

Theresa Anne Strei Jorgensen

Box 19408 • Department of Mathematics • University of Texas at Arlington
 Arlington, TX 76019-0408 • Phone 817 272 1321 • Fax 817 272 5802
 e-mail: jorgensen@uta.edu • Website: <http://www.uta.edu/faculty/tjorgens/>

Academic Degrees

Ph.D., Mathematics, University of Nebraska–Lincoln (UNL), December 2000

Dissertation: “Global Regularity for Nonlinear Wave Equations”

Advisor: Mohammad Rammaha

M.S., Mathematics, University of Nebraska–Lincoln, May 1997

B.A., summa cum laude, Mathematics, University of St. Thomas (UST), St. Paul, MN, May 1993

Area of Specialization

Mathematical education of teachers, teacher professional development, curriculum development, applied functional analysis, and hyperbolic partial differential equations

Professional Experience:

Assistant Professor	2007–present	University of Texas at Arlington (UTA)
Lecturer	2003 – 2007	University of Texas at Arlington
Lecturer/Faculty Research Assistant	2002–2003	University of Texas at Arlington
Instructor	Summer 2002	University of Kansas (KU), Lawrence
Cryptologic Mathematician	2001–2002	National Security Agency, Fort Meade, MD
Teaching Assistant	1995–2000	University of Nebraska, Lincoln
Cryptologic Mathematician	Summer 1995, 1996	National Security Agency, Fort Meade, MD
Endocrinology Research Technician	1993–1995	Mayo Clinic, Rochester, MN

Awards and Honors:

1. University of Texas System Regents Outstanding Teaching Award, \$25,000, 2010
2. Provost’s Research Excellence Award, UTA, 2010
3. Nominee for University of Texas System Regents Outstanding Teaching Award, UTA, 2009
4. Honors College Distinguished Faculty Award, UTA, 2006
5. Provost’s Award for Excellence in Teaching, UTA, 2005
6. Nominee for Provost’s Award for Excellence in Teaching, UTA, 2004
7. Computer Network Defense Special Achievement award, National Security Agency (NSA), 2002
8. National Physical Sciences Consortium Fellowship, 1995-2000
9. Outstanding Graduate Teaching Assistant Award, UNL, 1999-2000
10. University of Nebraska Chancellor’s Fellowship, 1995-96, 1996-97
11. Emeritus Faculty Fellowship, UNL, 1996-97
12. Grace Chisholm Young and William Henry Young Fellowship, UNL, 1995-96
13. Frank and Marie T. Wheeler Fellowship, UNL, 1997-98
14. Barry Goldwater Scholar in Mathematics, Science and Engineering Fellowship, 1992-93
15. Mills Summer Program for Women in Math, 1991
16. University of St. Thomas Distinguished Scholar Fellowship, 1989-93

17. Delta Epsilon Sigma Honor Society
18. Aquinas Scholar Honors Program, UST

Grants Received:

1. **PI: Texas Higher Education Coordinating Board**, “TEKS Aligned Concepts of Unit and Representational Fluency in K-8 Mathematics,” with C. Kribs-Zaleta, February 2012–April 2013, Amount awarded: **\$108,000**.
 - Additional tuition commitment garnered from partner school districts: **\$97,500**.
2. **Co-PI: Association for Women in Mathematics**, “University of Texas at Arlington Sonia Kovalevsky Middle School Mathematics Day,” with J. Chung and J. Sutton, March 2012, Amount awarded: **\$2,200**.
3. **PI: Texas Higher Education Coordinating Board**, “TEKS-Aligned Concepts of Unit in K-8 Mathematics,” with C. Kribs-Zaleta, May 2009–May 2012, Total amount awarded: **\$384,341**.
 - Additional tuition commitment garnered from partner school districts: **\$280,800**.
 - Original grant dates, May 2009–August 2011, Amount awarded: **\$220,000**.
 - Upward amendment to “TEKS-Aligned Concepts of Unit in K-8 Mathematics,” approved March 2010, **\$40,457**.
 - Continuation amendment for “TEKS-Aligned Concepts of Unit in K-8 Mathematics,” approved January 2011, **\$123,884**.
4. **Co-PI: NSF GK-12 program**, “Mathematically Aligned Vertical Strands (MAVS) Connecting Mathematics Research, Pedagogy, and Outreach for GK-12 Fellows and Teachers,” with M. Cordero, T. Aktosun, J. Epperson, and J. Zhu, 2009–2014, Amount awarded: **\$2,800,000**.
5. **Co-PI: NSF Noyce Program**, “Robert Noyce Scholarship Program for Science and Mathematics Teachers,” with A. Cavallo, G. Hale, R. Lopez, and L. Mydlarz, December 2010–November 2015, Amount awarded: **\$1,449,999**.
6. **Co-PI: Texas Higher Education Coordinating Board**, “University of Texas at Arlington Mathematics Teacher Preparation Academy,” with J. Epperson and C. Kribs-Zaleta, June 2009–December 2012, Total amount awarded: **\$850,000**.
 - Additional tuition commitment garnered from partner school districts: **\$50,000**.
 - Original grant dates, June 2009–June 2011, Amount awarded: **\$700,000**.
 - Upward amendment and continuation to “University of Texas at Arlington Mathematics Teacher Preparation Academy,” approved February 2011, **\$150,000**.
7. **Co-PI: Texas Workforce Commission**, “Governor’s Science and Technology Champions Academy,” with C. Tiernan, T. Aktosun, G. Hale, J. Kenworthy, April 2011–September 2011, Amount awarded: **\$110,000**.
8. **Co-PI: Texas Higher Education Coordinating Board**, “2011 Math, Science, Technology Teacher Preparation Academies Leaders Collaboration Conference and Technical Workshop,” with A. Cavallo, J. Epperson, G. Hale, C. Kribs-Zaleta, November 2010–May 2011, Amount awarded: **\$8,000**.
9. **PI: Mathematical Association of America Tensor-SUMMA Foundation**(Strengthening Underrepresented Minority Mathematics Achievement), with T. Aktosun and M. Cordero, August 2008–July 2010, Amount awarded: **\$6,000**.

