Raegan Higgins

Associate Professor, Department of Mathematics and Statistics, Texas Tech University
raegan.higgins@ttu.edu

GENERAL INFORMATION

RESEARCH INTERESTS

Dynamic Equations on Time Scales, (Non)oscillation Theory, Stability on Time Scales, Differential and Difference Equations, Mathematical Modeling, Higher-order Time-Scale Systems

EDUCATION

Ph.D. Mathematics May 2008
University of Nebraska-Lincoln
Advisors: Lynn Erbe and Allan Peterson
Dissertation: Oscillation Theory of Dynamic Equations on Time Scales

M.S. Mathematics May 2004
University of Nebraska-Lincoln

B.S. Mathematics May 2002
Xavier University of Louisiana

CURRENT ACADEMIC POSITION

Associate Professor 2016 - present
Department of Mathematics and Statistics
Texas Tech University, Lubbock, TX

PRIOR ACADEMIC POSITION

Assistant Professor 2010 - 2016
Department of Mathematics and Statistics
Texas Tech University, Lubbock, TX

Visiting Assistant Professor 2008 - 2010
Department of Mathematics and Statistics
Texas Tech University, Lubbock, TX

CURRENT ADMINISTRATIVE POSITION

Assistant Vice Provost for Faculty Success 2022 - present
Office of the Provost
Texas Tech University, Lubbock, TX

PRIOR ADMINISTRATIVE POSITION

Faculty Fellow 2021 - 2022
Office of the Provost
Texas Tech University, Lubbock, TX

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

National Association of Mathematicians	2020 - present
Society of Industrial and Applied Mathematics	2021 - present, 2014 - 2019
Association for Women in Mathematics	2008 - present
American Mathematical Society	2008 - 2016
Mathematical Association of America	2021- present, 2008 - 2011

TEACHING

TEACHING AWARDS[1]

Most Influential Faculty Member December 2017
Whitacre College of Engineering, Texas Tech University

Teaching Academy Member September 2015
Teaching, Learning, & Professional Development Center, Texas Tech University

Professor of the Year 2011 - 2012
Student Chapter of the Society for Industrial and Applied Mathematics, Texas Tech University

Project NExT (New Experiences in Teaching) Fellow Inducted 2008
Mathematical Association of America

PEDAGOGICAL ACCOMPLISHMENTS

Honors College Classes Taught:

MATH 1451, Calculus I with Applications: Honors, 6 courses

MATH 1452, Calculus II with Applications: Honors, 6 courses

New courses developed:

MATH 4000 An Introduction to Difference Equations and Their Applications

MATH 5099 Topics on Time Scale Calculus - Part I, 3 courses

MATH 5099 Topics on Time Scale Calculus - Part II, 1 course

OTHER RELATED ACTIVITIES

Invited Faculty, Measure Theory June 2014-2017
Enhancing Diversity in Graduate Education (EDGE) Summer Program Harvey Mudd College, Howard University,Purdue University, Mills College

[1] Additional awards at the end.

RESEARCH MENTORING

CHAIR OF DOCTORAL COMMITTEES

Casey Mills December 2021
Mathematics & Statistics *Texas Tech University*

Title: A Time Scales Approach to Modeling Intermittent Androgen Deprivation Therapy
Committee members: Raegan Higgins (chair), Angela Peace, Amanda Laubmeier

MEMBER OF DOCTORAL COMMITTEES

Ramiro Ramirez December 2021
Mathematics & Statistics *Texas Tech University*

Title: Stoichiometric Aquatic Food-Web Models Coupling Pelagic and Benthic Zones
Committee members: Angela Peace (chair), Raegan Higgins, Amanda Laubmeier

Crystal Evans 2020- 2021
Educational Psychology & Leadership *Texas Tech University*

Title: Hidden Figures: How Hidden Teacher Perceptions Predict the Hiding of Mathematically Gifted Black Girls
Committee members: Kamau Oginga Siwatu (chair), Raegan Higgins, Tara Stevens

