

RANTHONY A.C. EDMONDS

Department of Mathematics • The Ohio State University
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EDUCATION

- PhD in Mathematics:** University of Iowa, Iowa City, IA August 2018
Dissertation: *Factorization in Polynomial Rings with Zero Divisors*
Advisor: Professor Daniel D. Anderson
- M.S. in Mathematics:** University of Iowa, Iowa City, IA May 2015
- M.S. in Mathematical Sciences:** Eastern Kentucky University, Richmond, KY May 2013
Thesis: *Amicable Pairs in the Gaussian Integers*
Advisor: Professor Patrick Costello
- B.S. in Mathematics:** University of Kentucky, Lexington, KY May 2011
- B.A. in English:** University of Kentucky, Lexington, KY May 2011
Minor: African American Studies
- Certifications:**
- Graduate Certificate in Online Teaching:** University of Iowa, Iowa City, IA December 2017
Department of Psychological & Quantitative Foundations, 12 credit hours
- Graduate Certificate in College Teaching:** University of Iowa, Iowa City, IA December 2017
Office of Graduate Teaching Excellence, 12 credit hours

EMPLOYMENT

- Phillip Griffiths Assistant Research Professor** August 2023 - July 2026
Duke University Durham, NC
- National Science Foundation Postdoctoral Fellow** January 2022 - Present
Supported by NSF MPS Ascending Fellowship Award # 2138110 Columbus, OH
Host Institutions: The Ohio State University/Duke University
Sponsoring Scientists: Facundo Mémoli (Ohio State)/Jonathan Mattingly (Duke)
- Postdoctoral Researcher** August 2020 - December 2021
The Ohio State University Columbus, OH
Supported by NSF RTG Grant Algebraic Topology and Its Applications # 1547357
- Ross Assistant Professor** August 2018 - August 2020
The Ohio State University Columbus, OH

RESEARCH INTERESTS

- **Commutative Algebra:** Factorization, Commutative Rings, Zero Divisors, Numerical Semigroup Algebras
- **Applied Algebra:** Topological Data Analysis, Persistent Homology, Algebraic Topology
- **Data Science:** Unsupervised Learning, Hierarchical Clustering, Geospatial Data Analysis
- **Mathematics Education:** Online Teaching, Flipped Instruction, Service Learning, Black Math History
- **Social Justice:** Redistricting, Community, Storytelling, Diversity, Equity, and Inclusion in Mathematics

PUBLICATIONS

Research

- Erin Chambers, Moon Duchin, Ranthony A.C. Edmonds, Parker Edwards, JN Matthews, Anthony E. Pizzimenti, Chanel Richardson, Parker Rule, and Ari Stern. *Aggregating Community Maps*, 2022. (accepted to SIGSPATIAL '22: The 30th International Conference on Advances in Geographic Information Systems).
- Austin Antoniou, Ranthony A.C. Edmonds, Bethany Kubik, Christopher O'Neil, and Shannon Talbott. *On Atomic Density of Numerical Semigroup Algebras*, 2022. (to appear in Journal of Commutative Algebra) [arXiv:2003.01710]
- Ranthony A.C. Edmonds and Jason Juett. *Associates, Irreducibility, and Factorization Length in Monoid Rings with Zero Divisors*, Communications in Algebra, 49:5, 1836-1860 (2021).
- D.D. Anderson and Ranthony A.C. Edmonds. *Unique Factorization in Polynomial Rings with Zero Divisors*, Journal of Algebra and Its Applications Vol. 20, No. 07, (2021).
- Patrick Costello and Ranthony A.C. Edmonds. *Gaussian Amicable Pairs*. Missouri J. Math. Sci. 30 (2018), 107-116.
- Ranthony A.C. Edmonds. *Factorization in Polynomial Rings with Zero Divisors*. Dissertation. University of Iowa, 2018.
- Ranthony A. Clark. *Gaussian Amicable Pairs*. Master's Thesis. Eastern Kentucky University, 2013.

Expository

- Ranthony A.C. Edmonds and Omayra Ortega. *Perseverance and Representation: A Memorial for Katherine Coleman Goble Johnson August 26, 2018 - February 24, 2020*. Notices of the American Mathematical Society, March 2021.
- Ranthony A.C. Edmonds and John H. Johnson, Jr. *Intersections of Mathematics and Society*. Early Career Section of the Notices of the American Mathematical Society, February 2021.
- Alexander J. Barrios, Ranthony A.C. Edmonds, and Roberto Soto. *Math Alliance: Investing in Tomorrow Today*. Count Me In: Community and Belonging in Mathematics by Della Dumbaugh and Deanna Haunsperger, MAA Press [Book Chapter].
- Ranthony A.C. Edmonds and John H. Johnson, Jr. *Exploring Mathematical Careers and Community through the Hidden Figures Story*. The Ohio State University Department of Mathematics Newsletter, Summer 2020.
- Ranthony A.C. Edmonds. *Math Alliance: Field of Dreams Conference*. The Ohio State University Department of Mathematics Newsletter, Autumn 2019.

