

MICHAEL D. BARRUS

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EMPLOYMENT

University of Rhode Island, Kingston, Rhode Island

Associate Professor, July 2019 – present

Assistant Professor, June 2014 – June 2019

Brigham Young University, Provo, Utah

Visiting Assistant Professor, August 2012 – August 2014

Black Hills State University, Spearfish, South Dakota

Assistant Professor, August 2009 – August 2012

EDUCATION

University of Illinois at Urbana-Champaign, Urbana, Illinois

PhD in Mathematics, May 2009

Dissertation Advisor: Professor Douglas B. West

MS in the Teaching of Mathematics, December 2008

Brigham Young University, Provo, Utah

MS in Mathematics, April 2004

BS in Mathematics, April 2002

RESEARCH INTERESTS AND EXPERIENCE

Graph theory and combinatorics, with emphasis in structural graph theory and graph classes.

Refereed Journal Publications

- [1] (with Stephen G. Hartke and Mohit Kumbhat) *Graph classes characterized both by forbidden subgraphs and degree sequences*. *Journal of Graph Theory*, vol. 57 (2008), no. 2, pp. 131-148.
- [2] *Antimagic labeling and canonical decomposition of graphs*. *Information Processing Letters*, vol. 110 (2010), pp. 261-263.
- [3] (with Douglas B. West) *Degree-associated reconstruction number of graphs*. *Discrete Mathematics*, vol. 310 (2010), no. 20, pp. 2600-2612.
- [4] *Havel-Hakimi residues of unigraphs*. *Information Processing Letters*, vol. 112 (2012), pp. 44-48.
- [5] (with Stephen G. Hartke, Kyle F. Jao, and Douglas B. West) *Length thresholds for graphic lists given fixed largest and smallest entries and bounded gaps*. *Discrete Mathematics*, vol. 312 (2012), no. 9, pp. 1494-1501.
- [6] *On 2-switches and isomorphism classes*. *Discrete Mathematics*, vol. 312 (2012), no. 15, pp. 2217-2222.
- [7] (with Douglas B. West) *The A_4 -structure of a graph*. *Journal of Graph Theory*, vol. 71 (2012), no. 2, pp. 159-175.

- [8] *Hereditary unigraphs and Erdős-Gallai equalities*. Discrete Mathematics, vol. 313 (2013), no. 21, pp. 2469-2481.
- [9] *On fractional realizations of graph degree sequences*. Electronic Journal of Combinatorics, vol. 21 (2014), no. 2, Paper #P2.18.
- [10] (with Stephen G. Hartke and Mohit Kumbhat) *Non-minimal degree-sequence-forcing triples*. Graphs and Combinatorics, vol. 31 (2015), no. 5, pp. 1189-1209.
- [11] (with Stephen G. Hartke) *Minimal forbidden sets for degree sequence characterizations*. Discrete Mathematics, vol. 338 (2015), no. 39, pp. 1543-1554.
- [12] (with John Sinkovic) *Uniqueness and minimal obstructions for tree-depth*. Discrete Mathematics, vol. 339 (2016), no. 2, pp. 606-613.
- [13] (with Grant Molnar) *Graphs with the strong Havel-Hakimi property*. Graphs and Combinatorics, vol. 32 (2016), pp. 1689-1697.
- [14] *On realization graphs of degree sequences*. Discrete Mathematics, vol. 339 (2016), no. 8, pp. 2146-2152.
- [15] (with Michael Ferrara, Jennifer Vandenbussche, and Paul S. Wenger) *Colored saturation parameters for rainbow subgraphs*. Journal of Graph Theory, vol. 86 (2017), no. 4, pp. 375-386.
- [16] (with Elizabeth Donovan) *Neighborhood degree lists of graphs*. Discrete Mathematics, vol. 341 (2018), no. 1, pp. 175-183.
- [17] *Weakly threshold graphs*. Discrete Mathematics & Theoretical Computer Science, vol. 20 (2018), no. 1, paper 15.
- [18] (with John Sinkovic) *On 1-uniqueness and dense critical graphs for tree-depth*. Discrete Mathematics, vol. 341 (2018), no. 7, pp. 1973-1982.
- [19] *Adjacency relationships forced by a degree sequence*. Graphs and Combinatorics, vol. 34 (2018), no. 6, pp. 1411-1427.
- [20] (with Carlos A. Alfaro, John Sinkovic, and Ralihe Villagrán) *Graphs with few trivial characteristic ideals*. Linear Algebra and Its Applications, vol. 615 (15 April 2021), pp. 155-174.
- [21] (with Jean Guillaume) *Upward-closed hereditary families in the dominance order*. Discrete Mathematics & Theoretical Computer Science, vol. 23 (20 January 2022), no. 3.
- [22] *The principal Erdős-Gallai differences of a degree sequence*. Discrete Mathematics, vol. 345 (April 2022), no. 4, Article 112755.
- [23] (with Nathan Haronian) *Cliques in realization graphs*. Discrete Mathematics, vol. 346 (January 2023), no. 1, Article 113184.