10. **Co-PI: Texas Higher Education Coordinating Board**, “TEKS-Aligned Unit Concepts in K-8 Mathematics,” with C. Kribs-Zaleta, May 2008–August 2009, Amount awarded: **\$87,000**.

Publications and Scholarly Activity:

Publications:

Books (peer reviewed)

1. Ensuring Teacher Quality: Algebra II (with J. Epperson, L. Jones, V. Meeks, S. Olson, J. Shahan), Texas Higher Education Coordinating Board, CD-ROM (2004), <http://www.utdanacenter.org/highered/alg2/> (1,156 printed pages).

Articles (refereed)

2. Limits of Infinite Processes for Liberal Arts Majors: Two Classic Examples (with B. Shipman), *PRIMUS: Problems, Resources, and Issues in Mathematics Undergraduate Studies*, 22 pp, to appear.
3. Quenching in high space dimensions for nonlinear wave equations with damping (with K. Agre), *Canadian Applied Math Quarterly*, 22 pp, to appear.
4. Vertically Connecting Precalculus and Calculus with Middle School Mathematics, MAA Notes Volume *Resources for Preparing Middle School Mathematics Teachers*, M. Fung, K. Kruczek, C. Beaver, & L. Burton (Eds.), 9pp, to appear.
5. A Cross-Institutional Collaborative Model (with S. Fuentes, Y. Parker, J. Epperson, C. Kribs-Zaleta, W. Mallam, C. Gawlik, C. Eddy), *Academic Exchange Quarterly*, Vol 15 (2011) Issue 4, 160-166.
6. A Bucketful of Thinking: a Case Study in Problem Solving (with D. Freeman), *Texas Mathematics Teacher*, **LVIII**(2011) Issue 1, 22-25.
7. Developing models for localized cross-institutional mathematics education research groups (lead author, with B. Cory, P. Dawkins, C. Eddy, J. Epperson, S. Quebec Fuentes, C. Gawlik, D. Jones, W. Mallam, E. Ward, and A. Wheeler), *Proceedings of the 32nd annual meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*, P. Brosnan, D.B.. Erchick, & L. Flevares (Eds.). (2010). Columbus, OH: The Ohio State University, 1598-1605.
8. Designing Contracts and Honors Thesis Projects in Mathematics (with M. Cordero, B. Shipman), National Collegiate Honors Council monograph on *Teaching Science and Mathematics in Honors Education*, 16pp, to appear.
9. Engaging the Honors Student in Lower-division Mathematics (with M. Cordero, B. Shipman), National Collegiate Honors Council monograph on *Teaching Science and Mathematics in Honors Education*, 33pp, to appear.
10. Global existence and nonexistence for nonlinear wave equations with damping and source terms (with M. Rammaha), *Trans. Amer. Math. Soc.*, **354**(2002) 3621-3637.
11. Nonlinear wave equations on the two dimensional sphere (with M. Rammaha), *J. Math. Anal. Appl.*, **267**(2002) 405-417.
12. National Security Agency internal publication, Classified, May 2002, 11pp.
13. National Security Agency internal publication, Classified, Aug. 2001, 10pp.
14. National Security Agency internal publication, Classified, Dec. 2001, 27pp.
15. Antithetic effects of ryanodine and ruthenium red on osteoclast-mediated bone resorption and intracellular calcium concentrations (with C. Ritchie, P. Maercklein, L. Fitzpatrick), *J.*

Cell. Biochem., **59**(1995), 281-289.