WORKS IN PROGRESS

Research

- *Gromov Wasserstein Distances Between Spheres* in progress
Shreya Arya, Arnab Auddy, Ranthony A.C. Edmonds, Sunhyuk Lim, Facundo Mémoli, and Daniel Packer
- *Quantifying the Stability of Gerrymandered Maps* in progress
Ranthony A.C. Edmonds, Susan Glenn, Harlin Lee, Soledad Villar

- *Atomic Density and Irreducibles in Power Series Rings over Numerical Semigroup Algebras* in progress
Ranthyony A.C. Edmonds, Bethany Kubik, Christopher O’Neill, and Shannon Talbott
- *Metrics Between Partitioned Spaces* in progress
Ranthyony A.C. Edmonds and Facundo Mémoli
- *Applications of Persistence and Metrics to Factorization in Commutative Rings* in progress
Ranthyony A.C. Edmonds
- *Prison Gerrymandering in Ohio* in progress
Ranthyony A.C. Edmonds

Expository

- *Using Hidden Figures to Center Social and Racial Justice in Undergraduate Mathematics* in progress
(invited article for special edition on Mathematics and Society in Journal of Humanistic Mathematics)
Ranthyony A.C. Edmonds and John H. Johnson, Jr.
- *Hidden Figures Revealed: Dynamic History and Narratives of Black Mathematicians at Ohio State* in progress
(invited article for SIAM News)
Ranthyony A.C. Edmonds
- *Hidden Figures Revealed: Black Math History of The Ohio State University* in progress
Ranthyony A.C. Edmonds and David Goldberg

GRANTS AND FELLOWSHIPS

Awards Supporting Research

- PI: NSF MPS Ascending Postdoctoral Research Fellowship (inaugural recipient) January 2022
\$300,000 award, National Science Foundation Mathematical and Physical Sciences Directorate
Title: “Persistent Homology, Metrics, and Applications on the Collection of Enriched Metric Measure Spaces”
- PI: Racial Justice Seed Grant (inaugural recipient) December 2020
\$25,000 (+\$25,000 matching funds from GAHDT), The Ohio State University Office of Research
Funds to support case study research and website highlighting Black mathematicians from Ohio State
- Co-PI: 35th OSU-Denison Math Conference Funding Proposal April 2019
\$5,000 award, Mathematics Research Institute (MRI) at The Ohio State University
- Sloan Mini-Grant Recipient Spring 2018
\$500 award, Sloan Center at the University of Iowa
Funds used towards purchase of Commutative Algebra textbooks
- Sloan Mini-Grant Recipient Summer 2017
\$500 award, Sloan Center at the University of Iowa
Funds for travel to work on paper *Gaussian Amicable Pairs* with Prof. Patrick Costello
- GAANN Fellowship 2014 to 2015
University of Iowa year two fellowship

- Dean's Graduate Research Fellowship 2013 to 2018
University of Iowa fellowship for first year and dissertation year, along with summer support

Awards Supporting Teaching

- PI: Arts and Sciences Service-Learning Course Proposal Grant April 2019
\$2,000 stipend (+ course release), The Ohio State University Arts & Sciences Curriculum Committee
Funds to develop course *Intersections of Mathematics and Society: Hidden Figures*
- PI: Service-Learning Course Grant March 2019
\$4,000 award (+\$4,000 matching funds), The Ohio State University Office of Service-Learning
Funds to implement course *Intersections of Mathematics and Society: Hidden Figures*
- Teaching as Research (TAR) Fellow December 2017
\$1,000 stipend, Center for the Integration of Research Teaching and Learning (CIRTL)
Funds to support the implementation of a partially flipped classroom using iPad Pro
- Sloan Mini-Grant Recipient Fall 2016
\$500 award, Sloan Center at The University of Iowa
Funds used towards purchase of an iPad Pro

Awards Supporting Conference Travel

- Professional Development Award Fall 2020
up to \$400 award, The Ohio State Postdoctoral Association
Funds to attend Virtual AMS Fall Southeastern Sectional Meeting
- Graduate Student Senate Travel Award Spring 2018
\$750 award, University of Iowa Graduate Student Senate
Funds to attend 2018 Joint Mathematics Meetings in San Diego, CA
- Sloan Mini-Grant Recipient Spring 2017
\$500 award, Sloan Center at the University of Iowa
Funds to attend 2017 MAA MathFest in Chicago, IL
- Sloan Mini-Grant Recipient Spring 2016
\$500 award, Sloan Center at the University of Iowa
Funds to attend 2016 MAA Mathfest in Columbus, OH