Invited Conference and Seminar Presentations

- Mar. 2022 *Cliques in the realization graph of a degree sequence*. Special Session on Graph Reconfiguration, 53rd Southeastern Conference on Combinatorics, Graph Theory & Computing, Florida Atlantic University, Boca Raton, FL. Delivered virtually.
- Oct. 2021 *The Erdős-Gallai differences of a degree sequence*. New York Combinatorics Seminar, The City University of New York, New York, NY. Delivered virtually.

- Oct. 2020 *Unigraphs and hereditary graph classes*. Illinois Institute of Technology Discrete Math Seminar, Chicago, IL. Delivered virtually.
- Feb. 2020 *Fractional realizations of degree sequences and score sequences*. Wesleyan University Logic & Discrete Math Seminar, Middletown, CT.
- Jan. 2020 *Characterizing graphs with few trivial characteristic ideals*. Brigham Young University Discrete Math Seminar, Provo, UT.
- Mar. 2019 *Connectivity in realization graphs*. Special Session on Structured Families of Graphs and Orders: Mathematical and Algorithmic Aspects, 50th Southeastern Conference on Combinatorics, Graph Theory & Computing, Florida Atlantic University, Boca Raton, FL.
- Sep. 2018 *Trends toward the top of the dominance order*. New York Combinatorics Seminar, The City University of New York, New York, NY.
- June 2018 *Hereditary families and the dominance order*. SIAM Minisymposium on Structured Families of Graphs and Posets, SIAM Conference on Discrete Mathematics (DM18), University of Colorado Denver, Denver, CO.
- May 2018 *What lies above: Degree sequences near the top of the dominance order*. Spring 2018 Discrete Mathematics Day of the Northeast, University of New England, Biddeford, ME.
- Jan. 2018 *Looking upward in the dominance order*. 2018 International Workshop on Graph Theory, Ewha Womans University, Seoul, South Korea.
- Apr. 2017 *Erdős-Gallai near-equalities and the graphs that exhibit them*. Virginia Commonwealth University Discrete Mathematics Seminar, Richmond, VA.
- Mar. 2017 *Graphs with low Erdős-Gallai differences*. Special Session on Structural Families of Graphs and Orders, 48th Southeastern International Conference on Combinatorics, Graph Theory & Computing, Boca Raton, FL.
- Sep. 2016 *Realization graphs of degree sequences*. Special Session on New Developments in Graphs and Hypergraphs, AMS Eastern Sectional Meeting, Brunswick, ME.
- June 2014 *Degree sequences and forced adjacency relationships*. SIAM Minisymposium on Degree Sequences of Graphs and Hypergraphs, SIAM Conference on Discrete Mathematics (DM14), Minneapolis, MN.
- Nov. 2012 *Degree-associated graph reconstruction: Playing with a marked deck*. Mathematics department colloquium, Utah State University, Logan, UT.
- Mar. 2012 *Alternating 4-cycles and isomorphisms*. University of Colorado Denver, Denver, CO.
- Oct. 2011 *Residues and independence numbers of unigraphs*. Special Session on Extremal and Probabilistic Combinatorics, AMS Central Section Meeting, Lincoln, NE.
- Mar. 2010 *Substitution closures of the split graphs and matrogenic graphs*. Discrete Math Seminar, University of Nebraska-Lincoln, Lincoln, NE.
- Feb. 2010 *Degree-sequence-forcing sets: when hasty generalizations are okay*. Mathematics department colloquium, South Dakota School of Mines and Technology, Rapid City, SD.
- Jan. 2009 *On A_4 -balanced graphs*. SIAM Minisymposium on Graph Theory, Joint Mathematics Meetings, Washington, D.C.