16. The effects of intracellular calcium modulators on osteoclast action (with C. Ritchie, P. Maercklein, L. Fitzpatrick), *Clin. Res.*, **41**(1993), 236A.

Contributing writer and reviewer for statewide mathematics curriculum

17. Invited by the Texas State Board of Education to serve on state panel to revise the Texas Essential Knowledge and Skills (TEKS) for Mathematics in grades 6-8. Member April 2011 to October 2011.

Submitted:

18. "Intertwining Algebra and Geometry - Finite Projective Planes and Kirkman's Schoolgirls Problem," (with A. Brown and K. Helixon), submitted.

In preparation:

19. "Connecting Mathematics Research to the School Curriculum," a description of the framework developed through the GK-12 MAVS project for facilitating the creation of school mathematics lessons that meaningfully integrate research-level mathematics.
20. "To Kill an x : Quotient Structures in High School Algebra II," a practitioner article linking research mathematics in commutative ring theory to lessons in Algebra II.
21. "Preservice Middle Grades Mathematics Teachers' Understanding of Vertical Connections in Mathematics," a framework is described for classifying preservice teachers' understanding of vertical connections in mathematics based on assessment data gathered over multiple semesters.
22. "Fraction Comparison - Development of a Relational Knowledge of Fractions via Contextual Problems," report of a small scale teaching experiment, collaboration with a practicing elementary teacher.

Presentations:

Lectures and Presentations (invited)

1. "Manifest of a Mathematical Journey," keynote speaker, Symposium in Honor of John Kemper, University of St. Thomas, May 2011. (1 hour)
2. "Facilitating the Integration of Research-Level Mathematics into the K-12 Classroom," Mathematics Colloquium, University of Nebraska-Lincoln, April 2011. (1 hour)
3. "Connecting Content and Pedagogy Through Parallel Learning Strategies," with J. Epperson and C. Kribs-Zaleta, Math, Science, and Technology Teacher Preparation Academies Leaders Collaboration Conference, University of Texas at Arlington, March 2011. (20 min.)
4. "Mathematics Teacher Preparation Academy at the University of Texas at Arlington," with J. Epperson and C. Kribs-Zaleta, Math, Science, and Technology Teacher Preparation Academies Leaders Collaboration Conference, University of Texas at Arlington, March 2011.
5. "Mathematics, Science, and Technology Teacher Preparation Academies: Expanding Teaching and Learning Expertise Through Advanced Training," with A. Cavallo, J. Epperson, and G. Hale, College and Career Readiness Initiative: Mathematics and Science Summit, San Antonio, TX, September 2010. (1 hour)
6. "Mid-level and Secondary Mathematics Teacher Preparation Program," with J. Epperson and J. Lee, Mathematics Cross-Institutional Collaborative Seminar, Dallas, TX, February 2010. (20 min.)

