

# MADLINE LOCUS DAWSEY

## CURRICULUM VITAE

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Department of Mathematics  
University of Texas at Tyler  
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Tyler, TX 75799

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[Webpage](#), [Personal Webpage](#)

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## EDUCATION

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Ph.D. in Mathematics, Emory University 2019

Advisor: Dr. Ken Ono

Dissertation: *New Results on Partitions, Prime Numbers, and Moonshine*

B.S. in Mathematics, University of Georgia 2014

A.B. in Italian, University of Georgia 2014

## RESEARCH INTERESTS

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Analytic and combinatorial number theory including integer partitions, modular forms, arithmetic and analytic densities, and digital representations

## POSITIONS HELD

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Associate Professor, University of Texas at Tyler 2024 – present

Assistant Professor, University of Texas at Tyler 2019 – 2024

Research Assistant, Emory University 2019

Teaching Assistant, Emory University 2015 – 2018

## PUBLICATIONS

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\*indicates an undergraduate student author, \*\*indicates a graduate student author

### RESEARCH PUBLICATIONS

1. C. Frechette\* and M. Locus\*. Combinatorial Properties of Rogers-Ramanujan-Type Identities Arising from Hall-Littlewood Polynomials. *Annals of Combinatorics*, **20**: 2 (2016), 345-360.
2. M. Locus\*\* and I. Wagner\*\*. Congruences for Powers of the Partition Function. *Annals of Combinatorics*, **21**: 1 (2017), 83-93.
3. E. Alwaise\*, R. Dicks\*, J. Friedman\*, L. Gu\*, Z. Harner\*, H. Larson\*, M. Locus\*\*, I. Wagner\*, and J. Weinstock\*. Shifted distinct-part partition identities in arithmetic progressions. *Annals of Combinatorics*, **21**: 4 (2017), 479-494.
4. M. Locus\*\*. Conjugacy growth series for finitary wreath products. *Research in Number Theory*, **3**: 7 (2017).

- M. Locus\*\*. Erratum to: Conjugacy growth series for finitary wreath products. *Research in Number Theory*, **3**: 15 (2017).
5. M. L. Dawsey\*\*. A new formula for Chebotarev densities. *Research in Number Theory*, **3**: 27 (2017).
  6. M. L. Dawsey\*\* and R. Masri. Effective bounds for the Andrews spt-function. *Forum Mathematicum*, Vol. 31, Issue 3 (2019), 743-767.
  7. M. L. Dawsey\*\*, K. Ono, and I. Wagner\*\*. Multiquadratic fields generated by characters of  $A_n$ . *Journal of Algebra*, Volume 533 (2019), 339-343.
  8. M. L. Dawsey\*\* and K. Ono. Higher width moonshine. *Advances in Mathematics*, Volume 360 (2020). DOI: <https://doi.org/10.1016/j.aim.2019.106896>.
  9. M. L. Dawsey, K. Ono, and I. Wagner. Fields generated by characters of finite linear groups. *Archiv der Mathematik* **116** (2021), 487-500.
  10. M. L. Dawsey and D. McCarthy. Generalized Paley graphs and their complete subgraphs of orders three and four. *Research in the Mathematical Sciences* **8**: 18 (2021).
  11. M. L. Dawsey and B. Sharp\*. Self-conjugate  $t$ -core partitions and applications. *Australasian Journal of Combinatorics* **82(2)** (2022), 212-227.
  12. M. L. Dawsey, T. Russell\*, and D. Urban\*\*. Derivatives and Integrals of Polynomials Associated with Integer Partitions. *Journal of Integer Sequences* **25** (2022), Article 22.5.1.
  13. M. L. Dawsey, M. Just\*\*, and R. Schneider. A “supernormal” partition statistic. *Journal of Number Theory* **241** (2022), 120-141.
  14. E. Cochran\*, M. L. Dawsey, E. Harrell\*, and S. Saunders\*. Bijections, generalizations, and other properties of sequentially congruent partitions. *Ramanujan Journal* (2023). DOI: <https://doi.org/10.1007/s11139-023-00728-y>.
  15. K. Anders, M. L. Dawsey, R. Gupta, and J. Vandehey. Non-standard binary representations and the Stern sequence. *Electronic Journal of Combinatorics* Volume 31, Issue 4, Article Number P4.39 (2024).
  16. A. Botkin\*\*, M. L. Dawsey, D. J. Hemmer, M. R. Just, and R. Schneider. Partition-theoretic model of prime distribution. *Journal of Number Theory* **284** (2026), 104-130. DOI: <https://doi.org/10.1016/j.jnt.2025.12.008>.
  17. W. Craig, M. L. Dawsey, and G.-N. Han. Inequalities and asymptotics for hook numbers in restricted partitions. *Journal of Combinatorial Theory, Series A*, Volume 221, Article Number 106176 (2026). DOI: <https://doi.org/10.1016/j.jcta.2026.106176>.
  18. K. Anders, M. L. Dawsey, R. Gupta, N. Lebowitz-Lockard, and J. Vandehey. Non-standard quaternary representations and the Fibonacci sequence. *Discrete Math.* Volume 349, Issue 12 (2026), Article 115285. DOI: <https://doi.org/10.1016/j.disc.2026.115285>.
  19. K. Anders, M. L. Dawsey, and J. Vandehey. Non-standard Zeckendorf decompositions; or, Tribonacci within Fibonacci. *Fibonacci Quart.*, 1-7 (2026). DOI: <https://doi.org/10.1080/00150517.2026.2676035>.