Feb. 2006 *Degree-sequence-forcing sets*. Discrete Mathematics Seminar, Illinois State University, Normal, IL.

Selected Other Presentations

- June 2022 *Cliques in realization graphs of degree sequences*. SIAM Conference on Discrete Mathematics (DM22), Carnegie Mellon University, Pittsburgh, PA.
- July 2021 *Unigraphs and hereditary graph classes*. SIAM Conference on Discrete Mathematics (DM21). Virtual conference.
- June 2021 *Erdős-Gallai differences and complementary degree sequences of graphs*. MAA Northeastern Section Spring Meeting. Virtual conference.
- May 2021 *Unigraphs and hereditary graph classes*. CANADAM 2021 (Canadian Discrete and Algorithmic Mathematics Conference). Virtual conference.
- Mar. 2021 *Distinguishing chromatic numbers of circulant graphs*. 52nd Southeastern International Conference on Combinatorics, Graph Theory & Computing. Virtual conference.
- Mar. 2020 *Characterizing graphs with few trivial characteristic ideals*. 51st Southeastern International Conference on Combinatorics, Graph Theory & Computing, Florida Atlantic University, Boca Raton, FL.
- Nov. 2019 *Graphs with few trivial characteristic ideals*. MAA Northeastern Section Fall Meeting, Babson College, Wellesley, MA.
- Oct. 2019 *Degree-based iterative construction of graphs*. 33rd Midwest Conference on Combinatorics, Cryptography, and Computing, Rochester Institute of Technology, Rochester, NY.
- May 2019 *Higher connectivities for realization graphs*. MAA Northeastern Section Spring Meeting, Fitchburg State University, Fitchburg, MA.
- July 2018 *Induced subgraphs forced by the adjacency spectrum*. Summer Combo in Vermont, St. Michael's College, Colchester, VT.
- Mar. 2018 *Towards spectral characterizations of hereditary graph classes*. 49th Southeastern International Conference on Combinatorics, Graph Theory & Computing, Florida Atlantic University, Boca Raton, FL.
- June 2017 *Uniqueness in tree-depth labelings of graphs*. MAA Northeastern Section Spring Meeting, Norwich University, Northfield, VT.
- Jan. 2017 *Uniqueness in labelings of tree-depth critical graphs*. MAA General Contributed Paper Session on Graph Theory, Joint Mathematics Meetings, Atlanta, GA.
- Nov. 2016 *A strong Havel-Hakimi property for graphs*. MAA Northeastern Section Fall Meeting, Trinity College, Hartford, CT.
- June 2016 *Realization graphs of degree sequences*. SIAM Conference on Discrete Mathematics (DM16), Georgia State University, Atlanta, GA.
- June 2016 *Weakly threshold graphs*. MAA Northeastern Section Spring Meeting, University of New England, Biddeford, ME.
- Nov. 2015 *Realization graphs of degree sequences*. MAA Northeastern Section Fall Meeting, Gordon College, Wenham, MA.