AWARDS AND HONORS

- Mathematically Gifted & Black Society of Industrial and Applied Mathematics Early Career Fellow 2022 to 2024
Accepted into inaugural cohort of MSEC Fellows to support early career applied mathematicians
- Top Data Science Project Award, Erdős Institute Fall 2021
Team won award for unsupervised learning project on quantifying special teams in the National Football League
- Project NExT Fellow, Mathematical Association of America 2018 to 2019
Accepted into national program for new mathematics teaching faculty (peach '18 dot)

- Professional Advancement Initiative (PAI) Fellow 2018 to present
NSF Program for underrepresented postdoctoral fellows in STEM at Big 10 Schools
- STEAM Factory: The Ohio State University 2020 to present
Accepted as a member of network focused on outreach and interdisciplinary collaboration in the arts and sciences
- Outstanding Teaching Assistant Award, University of Iowa Council on Teaching 2017
Selected as 1 of 31 from approximately 1400 teaching assistants across all disciplines
- Graduate Teaching Fellowship, University of Iowa Center for Teaching 2016 to 2017
Selected as 1 of 4 graduate students campus-wide for the inaugural cohort
- Iowa Section NExT Fellow, Iowa Section of MAA 2016 to 2017
- EDGE Program, New College of Florida Summer 2013

TEACHING EXPERIENCE

The Ohio State University

- Introduction to Applied Algebraic Topology (Instructor) Spring 2021
This undergraduate course teaches the main concepts in applied algebraic topology with a view towards persistent homology of point clouds for applications to data analysis. Emphasis is on homology of simplicial complexes over a the finite field with two elements. Final project explored topological approaches to studying redistricting.
- Intersections of Mathematics and Society: Hidden Figures (Instructor) Spring 2020, Spring 2021
Co-developed service-learning course for department focused on mathematics of the Space Race and diversity and inclusion in mathematical communities. Established community partnerships for service-learning with Columbus Metropolitan Library and Center of Science and Industry (COSI). Obtained local 'Hidden Figure' mentors for students from JP Morgan & Chase, Honda, Franklin County Coroner's Office, and Columbus City Schools.
- Abstract Algebra 2 (Recitation Leader) Spring 2020
Qualifying Level Graduate Course for PhD Students
- Abstract Algebra 1 (Recitation Leader) Autumn 2019
Qualifying Level Graduate Course for PhD Students
- Calculus 1 (Instructor) Spring 2019
- Calculus 1 Flipped and Flexible (Recitation Leader) Autumn 2018, Spring 2019
Students view departmental lecture videos three days a week on their own and attend recitation twice a week (online or in person) where we reviewed course content in a collaborative group setting using inquiry based learning.

University of Iowa

- Trigonometry, Partially Flipped Classroom (Instructor) Spring 2017
- Basic Algebra (Instructor) Fall 2016
- Math for Business (Head Teaching Assistant) Spring 2016
- Calculus and Matrix Algebra for Business (Head Teaching Assistant) Fall 2015
- Discrete Mathematics, IBL Classroom (Teaching Practicum) Fall 2017

Bluegrass Community and Technical College

- Developmental Math (Adjunct Faculty) Summer 2013, Spring 2013

Eastern Kentucky University

- Developmental Algebra 1 (Instructor) Spring 2013
- Developmental Algebra 1 (Recitation Leader) Fall 2012, Fall 2012
- College Algebra (Recitation Leader) Fall 2011, Spring 2012

The Academy for Scholastic and Personal Success - Cedar Rapids, IA

- Algebra 2, Geometry, Physics (Instructor) June to July 2016
- Trigonometry, Algebra 1, Physics (Instructor) June to July 2015

Upward Bound - Bluegrass Community and Technical College

- Algebra 1, Precalculus (Instructor) June 2011

PEDAGOGICAL SKILLS

- **Online Teaching:** Universal Design for Learning
- **Active Learning Techniques:** Flipped Instruction, Inquiry Based Learning
- **Experiential Learning Techniques:** Service Learning

PRESENTATIONS

Keynote Talks

- "Finding the Right Metrics: Reflections on Research and Justice in the Mathematical Sciences" November 18, 2022
Bolstering the Advancement of Masters in Mathematics (BAAM!) Distinguished Lecture (virtual)
- "Factorization in Polynomial Rings and Numerical Semigroup Algebras" July 7, 2022
EDGE Mega Reunion, Spelman College, Atlanta, GA
- "Factorization in Polynomial Rings and Numerical Semigroup Algebras" June 30, 2022
Conference for African American Researchers in the Mathematical Sciences, Princeton, NJ