## **SUBMITTED RESEARCH**

1. M. L. Dawsey and R. Gupta. On summation formulas associated with a general class of arithmetical functions. Submitted.

2. M. L. Dawsey, M. Jeske\*, A. Martinez\*, A. Russo\*, and M. Taylor\*. Combinatorial properties of standard Young tableaux and their connections to permutations. Submitted.
3. K. Anders, M. L. Dawsey, B. Reznick, and S. Sisneros-Thiry. Representations of integers as quotients of sums of distinct powers of three. Submitted. Preprint: <https://arxiv.org/abs/2308.07252>.

## **RESEARCH IN PREPARATION**

1. M. L. Dawsey, M. du Preez\*, and R. Van Surksun\*. Algebraic structure from integer partitions. In preparation.
2. K. Anders, M. L. Dawsey, B. Reznick, and S. Sisneros-Thiry. Digraphs for representations of integers as quotients of sums of distinct powers of three. In preparation.

## **CONFERENCE PROCEEDINGS**

1. M. L. Dawsey\*\* and K. Ono. CM Evaluations of the Goswami-Sun Series. *Proceedings of Elliptic Integrals, Elliptic Functions and Modular Forms in Quantum Field Theory*. Zeuthen, Germany (Ed. J. Blumlein, et. al.), Springer (2019), 183-193.
2. M. L. Dawsey and D. McCarthy. Hypergeometric Functions over Finite Fields and Modular Forms: A Survey and New Conjectures. Conference Proceedings: Baylor Analysis Fest - From Operator Theory to Orthogonal Polynomials, Combinatorics, and Number Theory. *Operator Theory: Advances and Applications*, Birkhauser (2021) 41-56.

## **OTHER PUBLICATIONS**

1. Popular magazine article: M. L. Dawsey\*\* and K. Ono. Speed Seeking. *Splash Magazine* (Summer 2019), 38-39.
2. Book chapters
  - (i) Review of “Your hit parade: the top ten most fascinating formulas in Ramanujan’s lost notebook,” by B. C. Berndt and G. E. Andrews. Accepted for publication in *Srinivasa Ramanujan - His Life, Legacy, and Mathematical Influence*. Springer (2024).
  - (ii) Ramanujan and the Nekrasov–Okounkov Formula. Accepted for publication in *Srinivasa Ramanujan - His Life, Legacy, and Mathematical Influence*. Springer (2024).