Hewa Dilini Fonseka August 2020
Mathematics & Statistics *Texas Tech University*

Title: Modeling Approaches to Understand Plant-Pollinator-Herbivore Interactions
Committee members: Angela Peace (chair), Raegan Higgins, Victoria Howle, Sophia Jang

Kristen Lyons December 2018
Educational Psychology & Leadership *Texas Tech University*

Title: Facilitating Young Children's Conceptual Knowledge of Mathematics Through Physical Activity
Committee members: Tara Stevens (chair), Raegan Higgins, Kamau Oginga Siwatu

Rachel Phillips December 2018
Educational Psychology & Leadership *Texas Tech University*

Title: Implicit Impact: An Experimental Study of Subtle Gender Bias in Undergraduate Teacher Candidates
Committee members: Kamau Oginga Siwatu (chair), Raegan Higgins, William Lan

Farzana Nasrin May 2018
Mathematics & Statistics *Texas Tech University*

Title: Smoothing Splines on Ball Domains with Applications to Optometry and Ophthalmology
Committee members: Ram Iyer (chair), Raegan Higgins (co-chair), Eugenio Aulisa, Steven Mathews, A. Alexandre Trindade

S Pedi Durayalage Sanjeewa S. Karunarathna May 2018
Mathematics & Statistics *Texas Tech University*

Title: Customized Contact Lens Design for Regular and Irregular Vision Defects
Committee members: Ram Iyer (chair), Leif Ellingson, Raegan Higgins, Katherine Long, Steven Matthews

CHAIR OF MASTER'S COMMITTEES

Allison Godwin August 2018
Mathematics & Statistics *Texas Tech University*

Title: Changes to the Calculus I Curriculum at Texas Tech University and the Effects on Student Success
Committee members: Raegan Higgins (chair), James Surles, Brock Williams

Brandon Finney August 2018
Mathematics & Statistics *Texas Tech University*

Title: A New Approach to Biological Epidemic Models on Time Scales
Committee members: Raegan Higgins (chair), Angela Peace

Michael von-Ende Becker August2018
Mathematics & Statistics *Texas Tech University*

Title: An Optimization of Intermittent Therapy Treatment: A Time Scales Approach
Committee members: Raegan Higgins (chair), Angela Peace

Kristen Weasenforth May 2017
Mathematics & Statistics *Texas Tech University*

Title: The SIR Model on Time Scales
Committee members: Raegan Higgins (chair), Angela Peace

MEMBER OF MASTER'S COMMITTEES

Kayla Comeaux December 2015
Mathematics & Statistics *Texas Tech University*

Title: An Analysis of Deterministic and Stochastic Models for Within-Host and Between-Host Disease Dynamics Coupled Throughout the Environment
Committee members: Linda Allen (chair), Raegan Higgins, Victoria Howle

RESEARCH

PUBLICATIONS[2]

ARTICLES (REFEREED)

1. **Narges Hadi**, Spott, J. L., & Higgins, R. (May 2022). Underrepresented students' experiences in stem at community colleges: A qualitative exploration of self-identified challenges and supports promoting persistence. *Journal of The First-Year Experience & Students in Transition*. (25%)

2. *Öztürk, Özkan*, & Higgins, R. (2022). Almost Oscillation of a Third-Order Emden-Fowler equation on Time Scales. *Differential Equations and Dynamical Systems*. Retrieved from https://link.springer.com/article/10.1007/s12591-022-00603-0 doi: doi: 10.1007/s12591-022-00603-0 (50%)

[2] **Boldface** indicates student author and *italics* indicates postdoc. Generally, the author order indicates the magnitude of contribution, with the first and second authors adding the most value.