- “Math, Metrics, and Democracy” March 26, 2022
MAA Ohio Spring Sectional Meeting, Xavier University, Cincinnati, OH
- “Death to Determinants!” March 25, 2022
MAA Ohio Spring Sectional Meeting, Xavier University, Cincinnati, OH
- “Hidden Figures, Experiential Learning, and Social Justice:
How CIRTL Helped Launch my Academic Career” March 10, 2022
CIRTL Network Semi-annual Meeting (virtual)
- “All the Things They Told Me Not to Do: December 4, 2021
Reflections on Service and Outreach as an Early Career Mathematician”
Online Undergraduate Resource Fair for the Advancement in Academia of Marginalized Mathematicians (virtual)
- “Hidden Narratives in Mathematics” October 7, 2021
Ohio Council of Teachers of Mathematics 71st Annual Conference (virtual)
- “Hidden Narratives in Mathematics: The Power of Storytelling” August 18, 2021
ICERM Public Lecture (virtual)
- “From Hidden Figures to Human Flourishing (w/Francis Su)” March 11, 2021
Webinar: Ohio Mathematics and Science Coalition (virtual)
- “Let’s Break it Down: Atoms in Commutative Rings” March 7, 2020
WimSoCal Symposium: University of California at Irvine, Irvine, CA

Invited Talks

- “TBD” April 14, 2023
Pure Math Seminar: University of North Carolina at Greensboro
- “Death to Determinants” April 12, 2023
Colloquium: University of North Carolina at Greensboro
- “Black Math History and Racial Justice in Mathematics” January 6, 2023
NAM-SIAM Special Session on Quantitative Justice: Joint Mathematics Meetings, Boston, MA
- “Quantifying Communities of Interest in Electoral Redistricting” January 5, 2023
AMS Special Session on Math and Democracy: Joint Mathematics Meetings, Boston, MA
- “Quantifying Stability of Gerrymandered Maps” (Joint with Soledad Villar) October 20, 2022
Trees Redistricting Seminar (virtual)
- “Reflections on Math for Social Good: Hidden Narratives in STEM and Redistricting” April 1, 2022
Mathematics and Social Justice Course Guest Speaker: Swarthmore College (virtual)
- “Breaking It Down: Factorization in Commutative Rings and Things” June 18, 2021
Colloquium: MSRI-UP (virtual)

- “Hidden Figures, Service-learning, and Mathematical Community”
Colloquium: University of Washington (virtual) June 4, 2021
- “Storytelling for Learning and Engagement”
Enriching Scholarship Conference: University of Michigan (virtual) May 3, 2021
- “Factorization in Numerical Semigroup Algebras”
Special Session on Women in Commutative Algebra: AMS Spring Sectional Meeting (virtual) May 2, 2021
- “Hidden Figures, Service-learning, and Mathematical Community”
Teaching and Learning Seminar: University of Kentucky (virtual) March 18, 2021
- “Hidden Figures and Mathematical Community”
Colloquium: Marian University (virtual) February 25, 2021
- “Mathematical Communities and Friendly Numbers”
Columbus Academy Math Club (virtual) February 11, 2021
- “Hidden Figures, Service Learning, and Mathematical Community”
AMS Special Session on Outreach and Engagement: Joint Mathematics Meetings (virtual) January 6, 2021
- “On Atomic Density of Numerical Semigroup Algebras”
AMS Special Session on Commutative Algebra: Joint Mathematics Meetings (virtual) January 6, 2021
- “My Journey in Mathematics” (Plenary Interview)
Field of Dreams Conference (virtual) November 6, 2020
- “On Atomic Density of Numerical Semigroup Algebras”
AMS Special Session on Commutative Algebra: AMS Sectional Meeting (virtual) October 10, 2020
- “Death to Determinants!”
Radical Pi Math Club: The Ohio State University, Columbus, OH (virtual) September 30, 2020
- “Exploring Diversity and Community in Mathematics through the Hidden Figures Story”
Radical Pi Math Club: The Ohio State University, Columbus, OH (virtual) September 23, 2020
- “Connecting the Dots: Dorothy Vaughan and Community in the Hidden Figures Story”
PRiME REU Colloquium Series: Pomona College, Claremont CA (virtual) July 16, 2020
- “Highlighting the Hidden Legacy of Eunice Gray Smith”
MAA Invited Paper Session on African American Women and the Mathematics of Flight:
MAA MathFest, Philadelphia, PA (cancelled COVID-19) July 31, 2020
- “Amicable Pairs: Real and Imaginary Friendly Numbers”
Radical Pi Math Club: The Ohio State University, Columbus, OH November 6, 2019
- “On Their Shoulders: Hidden Figures and my Journey in Mathematics”
Women in the Mathematical Sciences (WIMS): The Ohio State University, Columbus, OH October 22, 2019