## **GRANTS**

### **NSF Research Experience for Undergraduates (REU)**

*Senior Personnel*

2022 – 2025

### **NSF-AWM Travel Grant**

*Awarded \$2,300 for travel to the Joint SIAM/CAIMS Annual Meetings, Montréal*

2025

*Awarded \$1,722.18 for travel to the 34th Automorphic Forms Workshop, Utah*

2020

### **AMS-Simons Travel Grant**

2020 – 2022

*Awarded \$5,000 to support travel for research in number theory.*

### **UT Tyler New Faculty Research Grant**

2020 – 2021

*Awarded \$7,149 for travel, supplies, and research assistants for research in number theory.*

## HONORS AND AWARDS

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|----------------------------------------------------------------------------------------------------------|-------------|
| UT Tyler nominee, UT System Regents' Outstanding Teaching Award                                          | 2024, 2025  |
| President's Excellence in Service Award (\$2500), University of Texas at Tyler                           | 2024 – 2025 |
| Innovation in Teaching Award (\$2000), University of Texas at Tyler                                      | 2023 – 2024 |
| Jack and Dorothy Faye White Fellowship for Teaching Excellence (\$2500),<br>University of Texas at Tyler | 2022 – 2023 |
| UT Tyler Department of Mathematics Faculty Teaching Award                                                | 2022 – 2023 |
| Marshall Hall, Jr. Teaching Award, Emory University                                                      | 2018 – 2019 |
| George W. Woodruff Fellowship, Emory University                                                          | 2015 – 2019 |
| SEC Boyd McWhorter Scholar-Athlete of the Year, Southeastern Conference                                  | 2015        |
| NCAA Postgraduate Scholarship, National Collegiate Athletic Association                                  | 2015        |
| AT&T Student Leadership Award, University of Georgia                                                     | 2014        |
| Joel Eaves Scholar-Athlete Award, University of Georgia Athletic Department                              | 2013        |
| Hollingsworth Award, University of Georgia Math Department                                               | 2013        |

## PRESENTATIONS

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### CONFERENCE PRESENTATIONS

\*indicates a plenary talk, †indicates an invited talk

- *Asymptotics for hook numbers in odd and distinct part partitions*† 2026  
AMS Sectional Meeting, Kennesaw State University  
Special Session: Connections between  $q$ -Series, Partitions, and Modular Forms
- *Densities of subsets of primes in the spirit of Alladi*\* 2026  
International Number Theory Conference in honor of Prof. Krishna Alladi's 70th birthday,  
Gainesville, FL
- *An application of hypergeometric functions to graph theory* 2025  
Third Joint SIAM/CAIMS Annual Meetings, Montréal, Québec, Canada  
Minisymposium: Hypergeometric Series and Their Applications
- *Partition-theoretic model of prime distribution*\* 2025  
Southeastern Regional Meetings on Numbers (SERMON), Savannah, GA
- *Partition-theoretic model of prime distribution*† 2025  
AMS Sectional Meeting, Hartford, CT  
Special Session: Partitions and  $q$ -Series
- *Digital representations and special sequences* 2024  
Bayou Arithmetic Research Days (BARD) 4, Tulane University
- *Properties of sequentially congruent partitions*† 2024  
Joint Mathematics Meetings, San Francisco, CA  
Special Session: Partition Theory and  $q$ -Series
- *Binary representations and the Stern sequence*† (virtual talk) 2023  
AMS Sectional Meeting, South Alabama  
Special Session: Experimental Mathematics in Number Theory and Combinatorics