3. Higgins, R., & Berger, H. (2022). The $\mathbb{N}_0$ Story: Discrete Fractional Calculus. *Notices Amer. Math. Soc.*, *69*(2), 180-189. Retrieved from https://www.ams.org/notices/202202/rnoti-p180.pdf doi: doi: 10.1090/noti2414 (60%)

4. Smith, D. J., Spott, J. L., Higgins, R., & McNaughtan, J. (2021). Beyond articulation agreements: Fostering success for community college transfer students in stem. *Community College Journal of Research and Practice*. Retrieved from https://doi.org/10.1080/10668926.2021.1961923 doi: doi: 10.1080/10668926.2021.1961923 (20%)

5. *Öztürk, Özkan*, Higgins, R., & Kittou, G. (2021). Oscillation of Three-Dimensional Time Scale Systems with Fixed Point Theorems. *Filomat*, *35*(6). Retrieved from https://www.pmf.ni.ac.rs/filomat-content/2021/35-6/35-6-10-13752.pdf (33.3%)

6. Higgins, R., **Mills, Casey J**, & Peace, A. (2020). A time scales approach for modeling intermittent hormone therapy for prostate cancer. *Bulletin of Mathematical Biology*, *82*(11), 1–16. Retrieved from https://link.springer.com/content/pdf/10.1007/s11538-020-00821-z.pdf doi: doi: 10.1007/s11538-020-00821-z (50%)

7. Öztürk, O., & Higgins, R. (2018). Limit behaviors of nonoscillatory solutions of three-dimensional time scale systems. *Turkish J. Math.*, *42*(5), 2576–2587. Retrieved from https://journals.tubitak.gov.tr/math/issues/mat-18-42-5/mat-42-5-37-1802-104.pdf doi: doi: 10.3906/mat-1802-104 (40%)

8. Aguirre-Muñoz, Z., Stevens, T., Harris, G., & Higgins, R. (2018). Mathematics Teacher Learning Preferences: Self-Determination Theory Implications for Addressing Their Learning Needs. *Journal of Education and Practice*, *9*(32), 127–140. Retrieved from https://www.iiste.org/Journals/index.php/JEP/article/view/45270/46713 (15%)

9. Graham, E., Higgins, R., Price, C., & Wilson, S. (2018). The Mathematically Gifted and Black website. *Notices Amer. Math. Soc.*, *65*(2), 124–126. Retrieved from https://doi.org/10.1090/noti1633 doi: doi: 10.1090/noti1633 (25%)

10. Higgins, R., Graham, E., & Wilson, S. (2016). SIAM Celebrates Diversity in Mathematics. *SIAM News*, *49*(10). Retrieved from https://sinews.siam.org/Portals/Sinews2/Issue%20Pdfs/sn_December2016.pdf (33.3%)

11. Higgins, R. J., Kent, C. M., Kocic, V. L., & Kostrov, Y. (2015). Dynamics of a nonlinear discrete population model with jumps. *Appl. Anal. Discrete Math.*, *9*(2), 245–270. Retrieved from https://doi.org/10.2298/AADM150930019H doi: doi: 10.2298/AADM150930019H (25%)

12. Higgins, R. (2015). Oscillation of certain dynamic equations on time scales. *Commun. Appl. Anal.*, *19*(1), 113–128. Retrieved from http://www.dynamicpublishers.com/CAA/CAA2015/09-CAA-113-128.pdf

13. Adivar, M., Akin, E., & Higgins, R. (2014). Oscillatory behavior of solutions of third-order delay and advanced dynamic equations. *J. Inequal. Appl.*, 2014:95, 16. Retrieved from https://doi.org/10.1186/1029-242X-2014-95 doi: doi: 10.1186/1029-242X-2014-95 (33.3%)

14. Stevens, T., Aguirre-Munoz, Z., Harris, G., Higgins, R., & **Liu, Xun**. (2013). Middle level mathematics teachers' self-efficacy growth through professional development: Differences based on mathematical background. *Australian Journal of Teacher Education*, *38*(4), 9. Retrieved from https://files.eric.ed.gov/fulltext/EJ1013938.pdf (10%)

15. Higgins, R. (2012). Oscillation of a second-order linear delay dynamic equation. *Commun. Appl. Anal.*, *16*(3), 403–414.