- “On Flavors of Factorization in Commutative Rings with Zero Divisors” August 3, 2019
AMS Invited Paper Session on Commutative Algebra: MAA MathFest, Cincinnati, OH
- “Factorization in Polynomial Rings with Zero Divisors” April 13, 2019
7th Midwest Women in Mathematics Symposium: University of Iowa, Iowa City, IA
- “Amicable Pairs: Real and Imaginary Friendly Numbers” March 8, 2019
Colloquium: Bates College, Lewiston, ME
- “Factorization in Polynomial Rings with Zero Divisors” January 18, 2019
NAM Haynes-Granville-Brown Session: Joint Mathematics Meetings, Baltimore, MD
- “Mathematical Atoms: An Introduction to Factorization Theory” October 29, 2018
Colloquium: Centre College, Danville, KY
- “Unique Factorization in Polynomial Rings with Zero Divisors” October 21, 2018
AMS Sectional Meeting: University of Michigan, Ann Arbor, MI
- “Atoms in Mathematics: A Brief Introduction to Factorization Theory” April 26, 2018
Colloquium: Reed College, Portland, OR
- “Factorization in Polynomial Rings with Zero Divisors” April 16, 2018
Ring Theory Seminar: The Ohio State University, Columbus, OH
- “Some Remarks on Uniqueness: Polynomial Rings and My Journey in Mathematics” November 30, 2017
Seminar: William Penn University, Oskaloosa, IA
- “Gaussian Amicable Pairs: Friendly Imaginary Numbers” April 29, 2013
Colloquium: Eastern Kentucky University, Richmond, KY

Contributed Talks

- “Overview of an Introductory Course to Applied Algebraic Topology” September 2022
Nearly Carbon Neutral Geometry and Topology Conference (virtual)
- “Beyond Leaky Pipes: Fostering Pathways and Persistence in the Mathematical Sciences” August 2, 2019
MAA Contributed Paper Session, MAA MathFest, Cincinnati, OH
- “Inquiry Based Learning in Discrete Mathematics” August 2, 2018
MAA Contributed Paper Session, MAA MathFest, Denver, CO
- “Unique Factorization in Polynomial Rings with Zero Divisors” January 12, 2018
AMS Special Session: Joint Mathematics Meetings, San Diego, CA
- “A Case for a Partial Flip: A Blended Model for a College Trigonometry Course” January 10, 2018
MAA Contributed Paper Session: Joint Mathematics Meetings, San Diego, CA
- “A Case for a Partial Flip: A Blended Model for a College Trigonometry Course” October 27, 2017
MAA Iowa Section Meeting: Loras College, Dubuque, IA

- “A Partially Flipped Model for a College Trigonometry Course” July 28, 2017
MAA Contributed Paper Session: MAA MathFest, Chicago, IL
- “Enhancing a Partially Flipped Trigonometry Classroom with Inquiry Based Learning” July 28, 2017
Constructing the Future of IBL Poster Session: MAA MathFest, Chicago, IL
- “Teaching as Research: A Partially Flipped Model for a College Trigonometry Course” June 28, 2017
CIRTL at UIOWA TAR Presentation: University of Iowa, Iowa City, IA
- “Graduate Teaching Fellows: Transforming Teaching at the University of Iowa” April 14, 2017
Graduate Teaching Fellows Showcase: Center for Teaching, University of Iowa, Iowa City, IA
- “Graduate Teaching Fellows: Transforming Teaching at the University of Iowa” March 25, 2017
19th Annual Jakobsen Conference: University of Iowa, Iowa City, IA
- “Gaussian Amicable Pairs: Friendly Imaginary Numbers” April 6, 2013
AMS Sectional Meeting: Transylvania University, Lexington, KY
- “Gaussian Amicable Pairs: Friendly Imaginary Numbers” March 29, 2013
26th Annual Symposium in the Mathematical, Statistical, and Computer Sciences: Richmond, KY

Seminar Talks (Local)

- “Optimal Transport and Metrics between Graph Partitions” September 22 & November 3, 2022
Network and Data Analysis Group: The Ohio State University, Columbus, OH
- “Theoretical Foundations of Clustering” March 3 & 24, 2022
Network and Data Analysis Group: The Ohio State University, Columbus, OH
- “Topological Data Analysis and Electoral Voting” April 8, 2021
Network and Data Analysis Group: The Ohio State University, Columbus, OH
- “Let’s Break it Down: Factorization in Commutative Rings with Zero Divisors” February 7, 2019
Welcome Seminar: The Ohio State University, Columbus, OH
- “The Hilbert Series of the Stanley Reisner Ring” October 18, 2017
Commutative Rings Seminar: University of Iowa, Iowa City, IA
- “Characterizing Stanley Reisner Ideals using Simplicial Complexes” October 11, 2017
Commutative Rings Seminar: University of Iowa, Iowa City, IA
- “Factorization in Commutative Rings with Zero Divisors” October 19, 2016
Commutative Rings Seminar: University of Iowa, Iowa City, IA

