum Program Review Ad Hoc Committee at CSBSJU, Fall 2013–Spring 2014
- Member of Academic Policies and Standards, and Assessment Committee (APSAC) at CSBSJU, Fall 2013–Spring 2016 (on sabbatical for 2014–2015 school year)
- Member of search committee for CSB Sustainability Fellow, Spring 2013
- Interviewer for Trustees' Scholarship, Spring 2013–present
- Member of CSBSJU Senate Executive Board, Fall 2012–Spring 2013
- Co-coordinator for completion of the Minnesota Department of Education 5–12 Mathematics “Grids” for Education Department Program Review, Fall 2012–Spring 2013
- Web administrator for Mathematics Department at CSBSJU, Fall 2012–present
- Summer Research Coordinator for Mathematics Department at CSBSJU, Fall 2012–Spring 2013
- New Faculty Mentor, Fall 2012–present
- Representative on Food and Dining Subcommittee of CSB Sustainability Committee, Fall 2011–present
- CSBSJU Mathematics Department Liaison to Education Department, Fall 2011–present
- Writer of Math Reviews for AMS's MathSciNet, Fall 2011–present
- Referee for the Malaysian Mathematical Sciences Society, Fall 2011–present

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- Textbook reviewer for *Contemporary Abstract Algebra, 7e* by Joseph A. Gallian, July 2011
- Natural Science Representative for CSBSJU faculty senate, Fall 2011–Spring 2013
- Reviewer for National Conference on Undergraduate Research (NCUR) student papers, Spring 2011
- Founder and co-organizer for CSBSJU Project Euler team, Spring 2011–Spring 2012
- Faculty representative on CSB Sustainability Committee, Fall 2010–present
- Member of CSBSJU mathematics department's Faculty Hiring Committee, Fall 2010–Spring 2011
- Chair of CSBSJU mathematics department's committee to create program for math endorsement for education majors, Spring 2010
- Co-advisor for CSBSJU Math Society, Fall 2009–Spring 2011
- Founder and organizer of College of Saint Benedict and Saint John's University Group Theory Seminar, Fall 2009–Spring 2011
- Co-organizer of CSBSJU Category Theory Seminar, Fall 2008–Spring 2009
- Referee for *Involve!*, a mathematics journal for undergraduates, Fall 2008–present
- Representative for Math Department on Building Committee, Fall 2008–present
- Organizer of the Putnam Team, Fall 2008–2012
- Attended CSBSJU information/recruitment session in Saint Paul for high school seniors, Spring 2009
- Member of Calculus Textbook Selection Committee, Spring 2009
- Supervisors of Individualize Learning Projects (Alec Torigian, Fall 2008 and Emily Dauk, Spring 2009)

Harvard University

- Organizer of Mathematics Education Seminar Series (MESS) at Harvard University, Fall 2007
- Harvard Freshman Advisor, Fall 2007–Spring 2008
- Participant in AWM's Teacher Partnership Program (partnered with Leanne Kaufmann), March 2007–March 2008
- Referee for the *Journal of Group Theory*, Fall 2007–present
- Math Club/Math Table Chair from Fall 2007–Spring 2008
- Math Club/Math Table Committee, Fall 2006–Spring 2008
- Mathematics Placement Test Committee, Fall 2006–Spring 2008

Bret Benesh, The College of Saint Benedict and Saint John's University

- Apprentice Committee, Fall 2006–Spring 2008
- Co-coordinator of hiring and training undergraduate course assistants for calculus, Spring 2006–Spring 2008
- Coordinator for Teaching Undergraduate Mathematics Seminar II (TUMS II), Fall 2005–Spring 2007
- Coordinator for Reflections on Learning and Instructional Difficulties Seminar (ROLAIDS), Fall 2005–Spring 2007
- Coordinator for Mathematics Question Center, a tutoring center for calculus students, Fall 2005–Spring 2006
- Visiting Calculus Courses Committee, Fall 2005–Spring 2008

University of Wisconsin–Madison

- Co-creator of teacher professional development workshop *Misconceptions in Algebra*, Madison Metropolitan School District, June 2004
- Teaching Assistant Evaluation Committee, Fall 2003–Spring 2005
- Committee for Teaching Assistant Policies and Procedures, Fall 2004–Spring 2005

Mathematics Community

- Writer of mathematics and pedagogy blog with over 43,000 views, 1,200 comments, and 16,800 visitors (<http://symmetricblog.wordpress.com>)
- Owner of YouTube channel on mathematics with over 817 subscribers and 387,000 views

Professional Affiliations:

- Signed up to be Charter Member of the Mathematical Knowledge for Teaching Special Interest Group of the MAA, 2017–present
- Member of the Teacher Circle Special Interest Group of the MAA, 2016–present
- Charter Member of the Inquiry-Based Learning Special Interest Group of the MAA, 2016–present
- Charter Member of the Undergraduate Research Special Interest Group of the MAA, 2015–present
- Mathematical Association of America, 2006–present
- Association for Women in Mathematics, 2006–2011, 2016–present
- American Mathematical Society, 2000–present

Additional Experiences and Skills:

- Participant in Vincent Smiles' Science–Theology Discussion Group, funded by the Templeton Foundation, Fall 2017
- Participant in “Liberal Arts Illuminated” conference at CSBSJU, July 11–13, 2016
- Mentor in Blended Learning Instruction Seminar at CSBSJU, Fall 2016–present
- Participant in “The National Association of Math Circles Mentorship and Partnership Program” conference, Denver, CO, September 10–12, 2015
- Participant in “The Many Ways of Inquiry-Based Learning” conference, Chicago, IL, June 2013
- Contributed problems and data to MathQUEST/MathVote online database, Summer 2013
- Participant in “Writing Great Clicker Questions: Quantitative Clicker Questions” webinar, hosted by i>clicker and Lee Gibson on July 28, 2011
- Participant in “Cooperation in the Classroom” in Minneapolis, MN, July 26–29, 2010
- Co-organizer of the “Scrapheap Showdown,” a fundraiser for the Somerville Mathematics Fund. This is an engineering challenge for high school students to build machines such as cars, catapults, and windmills out of “junk.” Spring 2006–Spring 2008
- Intermediate knowledge of the Spanish language
- Some knowledge of the spoken Norwegian language
- Participant in Massachusetts Mathematics Association of Teacher Educators symposium, Roger Williams University in Bristol, RI, June 12, 2007
- Participant in the Tenth Annual Legacy of R. L. Moore Conferences, Austin, Texas, April 2007
- Participant in the Ninth Annual Legacy of R. L. Moore Conferences, Austin, Texas, May 2006
- Participant in System-wide Change for All Learners and Educators (SCALE) NSF site visit, Los Angeles, CA, July 2004
- Participant in Diversity in Mathematics Education (DiME) Seminar, University of Wisconsin–Madison/Madison Metropolitan School District, Fall 2002–Spring 2004
- Analyst, Andersen Consulting (now Accenture Consulting), August 1998–August 2000