16. Higgins, R. (2011). Oscillation of second-order dynamic equations. *Int. J. Dyn. Syst. Differ. Equ.*, *3*(1-2), 189–205. Retrieved from https://doi.org/10.1504/IJDSDE.2011.038502 doi: doi: 10.1504/IJDSDE.2011.038502

17. Harris, G., Stevens, T., & Higgins, R. (2011). A professional development model for middle school teachers of mathematics. *International Journal of Mathematical Education in Science and Technology*, *42*(7), 951-961. Retrieved from https://doi.org/10.1080/0020739X.2011.611908 doi: doi: 10.1080/0020739X.2011.611908 (15%)

18. Higgins, R. (2010d). Some oscillation results for second-order functional dynamic equations. *Adv. Dyn. Syst. Appl.*, *5*(1), 87–105. Retrieved from http://www.doiserbia.nb.rs/img/doi/1452-8630/2010/1452-86301000018H.pdf

19. Higgins, R. (2010c). Some oscillation criteria for second-order delay dynamic equations. *Appl. Anal. Discrete Math.*, *4*(2), 322–337. Retrieved from https://doi.org/10.2298/AADM100425018H doi: doi: 10.2298/AADM100425018H

20. Higgins, R. (2010b). Oscillation results for second-order delay dynamic equations. *Int. J. Difference Equ.*, *5*(1), 41–54. Retrieved from https://campus.mst.edu/ijde/contents/v5n1p3.pdf

21. Higgins, R. (2010a). Asymptotic behavior of second-order nonlinear dynamic equations on time scales. *Discrete Contin. Dyn. Syst. Ser. B*, *13*(3), 609–622. Retrieved from https://doi.org/10.3934/dcdsb.2010.13.609 doi: doi: 10.3934/dcdsb.2010.13.609

22. Erbe, L., & Higgins, R. (2008). Some oscillation results for second order functional dynamic equations. *Adv. Dyn. Syst. Appl.*, *3*(1), 73–88. Retrieved from https://campus.mst.edu/adsa/contents/v3n1p7.pdf (80%)

BOOK CHAPTERS

21. Higgins, R. (2022). The Road Less Traveled: My Journey to Mathematics. In *Association for Women in Mathematics: The First Fifty Years* (Vol. 28, pp. 211–217). Springer, [Cham]. Retrieved from https://doi.org/10.1007/978-3-030-82658-1_20 doi: doi: 10.1007/978-3-030-82658-1_20

22. Higgins, R. (2016). Asymptotic and oscillatory behavior of dynamic equations on time scales. In *Advances in the Mathematical Sciences* (Vol. 6, pp. 341–355). Springer, [Cham]. Retrieved from https://doi.org/10.1007/978-3-319-34139-2_16 doi: doi: 10.1007/978-3-319-34139-2_16

PROCEEDINGS (REFEREED)

23. Stevens, T., Harris, G., Higgins, R., Aguirre-Munoz, Z., & **Liu, Xun**. (2014). Rigorous math courses for middle-school math teachers. In *Proceedings of the 41st Annual Meeting of the Research Council on Mathematics Learning* (pp. 10–17). (15%)

24. Higgins, R., & Peterson, A. (2004). Cauchy functions and Taylor's formula for time scales $\mathbb{T}$. In *Proceedings of the Sixth International Conference on Difference Equations* (pp. 299–308). Chapman Hall/CRC. Retrieved from https://www.routledge.com/Proceedings-of-the-Sixth-International-Conference-on-Difference-Equations/Aulbach-Elaydi-Ladas/p/book/9780415316750 (50%)

MANUSCRIPTS CURRENTLY SUBMITTED

Mills, C., & Higgins, R. (May 2022). An exploration of discrete fractional calculus with applications to intermittent oncological modeling. *Progress in Fractional Differentiation and Applications*. (40%)

McNaugthan, J., Higgins, R., Spott, J., & Smith, D. (January 2022). Developing and Recasting STEM Centers as Institutional Bridges and Entry Points. *The Community College Enterprise*. (30%)

WEBSITES

Graham, E., Higgins, R., Price, C., & Wilson, S. (2022, February). *Mathematically Gifted and Black*. https://mathematicallygiftedandblack.com/.

Graham, E., Higgins, R., Price, C., & Wilson, S. (2021a, August). *Mathematically Gifted and Black*. https://mathematicallygiftedandblack.com/.