SERVICE

Service to the Profession

- Committee on Committees: American Mathematical Society Appointment to begin January 2023
- Associate Editor: The American Mathematical Monthly January 2021 to present

Institutional Service

- Co-organizer: “A Seat at the Table: A Dialogue on Equity and Inclusion in STEM”
Dialogue and Discussion Series at Ohio State sponsored by Department of Mathematics,
Office of Diversity and Inclusion, and Department of African and African-American Studies Spring 2019
- CIRTl Steering Committee 2016, 2017
University of Iowa, Iowa City, IA
- CIRTl Ambassador, CIRTl at the University of Iowa 2016 to 2017

Departmental Service

- Co-organizer: Topology, Geometry, and Data Analysis Seminar 2020, 2021, 2022
The Ohio State University, Columbus, OH
- Co-organizer: Reading Semigroup (Virtual Reading Seminar on Semigroup Theory) Fall 2020
The Ohio State University, Columbus, OH

Organized Conferences

- Columbus Coordinator May 2020
35th OSU-Denison Math Conference, Columbus, OH (cancelled COVID-19)

Organized Conference Sessions

- Panel Organizer: “Hidden Figures Revealed: Reflections from Research on Black Mathematicians” January 2023
Joint Mathematics Meetings, Boston, MA
- Workshop Co-organizer: “Navigating Academia as an Underrepresented Early Career Mathematician” July 2020
MAA MathFest, Philadelphia, PA (cancelled COVID-19)
- Contributed Paper Session Co-organizer: “Equity, Diversity, and Inclusion in Mathematics” July 2020
MAA MathFest, Philadelphia, PA (cancelled COVID-19)
- Contributed Paper Session Co-organizer: “Equity, Diversity, and Inclusion in Mathematics” July 2019
MAA MathFest, Cincinnati, OH
- Workshop Co-organizer: “Maximizing Student Outcomes in Flipped Classrooms” January 2019
Joint Mathematics Meetings, Baltimore, MD

Workshops Facilitated

- “Executing Your Teaching As Research Project (TAR) Project: Considerations for Implementation” July 2018
CIRTl Summer Series: University of Iowa, Iowa City, IA
- “Universal Design for Learning (UDL) in the College Classroom” March 2017
Center for Teaching, University of Iowa, Iowa City, IA
- Sonia Kovalevsky Day Event Organizer, Theme: Math Girls R.O.C.K. March 2017
University of Iowa Department of Mathematics, Iowa City, IA

Events

- Networking Participation Recipient
Iowa STEM Pre-service Teacher Conference, Kirkwood at University of Iowa, Coralville, IA March 2017
- TA Troubleshooting Case Studies Facilitator
Graduate College New TA Orientation, University of Iowa, Iowa City, IA August 2016
- Sonia Kovalevsky Day Event Volunteer: Jeopardy Room
University of Kentucky Department of Mathematics, Lexington, KY October 2011

Panels

- Panelist: "Discussion On Intersections Between Data Science, Mathematics and Social Justice"
NAM-SIAM Mini Symposium on Quantitative Justice: Joint Mathematics Meetings, Boston, MA January 5, 2023
- Panelist: "Fields of Success"
Field of Dreams Conference, Institute for Mathematics and its Applications, Minneapolis, MN November 4, 2022
- Panelist: "Life with a PhD"
Graduate Research Opportunities for Women, Duke University, Durham, NC October 23, 2022
- Panelist: "Teaching Undergraduate Topology"
Nearly Carbon Neutral Geometry and Topology Conference (virtual) September 24, 2022
- Panelist: "Redistricting in Ohio"
Redistricting Program for United Way of Central Ohio May 12, 2022
- Panelist: "Mentoring Panel"
Underrepresented Students in Topology and Algebra Research Symposium (ICERM) April 29, 2021
- Panelist: "The Mathematician's Role in Society"
Lunch in the Time of COVID: UC Santa Cruz April 28, 2021
- Panelist: "Graduate Study and Careers in Academia"
Graduate TA Q & A Panel: San Diego State University March 26, 2021
- Panelist: "Science Fiction vs Science Fact in Hidden Figures"
Monthly Movie Night - OSU Department of Astronomy and Department of Mathematics December 9, 2020
- Panelist: "How Completing a TAR Project Impacted my Career"
CIRTL Networking Presentation CIRTL at The University of Iowa, Iowa City, IA November 16, 2020
- Panelist: Mentoring Panel
USTARS 2020: University of Iowa, Iowa City, IA (cancelled COVID-19) April 4, 2020
- Panelist: "Hidden Figures: eSTEAMed Women"
11th Annual Gathering of Women, Society of Sisters, Columbus, OH (cancelled COVID-19) March 25, 2020