- July 2015 *Graphs with small Erdős–Gallai differences.* Summer Combo in Vermont, St. Michael's College, Colchester, VT.
- June 2015 *Graph classes with near-equality of independence numbers and Havel-Hakimi residues.* Canadian Discrete and Algorithmic Mathematics Conference, Saskatoon, Saskatchewan, Canada.
- Mar. 2015 *Three conjectures on minimal obstructions for tree-depth.* Forty-Sixth Southeastern International Conference on Combinatorics, Graph Theory, and Computing, Boca Raton, FL.
- Jan. 2014 *Uniqueness and minimal obstructions for tree depth.* MAA General Contributed Paper Session, Joint Mathematics Meetings, Washington, D.C.
- Jan. 2014 *The polytope of fractional realizations of degree sequences.* AMS Session on Structural and Extremal Problems in Graph Theory, Joint Mathematics Meetings, Washington, D.C.
- Sept. 2013 *Alternating 4-cycles in graphs.* Mathematics department colloquium, Brigham Young University, Provo, UT.
- Aug. 2013 *Adjacency relationships forced by graph degree sequences.* MathFest 2013, Hartford, CT.
- June 2013 *Realization polytopes for the degree sequence of a graph.* Canadian Discrete and Algorithmic Mathematics Conference, St. John's, Newfoundland, Canada.
- Oct. 2012 *Realization polytopes for the degree sequence of a graph.* 26th Midwest Conference on Combinatorics, Cryptography, and Computing, Southern Utah University, Cedar City, UT.
- June 2012 *2-switches and isomorphism classes.* SIAM Conference on Discrete Mathematics (DM12), Halifax, Nova Scotia, Canada.
- Apr. 2012 *2-switches and isomorphism classes.* MAA Rocky Mountain Section Meeting, Denver, CO.
- Nov. 2011 *Playing to Win and Tetris, Tatami, and Terrific Tilings.* Black Hills Math Circle meetings, Spearfish, SD.
- Apr. 2011 *Residues and independence numbers of unigraphs.* MAA Rocky Mountain Section Meeting, Boulder, CO.
- Mar. 2011 *Getting pi (with a little help from my friends).* Honors Program/Math Club Lecture, Black Hills State University, Spearfish, SD.
- Aug. 2010 *On antimagic labelings of graphs.* MathFest 2010, Pittsburgh, PA.
- June 2010 *Degree sequences, vertex substitutions, and matrogenic graphs.* SIAM Conference on Discrete Mathematics (DM10), Austin, TX.
- Apr. 2010 *Degree sequences, vertex substitutions, and matrogenic graphs.* MAA Rocky Mountain Section Meeting, Fort Collins, CO.
- Jan. 2009 *Reconstructing graphs given only a few marked cards.* MAA General Contributed Paper Session, Joint Mathematics Meetings, Washington, D.C.
- Nov. 2008 *A_4 -structures, decomposition, and balanced graphs.* Forty-seventh Midwest Graph Theory Conference, Chicago, IL.
- Oct. 2008 *Canonical decomposition of graphs and antimagic labeling.* Contributed Paper Session, Fall Central Section Meeting, AMS, Kalamazoo, MI.

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- June 2008 *The A_4 -structure of a graph.* SIAM Conference on Discrete Mathematics (DM08), Burlington, VT.
- Oct. 2007 *Pseudo-split graphs, a decomposition method, and the chair graph.* Forty-fifth Midwest Graph Theory Conference, Detroit, MI.
- May 2007 *The degree-associated reconstruction number of a graph.* Forty-fourth Midwest Graph Theory Conference, Dayton, OH.
- Nov. 2006 *Graph classes characterized by both degree sequences and forbidden subgraphs.* Forty-Third Midwest Graph Theory Conference, Fort Wayne, IN.
- June 2006 *Graph families characterized by both degree sequences and forbidden subgraphs.* SIAM Conference on Discrete Mathematics (DM06), Victoria, BC, Canada.
- Apr. 2006 *Degree-sequence-forcing sets II.* Graduate Student Combinatorics Conference, Madison, WI.
- 2005-2022 Twenty-three contributed talks in seminars at the University of Rhode Island, Brigham Young University, Black Hills State University, and the University of Illinois at Urbana-Champaign.