Graham, E., Higgins, R., Price, C., & Wilson, S. (2021b, February). *Mathematically Gifted and Black*. https://mathematicallygiftedandblack.com/.

Graham, E., Higgins, R., Price, C., & Wilson, S. (2020, February). *Mathematically Gifted and Black*. https://mathematicallygiftedandblack.com/.

PROFESSIONAL PRESENTATIONS[3]

AMS Mini-Conference on Education September 2022
Rethinking graduate admissions in the mathematical sciences *Washington, DC*

Talk title: EDGE: Building a Thriving Community of Women Mathematicians

Joint Mathematics Meeting April 2022
AMS Special Session on Analysis of and Recent Advances in Difference, Differential and Dynamic Equations with Applications *Virtual*

Talk title: Modeling Intermittent Hormone Therapy for Prostate Cancer using Fractional Calculus
Joint work with **Casey Mills***

Annual Meeting of American Educational Research Association April 2022
Strategies for Success in STEM *San Deigo, CA*

Talk title: Working Together: The Role of STEM Center Collaborations in Promoting STEM Student Success.
Joint work with Jon McNaughtan, Jessica L Spott*, and Dimitra J Smith

Annual Meeting of Texas Section of the MAA April 2022
Department of Mathematics *Denton, TX*

[3] **Boldface** indicates student author and * indicates presenter.

Plenary: "Mind the Gap: Modeling on Time Scales"

Joint Mathematics Meeting January 2021
MAA Contributed Paper Session on The EDGE Program: Pure and Applied Talks by Women Math Warriors *Virtual - Washington, DC*

Talk title: Modeling Intermittent Hormone Therapy for Prostate Cancer using Dynamic Equations on Time Scales
Joint work with **Casey Mills** and Angela Peace

American Mathematical Society paraDIGMS: Diversity in Graduate Mathematical Sciences Conference November 2020
Institute for Mathematical and Statistical Innovation *Virtual*

Plenary: EDGE: A Thriving Community of Women Mathematicians

American Mathematical Society Fall Central Virtual Sectional Meeting September 2020
Special Session on Stochastic Modeling in Mathematical Biology

Talk title: A Time Scales Approach for Modeling Intermittent Hormone Therapy for Prostate Cancer
Joint work with **Casey Mills*** and Angela Peace

2020 Noyce Virtual Summit August 2020
American Association for the Advancement of Science and National Science Foundation

Talk Title: Leveraging Learning Assistantships, Mentoring, and Scholarships to Develop Self-Determined Mathematics Teachers for West Texas
Joint work with Jerry Dwyer*, Michael Galyean, Brock Williams*, and Jill White

PRiME Colloquium July 2020
Department of Mathematics *Pomona College, Pomona, CA*

Plenary: Mathematically Gifted and Black: Changing the Face of Mathematics
Joint work with Erica Graham, Candice Price, and Shelby Wilson

Texas Women in Mathematics Symposium February 2020
Department of Mathematics *Texas A & M University, College Station, TX*

Plenary: Modeling on Time Scales

Joint Mathematics Meeting January 2020
MAA Poster Session: Projects Supported by the NSF Division of Undergraduate Education *Denver, CO*

Poster title: South Plains Mathematics Fellows
Joint work with Brock Williams and **Casey Mills**

Joint Mathematics Meeting January 2019
MAA Invited Paper Session on Building Successful Communities in Mathematics *Baltimore, MD*

Talk title: EDGE: Building a Thriving Community of Women Mathematicians
Joint work with Ami Radunskaya

FUNDING, SINCE 2019

EXTERNAL APPLICATIONS, ACCEPTED AND PENDING

NSF Division of Undergraduate Education June 2022 - May 2025
Role: Co-PI, Amount: $499,999.00, Candidate's Effort: 15% *accepted, submitted Oct 2021*

NSF Grant #: 2201863

Title: Investigating Pre-College Predictors and Post-Secondary Effects of Course-Based Undergraduate Research Experiences in Texas