- *A new partition statistic*<sup>†</sup> 2022  
Baylor Analysis Fest (virtual)
- *Student Workshop on Ranks and Cranks*\* 2022  
NSF-CBMS Regional Research Conference Series, University of Texas Rio Grande Valley
- *Interdisciplinary Mathematics Research*<sup>†</sup> 2022  
East Texas Research Conference (virtual)
- *A new partition statistic*<sup>†</sup> 2022  
Joint Mathematics Meetings (virtual)  
Special Session: Early career number theory research with combinatorics, modular forms, and basic hypergeometric series
- *A new partition statistic*\* 2022  
Southern Regional Number Theory Conference, Louisiana State University
- *Modular forms, hypergeometric functions, and Ramsey numbers*<sup>†</sup> 2020  
AMS Sectional Meeting, Pennsylvania State University  
Special Session:  $q$ -Series and Related Areas in Combinatorics and Number Theory
- *Congruences for powers of  $p(n)$* <sup>†</sup> 2019  
AMS Sectional Meeting, University of Florida  
Special Session: Partition Theory and Related Topics
- *Partitions and a conjecture of John Thompson* 2019  
Analytic and Combinatorial Number Theory: The Legacy of Ramanujan, University of Illinois at Urbana-Champaign
- *Moonshine for finite groups*<sup>†</sup> 2019  
Southern Regional Number Theory Conference: Modular Curves, Modular Forms, and Hypergeometric Functions, Louisiana State University
- *Moonshine for finite groups*<sup>†</sup> 2019  
AMS Sectional Meeting, University of Hawaii at Manoa  
Special Session: Recent Advances and Applications of Modular Forms
- *Inequalities satisfied by the Andrews spt-function*<sup>†</sup> 2019  
AMS Sectional Meeting, Auburn University, AL  
Special Session: Experimental Mathematics in Number Theory, Analysis & Combinatorics
- *Moonshine for finite groups* 2019  
Low dimensional topology and number theory XI, Osaka University, Japan
- *CM Evaluations of the Goswami–Sun Series*<sup>†</sup> 2019  
Joint Mathematics Meetings, Baltimore, MD  
Special Session: Partition Theory and Related Topics
- *The Andrews Smallest Parts Partition Function*<sup>†</sup> 2019  
Joint Mathematics Meetings, Baltimore, MD  
Invited Paper Session: Modular Forms: Aesthetics and Applications
- *Higher Width Moonshine* 2018  
New developments in the theory of modular forms over function fields, Centro di Ricerca Matematica, Italy

- *A New Formula for Chebotarev Densities* 2018  
Canadian Number Theory Association XV, Université Laval, Canada
- *Effective Bounds for Andrews' Smallest Parts Function* 2018  
Combinatory Analysis, Pennsylvania State University
- *Effective Bounds for Andrews' Smallest Parts Function* 2018  
Automorphic Forms Workshop, Tufts University, MA
- *A New Formula for Chebotarev Densities* 2017  
International Conference on Number Theory, SASTRA University, India
- *A New Formula for Chebotarev Densities* 2017  
Palmetto Number Theory Series, University of Tennessee
- *Rogers–Ramanujan Series Arising from Hall–Littlewood Polynomials* 2015  
Joint Mathematics Meetings Poster Session, San Antonio, TX

### COLLOQUIUM AND SEMINAR PRESENTATIONS

- *Partition-theoretic model of prime distribution* 2025  
Mathematics Department Colloquium, University of Texas at Tyler
- *Properties of sequentially congruent partitions* 2024  
Online Partitions and  $q$ -Series Seminar (virtual)
- *Binary representations and the Stern sequence* 2023  
Mathematics Department Colloquium, University of Texas at Tyler
- *Adding and Counting: How Hard Can It Be?* 2023  
NSF Research Experience for Undergraduates talk, Texas A&M University Commerce
- *A new partition statistic* 2022  
Number Theory Seminar, Texas A&M University
- *A new partition statistic and applications* 2022  
Texas Number Theory and Combinatorics Seminar (virtual)
- *Adding & counting in many different ways* 2021  
Math Club, University of Texas at Tyler
- *Maps between partitions and the natural numbers* 2020  
Mathematics Department Seminar, University of Texas at Tyler
- *Adding and Counting: How Hard Can It Be?* 2020  
Women in Math and Science Research Seminar, University of Texas at Tyler
- *Modular forms and Ramsey theory* 2020  
Number Theory Seminar, Vanderbilt University
- *Moonshine and its variants* 2020  
Algebra Seminar, University of North Texas
- *Modular forms and Ramsey theory* 2020  
Mathematics Department Seminar, University of Texas at Tyler