Workshop attended

Algebraic Graph Theory (Rocky Mountain Mathematics Consortium Summer School), University of Wyoming, June 2013

ADDITIONAL PUBLICATIONS

(with W. Edwin Clark) *Elementary Number Theory*, LibreTexts, 2021—present, available at <https://math.libretexts.org/>.

Open Educational Resource (OER) consisting of an online textbook hosted by the LibreTexts library. An extensive update and revision of a 2002 “copyleft” text by W. Edwin Clark (University of South Florida), including several original chapters.

TEACHING EXPERIENCE

Courses taught

Intermediate Algebra	(1 semester, BHSU)
College Algebra	(6 semesters, BHSU)
Quantitative Literacy	(6 semesters, BHSU)
Trigonometry	(2 semesters, BHSU)
Calculus I	(8 semesters, URI, BYU, and UIUC)
Calculus II	(5 semesters, URI and UIUC)
Multivariable Calculus	(1 semester, BYU)
Linear Algebra	(4 semesters, URI, BYU, and BHSU)

Complex Analysis	(1 semester, URI)
Introduction to Proof	(6 semesters, URI and BYU)
Geometry	(7 semesters, URI)
Abstract Algebra I	(9 semesters, URI and BHSU)
Abstract Algebra II	(1 semester, BHSU)
Number Theory	(5 semesters, URI and BHSU)
Discrete Math/Combinatorics	(9 semesters, URI, BYU, and BHSU)
History of Mathematics	(1 semester, URI)
Undergraduate Research/Scholarship	(2 students, multiple semesters, BHSU)
Algebra I [§]	(3 students' independent study, URI)
Combinatorics [§]	(2 semesters, URI)
Graph Theory [§]	(1 student, summer directed study, URI)
Analytic Number Theory [§]	(topics course, 1 semester, URI)
Algebraic Graph Theory [§]	(topics course, 1 semester, URI)
Matroid Theory [§]	(topics course, 1 semester, URI)
Readings in Mathematics [§]	(1 student, 4 semesters, BYU)
Special Problems [§]	(6 students, multiple semesters, URI)

[§] Indicates a graduate level course

Doctoral Students Supervised as Major Professor

- Jean Guillaume, 2016-2019; graduated August 2019.
- Benjamin Lantz, 2017-2020; graduated May 2020.
- Erika Fiore, 2019-present; graduated May 2022. Co-supervised by Cornelis (Kees) de Groot, URI School of Education.
- Emily Barranca, 2021-present.

Masters Thesis Students Supervised

- Lilith Wagstrom, 2022-present.

Workshops, Seminars, and Courses Attended

- *Getting Started with WeBWork* (4-part virtual program of the Mathematical Association of America), June 2021.
- *Mastery Grading Conference: University STEM Focus* (virtual conference), June 2021.
- *Online Pedagogy*, URI Office for the Advancement of Teaching and Learning; certificate awarded January 2021.
- *Mastery Grading Conference* (virtual conference), July 2020.
- *Advocating for Students of Color: There's More You Can Do*, American Mathematical Society. Multiple online workshops during Fall 2020.
- *Basic Brightspace Training*, URI Office for the Advancement of Teaching and Learning, Spring 2020.

- *Building an Equitable and Inclusive STEM community: Best Practices for Faculty* (2020 Massachusetts Project Kaleidoscope Network Winter Meeting), Framingham State University, January 2020.
- *Mental Health First Aid* (a program of the National Council for Behavioral Health), University of Rhode Island, December 2019. Certified through 2022 as a Mental Health First Aider.
- *High Impact Teaching Seminar*, URI Office for the Advancement of Teaching and Learning, June 2017.
- *Inquiry Based Learning* (MAA PREP workshop), U. Texas at Austin, May 2010.