PI: Jacob Kirksey, Educational Psychology and Leadership

NSF Division of Human Resource Development September 2021 - August 2026
Role: PI, Amount: $2,017,456.00, Candidate's Effort: 34% *accepted, submitted Nov 2020*

NSF Grant #: 2110048

Title: Louis Stokes New STEM Pathways Implementation-Only Alliance: The Bridges Across Texas Louis Stokes Alliances for Minority Participation[4]

PI: Lawrence Schovanec, Office of the President

NSF Division of Undergraduate Education June 2019 - May 2024
Role: Co-PI, Amount: $1,116,016.00, Candidate's Effort: 10% *accepted, submitted Aug 2018*

NSF Grant #: 1852944

Title: Leveraging Learning Assistantships, Mentoring, and Scholarships to Develop Self-Determined Mathematics Teachers for West Texas

PI: Jerry Dwyer, Curriculum and Instruction

EXTERNAL APPLICATIONS, DENIED

NSF Division of Education and Human Resources January 2023 - December 2027
Role: Co-PI, Amount: $5,296,003.00, Candidate's Effort: 10% *denied, submitted January 2022*

Title: NSF INCLUDES Alliance: Increasing Recruitment, Retention, and Advancement of Hispanic and First Generation Students in STEM: Increasing Collective Impact across West Texas?

PI:Jessica Gottlieb, Educational Psychology

USDA National Institute of Food and Agriculture Cooperative State Research Education & Extension Services August 2021 - July 2023
Role: PI, Amount: $56,539.00, Candidate's Effort: 60% *denied, submitted Feb 2020*

Title: Virtual Interactive Produce Safety (VIPS) Exploration

Co-PI: Jongpil Cheon, Curriculum and Instruction, TTU

Sponsoring Institution: Texas A & M University Commerce

NSF Division of Human Resource Development September 2020 - August 2025
Role: PI, Amount: $4,462,151.00, Candidate's Effort: 50% *denied, submitted Nov 2019*

Title: Louis Stokes New STEM Pathways Implementation-Only Alliance: The Bridges Across Texas Louis Stokes Alliances for Minority Participation

PI: Lawrence Schovanec, Office of the Provost, TTU

NSF INCLUDES Alliances January 2020 - December 2024
Role: PI, Amount: $185,433.00, Candidate's Effort: 75% *denied, submitted April 2019*

Title: A Union of EDGEs

Co-PI: Kamau Siwatu, Educational Psychology and Leadership, TTU

Sponsoring Institution: Pomona College

[4]Recipient of the *INSIGHT Into Diversity* Magazine's 2022 Inspiring Programs in STEM Award

NSF Division of Human Resource Development February 2020 - January 2026
Role: Co-PI, Amount: $2,499,916.00, Candidate's Effort: 13% *denied, submitted Sept 2019*

Title: HSI Building Capacity: Transforming Cultural Competencies to Improve STEM Student Persistence and Retention at new Hispanic-Serving Institutions

PI: Jaclyn Canas-Carrell, Environmental Toxicology

SERVICE

DEPARTMENTAL SERVICE

Committee Member

Graduate Committee	August 2020 - August 2021, September 2016 - August 2018
Unit Manager Hiring Committee	April 2019
Undergraduate Scholarship Committee	September 2017 - August 2019
Statistics Faculty Search Committee	August 2015- February 2016
Department Chair Search Committee	May 2015 - March 2016
Undergraduate Committee	September 2013 - August 2015
Tenure & Promotion Policy Committee	February 2013 - April 2013
Emmy Noether High School Mathematics Day[5]	October 2009 – present
Calculus Review Committee	January 2009 - May 2010

Course Coordinator

Math 1550, average of 8 sections per semester	Fall 2017 - Spring 2020
Math 1451, 19 sections	Fall 2015

Faculty Advisor

TTU Student Chapter of Association for Women in Mathematics	September 2018 - present
Young Women in Mathematics	August 2014 - August 2018

Faculty Evaluator

Instructor Teaching Observation	October 2019, 2018; February 2016
Teaching Assistant Teaching Observation	November 2019, 2016, 2015, 2014, 2012