- *Molecular Mathematics* 2020  
Math Club, University of Texas at Tyler
- *Two new results in representation theory* 2019  
Algebraic Geometry and Number Theory Seminar, Rice University
- *Densities of subsets of prime numbers* 2019  
Mathematics Colloquium, TCU
- *Partitions and representation theory* 2019  
Mathematics Department Seminar, University of Texas at Tyler
- *A new formula for Chebotarev densities* 2019  
Algebra and Number Theory Seminar, Texas Tech University
- *Adding and Counting: How Hard Can It Be?* 2019  
Math Club, University of Texas at Tyler
- *Moonshine for finite groups* 2019  
Mathematics Department Seminar, University of Texas at Tyler
- *Adding and Counting: How Hard Can It Be?* 2019  
Mathematics Colloquium, St. Edward's University
- *Densities of subsets of prime numbers* 2018  
Number Theory Seminar, Texas A&M University
- *Densities of subsets of prime numbers* 2018  
Mathematics Department Seminar, University of Texas at Tyler
- *Moonshine for finite groups* 2018  
Mathematics Colloquium, Baylor University
- *Moonshine for finite groups* 2018  
Algebra Seminar, University of Tennessee
- *Moonshine for finite groups* 2018  
Algebra Seminar, Emory University
- *Densities of subsets of prime numbers* 2018  
Mathematics Colloquium, Baylor University
- *Conjugacy Growth Series for Wreath Products of Finitary Permutation Groups* 2017  
Combinatorics, Algebra, and Geometry Seminar, University of Pennsylvania
- *Conjugacy Growth Series for Wreath Products of Finitary Permutation Groups* 2017  
Number Theory Seminar, Texas A&M University
- *Combinatorial Properties of Generalized Rogers–Ramanujan Identities* 2015  
Number Theory Seminar, University of Georgia

## ADVISING

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### UNIVERSITY OF TEXAS AT TYLER

#### Postdoctoral Fellows

–Rajat Gupta

2023 – 2024

**Graduate Student Research Assistants**

–Dannie Urban, *A study of partitions* 2020 – 2021

**Undergraduate Student Research Assistants**

–Tyler Russell, *A study of partitions* 2020 – 2021

- Pi Mu Epsilon MathFest presentation: *Polynomials Associated to Integer Partitions*
- MathFest Outstanding Presentation Award

–Benjamin Sharp, *A study of partitions* 2020 – 2021

**NSF-Funded Research Experiences for Undergraduates (REU)**

–*An Algebra of Partitions* (with continued funding) Spring 2026

- Megan du Preez (University of Texas at Tyler)
- Rachel Van Surksum (University of Texas at Tyler)

–*Permutations of Partition Young Tableaux* 2024

- Alessandra Martinez (University of Texas Rio Grande Valley)
- Alessandro Russo (Charleston Southern University)
- Mat Taylor (University of Texas at Tyler)

–*Sequentially Congruent Partitions* 2022

- Ezekiel Cochran (LeTourneau University)
- Emma Harrell (Mount Holyoke College)
- Samuel Saunders (University of Texas at Tyler)

**Louis Stokes Alliances for Minority Participation (LSAMP)**

–Millie Jeske, *Permutations of Partition Young Tableaux* 2024

**Senior Capstone Projects**

–Alaina Cornelius, *Abstract Algebraic Group Solitaire* Fall 2026

–Kenneth Chandler, *Palindrome Partitions* Fall 2025

–Melissa Rodriguez-Sanchez, *Permutation Puzzles* Fall 2024

–Alejandro De Mingo, *The Mathematics of Origami* Spring 2024

–Tyler Russell, *The Circle Method* Spring 2022

–Rebecca Odom, *Identifying Self-Conjugate Partitions* Spring 2021

- Pi Mu Epsilon MathFest presentation: *Identifying Self-Conjugate Partitions*
- MathFest Outstanding Presentation Award
- Paper submitted to *Rose-Hulman Undergraduate Mathematics Journal*

–Landri Edwards, *Mathematical Analysis of Soccer* Fall 2020

–Chloe West, *Mathematical Analysis of Swimming* Spring 2020

**Honors Projects**

–*An Algebra of Partitions*, by Megan du Preez Spring 2026

Honors Contract Project

–*Modeling Neural Activity with Differential Equations*, by Oliver Cumbie Spring 2026