Undergraduate and High School Honors and Research Projects Supervised

- *Patterns in Realization Graphs*. Student: Nathan Haronian, Wheeler School (Providence, RI) and Brown University (Providence, RI). 3/2021 – 1/2022
- *A University Forest Fire: Examining the Spread of the Coronavirus Through College Social Networks Using a Modified Forest Fire Probabilistic Model* (URI Honors). Student: Raechel Griffin, University of Rhode Island. 1/2021 – 5/2021
- *Solving a Rubik's Cube: An Analysis of Problem Solving Strategies* (URI Honors). Student: Nicole Kerrigan, University of Rhode Island. 1/2017 – 5/2017
- *Tree-depths of Circulant Graphs*. Students: Nathan Graff and Jason Young, University of Rhode Island. 2/2017 – 4/2017
- *Towards a Characterization of Realization Graphs*. Student: Cleber Oliveira Damasceno, University of Rhode Island. 2/2016 – 5/2016
- *Families of Graphs for which the Independence Number Equals the Havel-Hakimi Residue*. Student: Grant Molnar, Brigham Young University. 9/2013 – 4/2014
- *Degree-associated Reconstruction Numbers of Split Graphs*. Student: Benjamin Morrell, Brigham Young University. 12/2012 – 4/2013
- *Generating Cwatsets from Multiple Graphs*. Student: Jennifer Johnson, Black Hills State University. 9/2011 – 5/2012
- *The Easy Strategy for the Lights Out Game*. Student: Tyler Wendell, Black Hills State University. 9/2010 – 5/2012

AWARDS AND HONORS

- MAA National Project NExT Fellow, 2009-2010.
- Department TA Instructional Award, April 2008, Mathematics Department, University of Illinois at Urbana-Champaign.
- Named on List of Teachers Ranked as Excellent by Their Students 10 times, 2004-2009, University of Illinois at Urbana-Champaign, achieving the "Outstanding" rating 4 times.

GRANTS

- (not funded) NSF S-STEM Grant. Title: *Comprehensive Support for Academically Talented Students (CSATS)*. Co-Principal Investigator (Bryan Dewsbury, PI). Submitted 2020. Requested Amount: \$999,829.
- (not funded) NSF S-STEM Grant. Title: *Scholarship Program to Increase Numbers and Strengthen the Workforce in Technology and Mathematics (SPIN+)*. Co-Principal Investigator (Noah Daniels, PI). Submitted 2019. Requested Amount: \$999,765.
- Career Enhancement Grant, 2017-2018, URI Council for Research. Title: *Using Eigenvalues to Predict Structure in Networks*. Principal Investigator. Amount: \$3800.
- (not funded) NSF S-STEM Grant. Title: *Scholarship Program to Increase Numbers and Strengthen the Workforce in Technology and Mathematics (SPIN+)*. Principal Investigator (Noah Daniels and Bryan Dewsbury, co-PIs). Submitted 2018. Requested Amount: \$999,999.
- NSF Standard Grant DUE-1259473, 2013-2018, National Science Foundation. Title: *Scholarship Program to Increase Numbers and Strengthen the Workforce in Technology and Mathematics (SPIN+)*. Co-Principal Investigator (Nancy Eaton, PI; Joan Peckham, Former PI). Amount: \$638,939. Added as Co-PI in 2015.
- (not funded) NSF S-STEM Grant. Title: *Scholarship Program to Increase Numbers and Strengthen the Workforce in Technology and Mathematics (SPIN+)*. Principal Investigator (Noah Daniels and Bryan Dewsbury, co-PIs). Submitted 2017. Requested Amount: \$996,999.
- NSF Standard Grant DMS-1341413, January-October 2014, National Science Foundation. Title: *NSF/CBMS Regional Conference in the Mathematical Sciences – “Combinatorial Zeta and L-functions”*. Co-Principal Investigator (Jasbir Chahal, PI). Amount: \$37,253.
- Dolciani Mathematics Enrichment Grant, 2011-2012, Mathematical Association of America. Title: *Black Hills Math Circle Program*. Principal Investigator (with P. Nag). Amount: \$6000. Coauthor on successful 2012-2013 renewal.
- Faculty Research Grant, 2010-2011, BHSU Faculty Research Committee. Principal Investigator. Amount: \$2500.