7. Guest Cryptology Expert for Master of Arts in Interdisciplinary Science (MAIS) Contemporary Science course, University of Texas at Arlington, March 2008. (3 hours)
8. "Engaging the Honors Student in Mathematics-Teaching and Learning," with M. Cordero-Epperson and B. Shipman, National Collegiate Honors Council conference, Denver, CO, November 2007. (20 min)
9. "Examining Middle Grades Math Teacher Preparation at UTA: Connecting Content Knowledge and Pedagogy", University of Texas at Arlington, November 2006. (1 hour)
10. "Ensuring Teacher Quality: A Graduate Level Professional Development Module for Teachers in Algebra II", California State University, Fullerton, January 2006. (1 hour)
11. "Cryptology Unclassified," Science Career Options and Research Explorations seminar speaker, University of Texas at Arlington, April 2005. (1 hour)
12. "An Introduction to Error-Correcting Codes," All Girls/All Math, University of Nebraska-Lincoln, July 2004. (2 hours)
13. "Blow-up properties for Nonlinear Wave Equations on the Sphere," University of Texas at Dallas, April 2003. (1 hour)
14. "Existence for Nonlinear Wave Equations with Damping and Source Terms," Southern Methodist University, Dallas, TX, March 2003. (1 hour)
15. "Global Regularity for Nonlinear Wave Equations," University of Texas at Arlington, March 2003. (1 hour)
16. "Why Doesn't My CD Skip? - An Introduction to Coding Theory," Girls Experiencing Math in the Summer (GEMS) camp, University of St. Thomas, St. Paul, MN, July 2002. (2 hours)
17. "The Women of Undercover Math," Keynote speaker, Nebraska Conference for Undergraduate Women in Math, University of Nebraska-Lincoln, February 2002. (1 hour)
18. "Error-Correcting Codes - or How Do We Talk to Mars?," All Girls/All Math, University of Nebraska-Lincoln, July 2001. (2 hours)
19. Queueing Theory workshop, Power Math Camp, University of Nebraska-Lincoln, 2000. (3 hours)
20. "Queueing Theory - Hurry Up and Wait," Sonia Kovalevsky Day, University of St. Thomas, St. Paul, MN, November 1999. (3 hours)
21. "Women in Mathematics," Moderator, Sonia Kovalevsky Day, University of St. Thomas, St. Paul, MN, November 1999. (1 hour)

Panel Presentations (invited)

22. "Mathematical Research at Reach for K-12 Students," Panel Facilitator, NSF GK-12 Annual Meeting, Washington, D.C., March 2010. (1 hour)
23. "Careers in Mathematics," Texas Undergraduate Math Conference, Sam Houston State University, Huntsville, TX, October 2006. (1 hour)
24. "Careers in Mathematics," Nebraska Conference for Undergraduate Women in Math, University of Nebraska-Lincoln, February 2002. (1 hour)
25. International Teaching Assistant Training Workshop, University of Nebraska-Lincoln, July 2000.
26. "Graduate School: An Inside Look," Regional Workshop in Mathematics, University of Nebraska-Lincoln, 1999.
27. "Choosing a Graduate School," Nebraska Conference for Undergraduate Women in Math, University of Nebraska-Lincoln, 1999.

Presentations (refereed)

28. "Try Trisecting by Bisecting," Joint Mathematics Meetings, Boston, MA, January 2012. (20 min.)
29. "Facilitating the Integration of Research-Level Mathematics into the Classroom," workshop, with A. Brown, M. Cordero, J. Epperson, K. Helixon, K. Randell, and P. Veerapen, NSF GK-12 Annual Meeting, Washington, D.C., March 2011. (1 hour)
30. "The NSF GK-12 MAVS Project: Integrating Lesson in Mathematics into the K-12 Classroom," with A. Brown, M. Cordero, J. Epperson, K. Helixon, K. Randell, and P. Veerapen, NSF GK-12 Annual Meeting, Washington, D.C., March 2011.
31. "Developing models for localized cross-institutional mathematics education research groups," three-day working group co-led by B. Cory, S. Quebec Fuentes, C. Gawlik, D. Jones, and E. Ward, Thirty Second Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education, Columbus, OH, October 2010. (3 hours)
32. "Patterns that Aren't," Conference for the Advancement of Mathematics Teaching, San Antonio, TX, July 2010. (1 hour)
33. "Mathematical Misconceptions", Conference for the Advancement of Mathematics Teaching, Houston, TX, July 2009. (1 hour)
34. "Vertically Connecting College and Middle Grades Mathematics: The Two-Problem Comparison," MAA Mathfest, Madison, WI, July 2008. (20 min.)
35. "Pin the Number on the Number Line - What Numbers Actually Make Up the Real Number Line?" Conference for the Advancement of Mathematics Teaching, Dallas, TX, July 2008. (1 hour)
36. "Using Precalculus and Calculus to Develop Connections Surrounding Middle School Mathematics," Joint Math Meetings, San Diego, January 2008. (20 min.)
37. "Quenching for nonlinear wave equations in two and three space dimensions," 2006 Texas Partial Differential Equations Conference, University of Texas at Arlington. March 2006. (20 min.)
38. "Nonlinear Wave Equations on the Two Dimensional Sphere," SIAM meeting, Rio Grande, Puerto Rico, July 2000.
39. "Nonlinear Wave Equations on the Two Dimensional Sphere," Joint Math Meetings, Washington, D.C., January 2000.
40. "All Girls, All Math," Joint Math Meetings, Washington, D.C., January 2000.