Honors Contract Project

–*Transcendental Numbers*, by Hunter Brown 2025 – 2026

Honors Senior Project

–*Module Theory*, by Megan du Preez Fall 2025



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|-------------------------------------------------------------------------------------|-------------|
| Honors Contract Project                                                             |             |
| – <i>Networks</i> , by Hunter Brown                                                 | Spring 2025 |
| Honors Contract Project                                                             |             |
| – <i>Permutation Groups and Number Puzzles</i> , by Melissa Rodriguez-Sanchez       | Fall 2024   |
| Honors Senior Project                                                               |             |
| – <i>Permutations and Partition Young Tableaux</i> , by Millie Jeske                | Fall 2024   |
| Honors Senior Project                                                               |             |
| – <i>Modeling Malaria Control with Differential Equations</i> , by Matthew Castillo | Spring 2023 |
| Honors Contract Project                                                             |             |

## EMORY UNIVERSITY

### Undergraduate Directed Research Projects (joint with Ken Ono)

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|---------------------------------------------------------------------|-------------|
| –Sven Mesihovic, <i>Analytic Study of High Performance Swimming</i> | Spring 2019 |
|---------------------------------------------------------------------|-------------|

### Research Experiences for Undergraduates (graduate student mentor)

|                                                      |            |
|------------------------------------------------------|------------|
| – <i>Analytic Study of High Performance Swimming</i> | 2018, 2019 |
|------------------------------------------------------|------------|

## UNIVERSITY OF VIRGINIA

### Undergraduate Directed Research Projects (joint with Ken Ono)

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|---------------------------------------------------------------|-------------|
| –Jerry Lu, <i>Analytic Study of High Performance Swimming</i> | 2020 – 2021 |
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## PROFESSIONAL DEVELOPMENT

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### Student Research Professional Learning Community

|                                                            |      |
|------------------------------------------------------------|------|
| –Undergraduate and Graduate Research Funding Opportunities | 2022 |
| –Tips for Recruiting Student Researchers                   | 2021 |

|                                                      |      |
|------------------------------------------------------|------|
| Tenure & Promotion: Assistant to Associate Professor | 2021 |
|------------------------------------------------------|------|

|                                      |      |
|--------------------------------------|------|
| Course Hero Virtual Education Summit | 2020 |
|--------------------------------------|------|

- The Future of Higher Education in the Age of Coronavirus
- Engaging Underprepared Students: Before, During, And After the COVID Era
- Teaching Effective Thinking Through Mathematics
- TailorEd: Student Learning Outcomes
- Synchronous vs. Asynchronous: Lessons From An Educator Teaching Online Since 1994
- Unleashing Faculty Innovation

|                                                                          |      |
|--------------------------------------------------------------------------|------|
| UT Tyler Faculty Panel on Course Evaluations: Learning from our Students | 2020 |
|--------------------------------------------------------------------------|------|

### Student Success Seminar Series, UT Tyler

|                                                    |      |
|----------------------------------------------------|------|
| –From ABC to XYZ: Educating the Instant Generation | 2020 |
|----------------------------------------------------|------|

### UT System Academy of Distinguished Teachers Winter Conference

|                                                 |      |
|-------------------------------------------------|------|
| –Defining and Teaching for Student Success      | 2020 |
| –Active Learning Using Educational Technologies | 2020 |
| –Meeting these Challenges                       | 2020 |

## UT Tyler Center for Excellence in Teaching and Learning

- One Case, Many Lenses: Designing Coherent and High-Impact Applied Courses 2026
- Six Science-Supported Strategies for Effective Teaching and Learning 2025
- AI: The Teaching Assistant You Never Knew You Needed 2024
- Collaborative Project-Based Learning 2024
- Teaching and Learning in the Age of AI: How Do We Adapt? 2023
- Advanced Active Learning Strategies for In-Person, Online, and Blended Learning Environments 2023
- Understanding our Undergraduate Students: They’re Here 2022
- Post-Pandemic Teaching and Learning 2022
- Active Learning Strategies in STEM Courses 2021
- How Do I Help My Students? 2021
- Panel Discussion: OER and Affordable Textbook Alternatives 2020
- Digital Tools to Empower 21st Century Learners 2020
- Using Storytelling in the Classroom 2020
- Increasing Accessibility for All 2019
- Culture Shock and College Success 2019
- Building Student Resilience 2019
- Designing Service-Learning Courses 2019