- Panelist: “How Do You Know When You Know Math?”
Field of Dreams Conference, St. Louis, MO November 16, 2020
- Panelist: “Educating Black Girls and Women in STEM Fields”
African American & African Studies Community Extension Center, Columbus, OH September 28, 2019
- Panelist: “Fields of Success”
Field of Dreams Conference, St. Louis, MO November 2, 2018
- Panelist: “New TA Seminar”
TA Seminar, University of Iowa Department of Mathematics, Iowa City, IA December 4, 2017
- Panelist: “What to do Post Qual/Pre-Comp”
University of Iowa Department of Mathematics, Iowa City, IA November 16, 2017
- Panelist: “Hidden Figures Revealed”
Adler Planetarium and DuSable Museum of African American History March 23, 2017
- Panelist: “Graduate College Experiences”
Graduate College Orientation, University of Iowa, Iowa , City, IA August 16, 2017
- Panelist: “Teaching as a Transferable Skill for Your Career”
Graduate College Orientation (CIRTL) at University of Iowa, Iowa City, IA August 16, 2017
- Panelist: “University of Iowa Black Math PhDs”
Academy for Scholastic and Personal Success, Cedar Rapids, IA June 23, 2017
- Panelist: “Balancing Teaching and Research”
New TA Seminar, University of Iowa Department of Mathematics December 5, 2016
- Moderator: “Doctoral Experiences”
Field of Dreams Conference, St. Louis, MO November 6, 2016
- Organizer/Moderator: “University of Iowa Black Math PhDs”
The Academy for Scholastic and Personal Success, Cedar Rapids, IA June 15, 2016
- Co-organizer/Moderator: “Career Panel”
Sonia Kovalevsky Day, University of Iowa Department of Mathematics April 2015
- Panelist: “Being a Teaching Assisant”
Prospective Student Week, University of Iowa Department of Mathematics April 2016

Mentoring Activities

- Unofficial Mentoring to Women and Underrepresented Students 1-3 hrs/week
- F-GAP Program Faculty Facilitator 2019
National Alliance for Doctoral Studies in the Mathematical Sciences

- Pre-doctoral Mentor 2019 to present
National Alliance for Doctoral Studies in the Mathematical Sciences
- Invite a Professor to Lunch 2018, 2019
College of Arts and Sciences Program, The Ohio State University, Columbus, OH
- First Year Buddy 2016
Mentoring Program for First Year Graduate Students, University of Iowa, Iowa City, IA

PRESS

Podcasts

- Episode 69: Fundamental Theorem of Arithmetic, Social Justice, and Apple Pie Meade August 2021
My Favorite Theorem
- A Classroom Where Math and Community Intersect April 2021
Short Wave by National Public Radio

Features

- Women's History Month Honoree March 2022
Joint Committee on Women in Mathematics
- Graduate Teaching Fellow Alumni Spotlight February 2022
The University of Iowa Office of Teaching, Learning, and Technology
- Department of Mathematics Martin Luther King, Jr. Day Honoree January 2022
Houghton University
- Mathematician featured in "Algebra All Day" Box for 3rd to 8th grade girls April 2021
Black Girl MATHgic
- Black History Month Honoree February 2021
Mathematically Gifted and Black
- Mathematician Women Crush Wednesday December 2017
Vanguard STEM

PROFESSIONAL DEVELOPMENT

Certificates

- The Erdős Institute: The Ohio State University, Columbus, OH December 2021
Data Science Bootcamp, 10 weeks
- Course Design Institute: Service Learning May 2019
University Institute for Teaching and Learning (UITL), The Ohio State University, Columbus, OH
Five part workshop to design a course with hands-on guidance from UITL staff

- CIRTl Associate June 2016
Center for the Integration of Research Teaching and Learning, University of Iowa, Iowa City, IA
Six workshops on evidence-based teaching, learning communities, and learning through diversity