Presentations (contributed)

41. "Engaging Minority Middle School Students in Mathematics," Joint Math Meetings, San Francisco, January 2010.
42. "Vertically Connecting Precalculus and Calculus with Middle School Mathematics," UTA College of Science Research Day, October 2008.
43. "Industrial Math Without Industry," University of Nebraska Mathematics and Statistics Centennial Celebration, Lincoln, May 1998.

Seminar Presentations:

44. "Discussion of 'Teaching and Learning Fraction Addition on Number Lines'," Mathematics Education Research Seminar, University of Texas at Arlington, March 2008.
45. "On Tall's Reflections on Advanced Mathematical Thinking," Mathematics Education Research Seminar, University of Texas at Arlington, October 2007.

Professional Development for University Faculty

46. “Overview of Algebra II Teacher Quality Module”, 10th Annual October Mathematics Higher Education Conference, Austin, TX, October 2004.
47. Department of Mathematics and Statistics Fall Orientation for New Teaching Assistants, co-organizer, presenter, University of Nebraska-Lincoln, 1997, 1998.
48. University of Nebraska-Lincoln Math/Science Graduate Teaching Assistant Workshop, Presenter, August 1997, August 1998.

Professional Development and Inservice for K-12 Mathematics Teachers

49. Mathematics Liaison, Advanced Placement Summer Institute, University of Texas at Arlington, June 2011
50. Mathematics Liaison, Advanced Placement Summer Institute, University of Texas at Arlington, June 2010
51. Mathematics Content Consultant for Texas Instruments’ MathForward program, presented a series of five mathematics content workshops for 15 middle school mathematics teachers, Dallas Independent School District, September–December 2008
52. “Studying Functions Through Covariational Reasoning,” professional development workshop for Precalculus teachers in Arlington Independent School District (ISD), August 2008
53. “Mathematics Habits of Mind and Logarithmic Functions,” professional development workshop for Algebra II and Pre-AP Algebra II teachers in Arlington ISD, August 2007

Program Development and Teaching**Student Supervision:**

1. Tom Stanbury, July 2012 (directed master’s project *A Study on the Impact of the MAVS GK-12 Experience on Fellows’ Teaching at the University Level*, 78 pages, University of Texas at Arlington)
2. Emily Tang, July 2012 (directed master’s project *Composing a List of Supplemental Lessons from MAVS GK-12 Fellows to Promote Concepts and Techniques in Algebra Course*, 55 pages, University of Texas at Arlington)
3. Kimberly Buchmeyer, May 2012 (directed master’s project *The Evaluation of the University of Texas at Arlington GK-12 MAVS Fellows’ Lesson Plans for Inclusion in an Advanced Algebra in Secondary School Graduate Studies Course*, 73 pages, University of Texas at Arlington)
4. Moeen Damrah, May 2012 (directed master’s project *Compiling and Evaluating Pre-Algebra and Algebra I GK-12 MAVS Lessons*, 241 pages, University of Texas at Arlington)
5. Stephanie Hicks, May 2012 (directed master’s project *How the MAVS GK-12 Program Influences Mentor Teachers’ Planning and Instruction*, 50 pages, University of Texas at Arlington)
6. Cora Morris, May 2011 (directed master’s project *Outstanding Education in a High-Minority, Low-Income Elementary School Setting: Common Characteristics*, 45 pages, University of Texas at Arlington)
7. Jerald Wilson, May 2011 (directed master’s project *Is the No Child Left Behind Act Leaving Minorities Behind?*, 37 pages, University of Texas at Arlington)
8. Brenda Champlin, M.A. in Mathematics, May 2011 (directed master’s project *An Experiment with Worked Examples*, 31 pages, University of Texas at Arlington)
9. Basanti Poudyal, M.S. in Mathematics, April 2011 (directed master’s project *Teachers’ Understanding of Logarithmic and Exponential Functions*, 60 pages, University of Texas at Ar-