Judge

April 2012, March 2009

Student Chapter Society for Industrial & Applied Mathematics
Graduate Student Research Day

Organizer

January 2009 - December 2010

Math Education Seminar

COLLEGE SERVICE

Committee Member

College of Arts and Sciences Dean's Search Committee	April 2021 - April 2022
College of Arts and Sciences Committee on Academic Programs	September 2020 - present

UNIVERSITY SERVICE

[5]Recipient of the *INSIGHT Into Diversity* Magazine's 2021 Inspiring Programs in STEM Award

Committee Member

President's Athletic Council	June 2020 - present
5-yr Review Committee for Honors College Dean Michael San Francisco	Sept 2019 - Feb 2020
President's Gender Equity Council	Sept 2018 - Aug 2020
Mathematics Subcommittee of the Core and Multicultural Curriculum Committee	Sept 2017 - present
African American History Month Lecture Series	Nov 2018 - April 2019
Greek Life Advisory Council	Sept 2015 - Aug 2017
Office Fraternity and Sorority Life Business Coordinator Search Committee	Dec 2016 - April 2017
Task Force on Greek Organization Culture	Sept 2014 - May 2015

Dean's Representative

Graduate School	2022, 2020, 2017, 2015

Faculty Advisor

Eta Lambda Chapter of Delta Sigma Theta Sorority, Inc.	February 2009 - present

Invited Panelist

"The Importance of Diversity in Leadership"	
Red Raider Leadership Conference	April 2009
"Surviving Your First Year"	
Teaching, Learning, and Professional Development Center	October 2011
"Maximizing Faculty Interactions"	
Laura Cavazos & Ophelia Powell-Malone Mentoring Program	August 2011, 2010, 2009
"Learning from Mistakes"	
Teaching, Learning, and Professional Development Center	August 2015

Mentor and Mentor Cluster Leader

Laura Cavazos & Ophelia Powell-Malone Mentoring Program	September 2011 - May 2022

SERVICE TO THE PROFESSION

Committee Chair

Workshop Celebrating Diversity Working Group for the Society for Industrial & Applied Mathematics Diversity Advisory Committee	2016

Committee Member

Mathematical Association of America Prizes and Awards Council	2021 - present
Association for Women in Mathematics Nominating Committee	2021 - 2022
Workshop Celebrating Diversity Working Group for the Society for Industrial & Applied Mathematics Diversity Advisory Committee	2015 -2017
2012 Infinite Possibilities Conference	2010-2012

Associate Editor

La Matematica	2020 - present
Communications in Applied Analysis	2011 - 2012

Judge

Essay Contest on Biographies of Contemporary Women in Mathematics
Association of Women in Mathematics 2011

Organizing Committee Member

Association for Women in Mathematics Research Symposium 2019, 2017

Panelist

"Finding a Research Topic and Thesis Advisor"
Mathematical Association of America Committee on Graduate Students January 2010

Session Chair

2022 Joint Mathematics Meeting AMS Special Session May 2021- April 2022
Society for Industrial & Applied Mathematics 2014 Annual Meeting November 2013 - July 2014
American Mathematical Society 2014 Spring Central Sectional Meeting October 2013 - April 2014

REVIEWER

Academic articles and books

Applicable Analysis and Discrete Mathematics
Advances in Difference Equations
Applied Mathematics Letters
Communications in Applied Analysis
Differential Equations and Dynamical Systems
Fractal and Fractional
International Journal of Difference Equations
Journal of Applied Mathematics and Computing
Journal of Function Spaces
Journal of Difference Equations and Applications

Grant proposals

National Science Foundation, Division of Human Resource Development January 2015
Louisiana Board of Regents Research Competitiveness November – December 2014

OTHER SYNERGISTIC ACTIVITIES

Enhancing Diversity in Graduate Education Summer Program July 2017 – present
EDGE Foundation

Co-director

Emmy Noether High School Mathematics Day May 2019, 2018, 2013, 2009
Texas Tech University, Department of Mathematics and Statistics