SERVICE ACTIVITIES

Departmental and University Service

- Chair, Undergraduate Committee, URI Department of Mathematics and Applied Mathematical Sciences (“Math Department”), Fall 2021–present.
- Administrator of departmental membership in the Mathematical Association of America, Sept 2021–present.
- URI College of Arts and Sciences Committee on Assessment, Fall 2020–present (term expires in 2023).
- Outcomes Assessment Committee, URI Math Department, 2017–present; Chair, 2019–present.

- Graduate Committee, URI Math Department, 2015–present; Undergraduate Committee, 2018–present.
- Technology Committee, URI Math Department, 2015–present; Website Committee, 2020–present.
- Search committee member, URI Math Department, Fall 2021—Spring 2022
- Course coordinator for MTH 141 (first-semester calculus, typically 5-10 sections of 40), URI Math Department, Fall 2019–Spring 2022.
- 2021 Assessment Fellow for the URI Division of Student Learning, Outcomes Assessment and Accreditation, Summer 2021.
- URI Faculty Senate, May 2017-May 2020; General Education Subcommittee, Sept. 2018-May 2020.
- Faculty advisor, URI University College for Academic Success, 2015-2019.
- Organizer, URI Math Department Writing Group, 2015-2016.
- Academic Program Review Committee, URI Math Department, 2015-2016.
- Curriculum Committee, BYU Math Department, 2013-2014.
- Organizer, Graphs and Matrices Seminar, BYU Math Department, 2012-2014.
- Math 112 (first-semester calculus) Committee, BYU Math Department, 2012-2013.
- University Honors Advisory Committee, Black Hills State University, 2010-2012.
- Hiring Committee, BHSU Math Department, 2010, 2011.
- Math 102 (college algebra) course coordinator, Black Hills State University, 2009-2011.
- Teaching Awards Committee, UIUC Math Department, 2009.

Community Outreach

- Instructor, BYU Math Camp, June 2014 – July 2014.
- Session leader, BYU Math Circle, September 2012 – April 2014.
- Co-director, Black Hills Math Circle, April 2011 – July 2012.

Service to the Profession

- Project NExT Consultant, November 2021 – present.
- Steering Committee, Northeast Combinatorics Network, Fall 2021 – present.
- Mentor, The National Alliance for Doctoral Studies in the Mathematical Sciences, Jul 2020 – present.
- Webmaster, MAA Northeastern Section, November 2015 – present.
- Judge, Poster Session, Joint Mathematics Meetings 2021.
- Organizer, NSF-CBMS Regional Research Conference on Combinatorial Zeta and L-functions, Sundance, Utah, May 2014.
- Section NExT Steering Committee, MAA Rocky Mountain Section, Apr 2010 – Aug 2012.
- Abstracts Judge, Eighth Annual Young Mathematicians Conference, 2011.

- Co-organized Project NExT panel “Supervising Senior Research/Capstone Projects,” MAA MathFest 2010.
- Judge, MAA Undergraduate Student Paper Session, MathFest 2010.
- Reviewer for Mathematical Reviews and Zentralblatt MATH; referee for *Ars Combinatoria*; *The Australasian Journal of Combinatorics*; *Bulletin of the ICA*; *Bulletin of the Iranian Mathematical Society*; *Commentationes Mathematicae Universitatis Carolinae*; *Discrete Applied Mathematics*; *Discrete Mathematics*; *Discrete Mathematics, Algorithms and Applications*; *Discrete Mathematics & Theoretical Computer Science*; *Discussiones Mathematicae Graph Theory*; *Electronic Journal of Combinatorics*; *Graph Theory Notes of New York*; *Information Processing Letters*; *International Journal of Graph Theory and Its Applications*; *Journal of Combinatorics*; *Journal of Graph Theory*; and *Transactions on Combinatorics*.

PROFESSIONAL ORGANIZATIONS

Member of the American Mathematical Society (AMS), Mathematical Association of America (MAA), New England Community for Mathematics Inquiry in Teaching (NE-COMMIT), and Society for Industrial and Applied Mathematicians (SIAM).