## MAA Project NExT Workshops 2020

- Math for Non-Math Majors
- Inspired by Real, Fun Math: Practical Outreach for Sharing the Power and Beauty of Mathematics with our Communities
- Fostering an Equitable Classroom

## UT Tyler Internal Grants: Facilitating Faculty and Staff Research and Collaboration 2019

## Work-Life Balance Faculty Learning Community Workshop/Meeting 2019

## UT Tyler Tenure &amp; Promotion Workshop 2019, 2020, 2021, 2022

**PROFESSIONAL SERVICE**

Co-organizer, Fall Western AMS Sectional Meeting Special Session on “Non-standard Digital Representations and Numeration Systems” 2026

Co-organizer, Third Joint SIAM/CAIMS Annual Meetings, Montréal, Québec, Canada 2025  
 Minisymposium on “Hypergeometric Series and Their Applications”

External reviewer, NSF Research Experience for Undergraduates, Texas A&M Commerce 2023

Co-organizer, JMM Special Session on “Modular Forms and Combinatorics” 2022

Reviewer, AMS Mathematical Reviews 2021 – present

Co-organizer, JMM Special Session on “Partition Theory and  $q$ -Series” 2020

Judge, MAA Undergraduate Student Poster Session at the JMM 2020

Session Chair, Analytic and Combinatorial Number Theory: The Legacy of Ramanujan 2019

## Referee Work:

2016 – present

- Transactions of the American Mathematical Society*
- Proceedings of the American Mathematical Society*
- Research in the Mathematical Sciences*
- Acta Mathematica Scientia*
- Mathematics*
- Ramanujan Journal*
- Journal of Number Theory*
- Research in Number Theory*
- Hardy-Ramanujan Journal*
- Discrete Mathematics*
- Discussiones Mathematicae Graph Theory*
- International Journal of Number Theory*
- Communications in Algebra*
- Annals of Combinatorics*
- Electronic Journal of Combinatorics*
- European Journal of Combinatorics*
- Graphs and Combinatorics*
- Integers*
- Journal of Integer Sequences*
- Australasian Journal of Combinatorics*
- Combinatorics and Number Theory*
- Involve*
- Journal of Mathematical Research with Applications*
- Bulletin of the Brazilian Mathematical Society, New Series*
- Ball State Undergraduate Mathematics Exchange*
- A paper contributed to a Festschrift for *Operator Theory: Advances and Applications*
- A paper contributed to *FPSAC (Formal Power Series and Algebraic Combinatorics)*

## UNIVERSITY SERVICE

## University of Texas at Tyler

*Institutional Committees and Service*

College of Arts and Sciences Curriculum Committee

Chair

2024 – 2025

Member

2023 – 2026

Research Council member (a university-level advisory committee)

2023 – 2026

Conducted a Center for Excellence in Teaching and Learning workshop

“Problem-Based Learning in Precalculus”

2023

|                                                                       |                  |
|-----------------------------------------------------------------------|------------------|
| Honors Program Coordinator Search Committee member                    | 2021             |
| Judge for Lyceum Student Research Showcase                            | 2021, 2023, 2026 |
| Leader of eleven freshman book discussion mock classes at orientation | 2020, 2021       |
| Pi Mu Epsilon Texas Phi Chapter Faculty Advisor                       | 2021 – present   |
| Guest speaker at Honors Forum                                         | 2021             |
| Panelist for “What I Wish I’d Known” at new faculty orientation       | 2020             |
| Founder/faculty advisor, Women in Math and Science at UT Tyler        | 2019 – present   |
| Founder/faculty advisor, Patriots for the Deaf and Hard of Hearing    | 2019 – 2021      |
| Service-Learning Faculty Learning Community Member                    | 2019 – 2020      |
| Global Quiz Night Volunteer                                           | 2019             |