Workshop/Program Participation

- Interdisciplinary and Critical Data Science Motivated by Social Justice January 2023
Institute for Mathematical and Statistical Innovation, University of Chicago, Chicago, IL
Three week workshop on data science for social good leveraging techniques from topological data analysis.
- AMS Mathematics Research Community June 2022
American Mathematical Society, Beaver Hollow, New York
One week research workshop on 'Data Science at the Crossroads of Analysis, Topology, and Geometry'
- Broadening Participation: MPS 2020 Workshop for New Investigators November 2020
National Science Foundation, University of Florida
Two day workshop for future principal investigators to learn NSF Review Process
- Faculty Success Program Summer 2020
National Center for Faculty Development and Diversity (NCFDD)
12 Week Online Research and Writing Productivity Program
- MSRI Modern Math Workshop October 2019
SACNAS: Society for the Advancement of Chicanos and Native Americans in the Sciences, Honolulu, HI
- PAI Postdoc Workshop June 2019
Big Ten Academic Alliance, Rosemont, IL
- Early Career Faculty Workshop April 2019
USTARS: Underrepresented Students in Algebra and Topology Research Symposium, Iowa State, Ames, IA
- Planning and Writing Successful Proposals Seminar September 2018
AtKisson Training Group, LLC, Columbus, OH
- MAA Project NExT 2018, 2019
MAA Math Fest 2018, Joint Mathematics Meetings 2019, MAA MathFest 2019
- Iowa Section NExT Workshop October 2016
MAA Iowa Section Meeting, Loras College, Dubuque, IA
- Effective Teaching Institute January 2016
Center for Teaching, University of Iowa, Iowa City, IA

Reading Groups

- Text: MAA Instructional Practices Guide Fall 2018
The Ohio State University Department of Mathematics

Graduate Education Courses

- Web Based Learning Fall 2017
- ePortfolio in College Teaching Fall 2017
- Practicum in College Teaching Fall 2016, Fall 2017
- Tools and Utilities for Online Teaching Fall 2016
- Seminar in College Teaching Spring 2016
- Universal Design & Accessibility Online Spring 2016
- Design of Instruction Fall 2015

CONFERENCES ATTENDED

Conferences Attended

- Joint Mathematics Meetings, Boston, MA January 2023
- Field of Dreams, Institute for Mathematics and its Applications, Minneapolis, MN November 2022
- Graduate Research Opportunities for Women, Duke University, Durham, NC October 2022
- Nearly Carbon Neutral Geometry and Topology Conference (virtual) September 2022
- VSU CBMS Conference on Topological Data Analysis and Persistence Theory, Valdosta, GA August 2022
- SIAM Annual Meeting (AN22), Pittsburgh, PA July 2022
- EDGE Mega Reunion, Spelman College, Atlanta, GA July 2022
- Conference for African American Researchers in the Mathematical Sciences, Princeton, NJ June 2022
- Algebraic Topology: Methods, Computation and Science (ATMCS 10), Oxford, England June 2022
- MAA Ohio Spring Sectional Meeting, Xavier University, Cincinnati, OH March 2022
- AMS Sectional Meeting (virtual, formerly at San Francisco State University) May 2021
- USTARS (virtual, ICERM) April 2021
- paraDIGMS (virtual) April 2021
- Mathematical and Computational Approaches to Social Justice, ICERM (virtual) March 2021
- Joint Mathematics Meeting (virtual) January 2020
- paraDIGMS (virtual) November 2020
- Field of Dreams (virtual) November 2020
- AMS Sectional Meeting (virtual, formerly at University of Tennessee at Chattanooga) October 2020
- MAA MathFest, Philadelphia, PA (cancelled COVID-19) July 2020
- 35th OSU-Denison Math Conference (postponed COVID-19) May 2020
- CAZoom: Virtual Commutative Algebra Conference April 2020
- USTARS, University of Iowa, Iowa City, IA (cancelled COVID-19) April 2020
- WimSoCal, University of California at Irvine, Irvine, CA March 2020
- Field of Dreams, St. Louis, MO November 2019
- SACNAS, Honolulu, HI October 2019
- Congressional Black Caucus, Washington D.C. September 2019
- MAA MathFest, Cincinnati, OH July 2019
- USTARS, Iowa State University, Ames, IA April 2019

- 7th Midwest Women in Mathematics Symposium, University of Iowa, Iowa City, IA April 2019
- Joint Mathematics Meeting, Baltimore, MD January 2019
- Field of Dreams, St. Louis, MO November 2018
- AMS Sectional Meeting, University of Michigan, Ann Arbor, MI October 2018
- MAA MathFest, Denver, CO July 2018
- Joint Mathematics Meetings, San Diego, CA January 2018
- Field of Dreams, St. Louis, MO November 2017
- MAA Iowa Section Meeting, Loras College, Dubuque, IA October 2017
- MAA MathFest, Chicago, IL July 2017
- Constructing the Future of Inquiry-Based Learning (IBL), Chicago, IL July 2017
- 19th Annual Jakobsen Conference, University of Iowa, Iowa City, IA March 2017
- Field of Dreams, St. Louis, MO November 2016
- MAA Iowa Section Meeting, Grandview University, Des Moines, IA October 2016
- MAA MathFest, Columbus, OH August 2016
- USTARS, University of California at Berkeley, Berkeley, CA April 2014
- Field of Dreams, Phoenix, AZ November 2014
- AMS Sectional Meeting, Transylvania University, Lexington, KY April 2013
- Joint Mathematics Meeting, Boston, MA January 2012
- MAA MathFest, Lexington, KY August 2011