- lington)
10. Shelley Taborsky, M.A. in Mathematics, April 2011 (directed master's project *Mathematics Remediation in College: What are states doing to close the gap?* 43 pages, University of Texas at Arlington)
 11. Traci Ziebarth, M.A. in Mathematics, April 2011 (directed master's project *The Impact of the University of Texas at Arlington GK-12 Project Professional Development Institute on the Participating Mentor Teachers*, 61 pages, University of Texas at Arlington)
 12. Jon Phillips, M.A. in Mathematics, December 2008 (directed master's project *Simplifying fractions: is teaching fractions after algebra rational?* 55 pages, University of Texas at Arlington)
 13. Donna Lee, M.A. in Mathematics, November 2007 (directed master's project *The graphing calculator and homework: does free access to a graphing calculator lead to better performance on classroom assessments?*, 55 pages, University of Texas at Arlington)
 14. Veronica Villa, M.A. in Mathematics, November 2007 (directed master's project *Inquiry-based learning for college students in developmental math*, 52 pages, University of Texas at Arlington)
 15. Kristin Creech, November 2007, (directed undergraduate honors thesis *Characterizing Wavelet Sets Under Varying Dilation Factors*, 25 pages, University of Texas at Arlington)
 16. Sarah Parker, M.S. in Mathematics, August 2007 (directed master's project *Preparing future middle school teachers to teach fraction division: a snapshot of the programs in Texas colleges and universities*, 61 pages, University of Texas at Arlington)
 17. Margaret Henckell, M.A. in Mathematics, May 2007 (directed master's project *Learning the hard way: a lesson for students and teachers*, 72 pages, University of Texas at Arlington)

Current Graduate Students:

Masters

Frank Martinez	Kristin Seale
Jane Knight	Nhi Bui
Jill McCormick Alexander	Krishna Acharya

Graduate Committees Served on:

Doctoral

Angela Brown, Ph.D. Mathematics, May 2012
 Paul Dawkins, Ph.D. Mathematics, December 2009

Masters

Veronica Meeks, M.A., May 2012
 Bill Jenkins, M.A., May 2012
 Melissa Vela, M.A., April 2011
 Kursat Guzey, M.S., April 2010
 Sandra Miller, M.A., December 2008
 Mark Krasij, M.S., December 2008
 Ashlee Defillipis, M.A., December 2008
 Vidalina Trevino, M.A., December 2008
 Leslie Woods Stice, M.A., December 2008
 Jana Tiller, M.A., April 2008
 Gina Kaucher, M.A., November 2007
 Abdelhak Ibn el farouk, M.S., November 2007

Maya Savic, M.A., November 2007
 Linda Somerhalder, M.A., November 2007
 Nahid Pope, M.A., November 2007
 Sandra Hodges, M.A., November 2007
 Robin Wolf, M.A., July 2007
 Maria Sayan, M.A., May 2007
 Sherry Embry, M.A., April 2007
 John Martin, M.A., April 2007
 Daniel Armendariz, M.A., April 2006
 Charmaine Culclager, M.A., April 2006
 Minkay Tinker, M.A., April 2006
 Carole Lawler, M.A., November 2005
 Susan Gann, M.A., November 2005
 Laura Poulson Salazar, M.A., November 2005

Mathematics Courses Taught at University of Texas at Arlington

(Course numbers 5000 and above indicate graduate courses)

1302 College Algebra
 1313H Liberal Arts Honors Mathematics
 1331 Geometrical Inference and Reasoning
 1426 Calculus I
 1426H Honors Calculus I
 2425H Honors Calculus II
 3318 Differential Equations
 3319 Differential Equations and Linear Algebra
 4350 Precalculus for Mid-level Mathematics Teachers
 4351 Calculus for Mid-level Mathematics Teachers
 4393 Honors Thesis Senior Project (Wavelet Sets)
 5336 Concepts and Techniques in Number Theory
 5340 Concepts and Techniques in Discrete Mathematics
 5341 Concepts and Techniques in Geometry
 5342 Concepts and Techniques in Algebra
 5343 Concepts and Techniques in Probability and Statistics
 5347 Concepts and Techniques in Mathematical Modeling with Applications
 5348 Concepts and Techniques in Advanced Algebra in Secondary School Mathematics
 5352 Concepts and Techniques in Precalculus
 5370 Problem Solving in K-8 Mathematics
 5375 Constructing Whole Number and Operations in K-8 Mathematics
 5376 Constructing Rational Number and Operations in K-8 Mathematics
 5378 Geometry Concepts in K-8 Mathematics
 5379 Measurement Concepts in K-8 Mathematics
 5391 Topics in Mathematics Education Research
 5392 Survey of Research in Mathematics Education
 5395 Special Project (Masters degree projects)

I developed Precalculus for Mid-level Mathematics Teachers (4350), Calculus for Mid-level Mathematics Teachers (4351), and Concepts and Techniques in Precalculus (5352).

NSF GK-12 MAVS Program

The GK-12 MAVS Program is a partnership between the UT-Arlington Mathematics Department and Arlington ISD. Each school year, 8 GK-12 fellows, who are Ph.D. students actively doing mathematics research, are partnered with 8 mentor teachers at Sam Houston High School and its three feeder middle schools. The fellows spend 10 hours each week in their mentor teachers' class rooms assisting with active learning strategies. Throughout the school year, the GK-12 fellow presents six lessons on his or her own research in the mentor teacher's classroom. The lessons are developed so that they fit with the curriculum of the school, and vertically connect the mathematics from the middle school level up through the graduate level.