### *Departmental Committees and Service*

|                                                                            |                             |
|----------------------------------------------------------------------------|-----------------------------|
| Mathematics Department Tenure & Promotion Committee                        | 2025 – present              |
| Mathematics Department Search/Hiring Committee                             |                             |
| Chair                                                                      | 2024 – 2025                 |
| Member                                                                     | 2023 – 2025                 |
| Mathematics Department Chair Hiring Committee member                       | 2024                        |
| Mathematics Department Postdoctoral Committee member                       | 2023 – 2024                 |
| Mathematics Department Awards Committee                                    |                             |
| Chair                                                                      | 2024 – 2025                 |
| Member                                                                     | 2023 – 2026                 |
| Mathematics Department Webmaster (Website Committee chair)                 | 2023 – present              |
| Mathematics Department Curriculum Committee                                | Even Fall – Odd Spring      |
| Mathematics Department Graduate Committee                                  | Odd Fall – Even Spring      |
| Redesigned the B.S. Mathematics degree to include career tracks            | 2022 – 2024                 |
| Helped design a 4 + 1 B.S./Master’s degree in Mathematics                  | 2022 – 2024                 |
| Mathematics Department Strategic Plan Committee member                     | 2022                        |
| Mathematics Department Standardizing Math-CS Double Major Committee member | 2021                        |
| Mathematics Department Open House Co-organizer                             | 2021                        |
| Mathematics Department Ph.D. Committee member                              | 2020 – 2023                 |
| Mathematics Department Education Committee member                          | 2019 – 2021                 |
| Founded the UT Tyler Number Theory and Combinatorics Seminar               | 2020                        |
| Seminar Organizer                                                          | 2020 – 2021, 2023 – present |

### **Emory University**

|                                                                              |             |
|------------------------------------------------------------------------------|-------------|
| Moderator of a teaching panel at the teaching assistant preparatory workshop | 2018        |
| Micro-teaching facilitator at the teaching assistant preparatory workshop    | 2018        |
| Lecturer for the STEM Pathways program                                       | 2018        |
| Head coach for the Emory Collegiate Club Swim Team                           | 2016 – 2018 |

## COMMUNITY SERVICE

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|-------------------------------------------------------------------------------------|-------------|
| Contest Director for UIL Regional Number Sense Competition                          | 2025        |
| Organizer/speaker for Keller Collegiate Academy's visit to UT Tyler Math Department | 2024        |
| Co-organizer for UT Tyler STEM Summer Camp                                          | 2020, 2021  |
| Guest speaker for STEM Like a Girl, Discovery Science Place                         | 2020, 2021  |
| Guest speaker for No Excuses University Initiative, Van Intermediate School         | 2019        |
| Volunteer at the American Heart Association Heart Walk in Tyler, TX                 | 2019        |
| Participant at Swim Across America, Atlanta                                         | 2016 – 2018 |
| Volunteer for HomeStretch with UGA alumni                                           | 2018        |
| Guest speaker at an Atlanta Girls' School swim practice                             | 2016        |
| Assistant instructor at two Emory Math Circle meetings                              | 2016        |
| Guest speaker for Fellowship of Christian Athletes at The Lovett School             | 2016        |

## COURSES TAUGHT

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### University of Texas at Tyler

MATH 5321/4321: cross-listed Combinatorics/Graph Theory and Topics in Combinatorics  
 MATH 5301/4301: cross-listed Number Theory  
 MATH 4336: Abstract Algebra II  
 MATH 4160/4161: Senior Seminar I/II  
 MATH 3425: Foundations of Mathematics  
 MATH 3336: Abstract Algebra I  
 MATH 3305: Ordinary Differential Equations  
 MATH 3203: Matrix Methods in Science and Engineering  
 MATH 2415: Multivariate Calculus  
 HNRS 2414: Honors Calculus II  
 MATH 2414: Calculus II  
 HNRS 2413: Honors Calculus I  
 MATH 2413: Calculus I  
 MATH 2312: Precalculus  
 MATH 1342.H: Honors Statistics I  
 MATH 1342: Statistics I  
 MATH 0303: Intermediate Algebra

### Emory University

MATH 211: Multivariable Calculus  
 MATH 116 (teaching assistant): Calculus II for Life Sciences  
 MATH 112: Calculus II  
 MATH 111: Calculus I