Organized and conducted an educational workshop for high school girls

South Plains Mathematics Fellows (SPMF) Program Fall 2016 – Spring 2020
Texas Tech University, Department of Mathematics and Statistics

Mentor for undergraduate mathematics major

Tech Savvy February 2019
Texas Tech University, STEM Center for Outreach, Research & Education

Invited keynote speaker

Lubbock Pre-Freshman Engineering Program (TexPREP-Lubbock) July 2015
Texas Tech University, Department of Mathematics and Statistics

Invited speaker

Emmy Noether High School Mathematics Day May 2021, 2015, 2013, 2012
Texas Tech University, Department of Mathematics and Statistics

Invited career panelist

Texas Tech Summer Math Academy June 2012
Texas Tech University

Organized and conducted an educational workshop for local high school students

Smooth Transition for Advancement to Graduate Education June 2012
University of Louisiana at Lafayette

Invited speaker - "Pursuing My Passion"

OUTREACH AND ENGAGEMENT

Math Classroom Consultant 2019 - present

Roscoe Wilson Elementary

Chair and Tutor 2018 - present

New Dimensions Tabernacle Tutoring Ministry

AWARDS AND HONORS

2023 AWM Fellow Announced October 2022
Association of Women in Mathematics

The Fellows Program epitomizes the AWM mission: to encourage women and girls to study and to have active careers in the mathematical sciences, and to promote equal opportunity and the equal treatment of women and girls in the mathematical sciences.

Presidential Recognition Award June 2022
Association of Women in Mathematics

The AWM Presidential Recognition Award (or AWM Presidential Award) has been created to recognize those individuals who or programs that have significantly increased and/or supported women in mathematics.

Ron Barnes Distinguished Service to Students Award April 2022
Mathematical Association of America Texas Section

The Ron Barnes Distinguished Service to Students Award is given in recognition of faculty who have distinguished themselves through service and support of undergraduate students within the Texas Section of the Mathematical Association of America.

Gweneth Humphreys Award for Mentoring January 2021
Association for Women in Mathematics

The Association for Women in Mathematics has established an award in memory of M. Gweneth Humphreys to recognize outstanding mentorship activities.

Integrated Scholar April 2020
Texas Tech University

An Integrated Scholar is a faculty member who demonstrates significant accomplishments and effective synergy among the major professorial functions of teaching, research, and service. Each has infused the results of their scholarship and creative activity into the learning experiences they provide to students and their service and engagement activities

Service Award January 2020
Association for Women in Mathematics

In recognition of the extensive time and effort devoted to AWM activities, the AWM Service Award recognizes individuals for helping to promote and support women in mathematics through exceptional volunteer service to the AWM.

Top 20 Under 40 November 2019
Lubbock Chamber of Commerce

This initiative aims to recognize outstanding individuals under the age of 40 who exemplify leadership in their careers while actively participating in making Lubbock a better place to live, work, play, learn and raise a family.

Mentor Cluster Leader of the Year April 2019
Laura Cavazos & Ophelia Powell-Malone Mentoring Program, Texas Tech University

This award is earned by Mentor Cluster Leaders, who go above and beyond the scope of their duties. These individuals consistently engage mentors, assist at Mentor Tech events, and offer valuable feedback to propel Mentor Tech forward.

Coordinators' Award April 2015
Laura Cavazos & Ophelia Powell-Malone Mentoring Program, Texas Tech University

This award is earned by a department or an individual who has volunteered his/her time to assist Mentor Tech staff. The recipients of this award often offer a helping hand to assist in any way they can and are a large part of the success Mentor Tech has seen over the academic year.

Outstanding Woman Leader Award April 2014
West Texas Association for Women in STEAM

This award recognizes female Texas Tech University and Texas Tech University Health Sciences Center faculty and staff who actively support the advancement of women in the sciences.

Match of the Year May 2013
Laura Cavazos & Ophelia Powell-Malone Mentoring Program, Texas Tech University

Recipients of the Match of the Year Award are nominated by their proteges or mentors and exemplify dedication and commitment to student success. These pairs meet faithfully and often develop a relationship that surpasses the academic year.