1. I **recruit** mentor teachers to pair with GK-12 fellows.
2. Together with James Epperson, I **designed and facilitated** the two week summer GK-12 Professional Development Institute (PDI). The PDI is where the collaboration between the GK-12 fellows and mentor teachers is established, and where the development of the fellows' research lessons takes place.
3. I **oversee** the coordination of the GK-12 outreach activities, in particular, the establishment of the Sam Houston High School Math Club.
4. I **mentor** two GK-12 fellows each program year.

UTeach Arlington

The University of Texas at Arlington is a replication site for the UTeach model for educating highly qualified science, technology, engineering, and mathematics teachers.

1. I developed the UT Arlington Mathematics B.A. with Secondary Certification degree plan to align our training of secondary mathematics teachers to the UTeach model.
2. I am developing and adapting curricular materials for the UTeach Arlington mathematics content course Functions and Modeling.
3. I am member of the Steering Committee for UTeach Arlington.

Teacher Quality Program

1. Through a partnership I maintain with Arlington Independent School District (ISD), Hurst Eules Bedford ISD, and Fort Worth ISD, since 2009 I have **recruited** over 60 practicing elementary and middle school teachers to complete the K-8 Mathematics Education graduate program. The teachers are supported to complete 6 mathematics graduate courses each. I attend many meetings with area mathematics supervisors to promote the graduate programs for teachers at UT-Arlington. These students are all supported through grant funding from the Texas Higher Education Coordinating Board Teacher Quality Program. The teachers' graduate tuition is paid by the partner school districts.
2. I **coordinate the admission, registration, and financial support** for these students, as well as teach many of the courses in the program.
3. **Leader** of Capstone Seminar for Teacher Quality participants, in which teachers prepare model mathematics lessons to present at the Conference for the Advancement of Mathematics Teaching (CAMT), May 2009, May 2010, and May 2011.
4. Each summer, I **coordinate and facilitate** presentations by the Teacher Quality participants at CAMT. The teachers present model lessons they have developed during their graduate coursework.
5. Each spring semester, I spend over 40 hours making elementary and middle school visits to do **observations** of the Teacher Quality supported teachers for program evaluation.

UT-Arlington Mathematics Teacher Preparation Academy (MTPA) Program

1. Through a partnership with the administration of the Fort Worth ISD, I **recruited** 24 elementary and middle school mathematics coaches from Fort Worth ISD to enter the K-8 Mathematics Education graduate program. This is one component of the UT-Arlington Mathematics Teacher Preparation Academy. The Texas Higher Education Coordinating Board-funded program provides tuition support for the teachers to take 6 graduate mathematics courses over two years, and complete their M.Ed. in Curriculum and Instruction. 25 secondary mathematics teachers are also supported to complete their M.A. in Mathematics through this program.
2. I **recruited** 10 undergraduate prospective middle school mathematics teachers for the academy. The undergraduates have tuition support for two years provided by the program.
3. I **developed a mentoring and learning support structure** for the undergraduate component of the MTPA. This included recruiting master teachers from Arlington ISD to serve as mentors to the undergraduates.

UT-Arlington NSF Noyce Scholarship Program for Science and Mathematics Teachers

1. The UT-Arlington NSF Noyce program is a partnership across the Colleges of Science and Education to provide scholarships and mentoring support for juniors and seniors pursuing mathematics or science teacher certification. The recipients commit to teaching in a high-need school district upon completion of their degree. The aim is to increase the number of highly qualified mathematics and science teachers who are serving our high-need student populations.
2. Each spring semester, I recruit prospective Noyce candidates by visiting science and mathematics classrooms across UT-Arlington to describe the program.

Professional Activities and Service

University Outreach

1. 2012 Math and Science Day campus visit, organizer, **320** Riverside Middle School eighth grade participants, May 2012
 - Together with Dr. Tuncay Aktosun, I have created a partnership with Riverside Middle School in Fort Worth and the Fort Worth Rotary Club to support the mathematical development of Riverside's 900 students, students who are largely from populations who have been underrepresented in mathematics. I successfully sought grant funding from the Tensor Foundation of the Mathematical Association of America to fund these outreach activities. For each outreach event, I designed the mathematics activities, and recruited student volunteers from the Mathematics Department to support the event.
2. UT Arlington Sonia Kovalevsky Day for Girls, co-organizer, attended by **70** girls in grades 6–8, April 2012
3. Career Day Guest Speaker, Butler Elementary School, April 2012
4. Co-organizer of Governor's Science and Technology Champions Academy - weeklong summer camp for winners of Texas State Science Fair held at UT Arlington, August 2011
5. Curriculum consultant, 2011 ExxonMobil Bernard Harris Summer Science Camp for middle schoolers, University of Texas at Arlington, July 2011
6. Career Day Guest Speaker, Fifth Grade, Foster Elementary School, May 2011

7. 2011 Math and Science Day campus visit, organizer and presenter, **320** Riverside Middle School eighth grade participants, March 2011
8. Career Day Guest Speaker, Fifth Grade, Ellis Elementary School, March 2011
9. Sally Field Science Festival, designed mathematics activity for middle school girls, recruited and trained undergraduate and graduate student activity leaders, October 2010
10. Curriculum consultant, 2010 ExxonMobil Bernard Harris Summer Science Camp for middle schoolers, University of Texas at Arlington, July 2010
11. Career Day Guest Speaker, Fifth Grade, Foster Elementary School, May 2010
12. Career Week Guest Speaker, First Grade, Butler Elementary School, April 2010
13. Invited speaker at Sam Houston Math Club, April 2010
14. 2010 Math and Science Retreat for Riverside Middle School at UTA Fort Worth Center, **110** 8th grade student participants, February 2010
 - Recruited **14** mathematics undergraduate and graduate student presenters
15. 2009 Math and Science Day campus visit, **320** Riverside Middle School eighth grade participants, November 2009
 - Led the mathematics activity
 - Recruited over **40** mathematics undergraduate and graduate student volunteers
16. Curriculum consultant, 2009 ExxonMobil Bernard Harris Summer Science Camp for middle schoolers, University of Texas at Arlington, July 2009
17. 2009 Math and Science Retreat for Riverside Middle School at UTA Fort Worth Center, **110** 8th grade student participants, February 2009
 - Recruited **17** mathematics undergraduate and graduate student presenters
18. 2008 Math and Science Day campus visit, **320** Riverside Middle School eighth grade participants, November 2008
 - Led the mathematics activity
 - Recruited over **25** mathematics undergraduate and graduate student volunteers
19. Martin High School Algebra Math Camp, curriculum developer, University of Texas at Arlington, August 2008
20. Curriculum developer, 2008 ExxonMobil Bernard Harris Summer Science Camp for middle schoolers, University of Texas at Arlington, July 2008
21. 2008 Math and Science Retreat for Riverside Middle School at UTA Fort Worth Center, **104** 6th, 7th, and 8th grade student participants, February 2008
 - Led mathematics activity
 - Recruited **11** mathematics undergraduate and graduate student volunteers
22. Instructor, Codes class, All Girls/All Math, University of Nebraska–Lincoln, July 2002.
23. All Girls/All Math summer camps, graduate assistant for coding, chaos workshops and dorm supervisor, University of Nebraska–Lincoln, 1998, 1999, 2000.
24. University of Nebraska–Lincoln Math Day, assistant director, 1996–2000.
25. MESA (Mathematics, Engineering, Science Achievement) summer program, instructor and graduate assistant, University of Nebraska–Lincoln, 1998, 2000.
26. It's a Math Thing summer program, graduate assistant and dorm supervisor, University of Nebraska–Lincoln, 2000.
27. Power Math camp, organizer, graduate assistant, University of Nebraska–Lincoln, 1999.
28. 4–H Expovision '99, graduate assistant for coding workshop, University of Nebraska–Lincoln, 1999.

Professional service outside UT Arlington

1. Referee for Asia Pacific Education Review, 2012
2. Referee for *Proceedings of the Thirty Fourth Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*
3. Judged Ft. Worth Regional Science & Engineering Fair held at UT Arlington, February 2012
4. Judged MAA Undergraduate Student Poster Session presentations, Joint Mathematics Meeting, Boston, MA, January 2012
5. National Mathematics Alliance mentor, 2010–present
6. Member of registration committee for Association of Mathematics Teacher Educators 2012 National Conference, Ft. Worth, TX, February 2012
7. Trondheim International School Advisory Committee member, August–December 2011
8. Co-organizer of Math, Science, and Technology Teacher Preparation Academies Leaders Collaboration Conference, March 2011
9. Organizer of Mathematics Education Research Group in North Texas (MERGiNT), a working group of 15 faculty members from 7 North Texas universities, 2009–present
10. Referee for NCTM journal, *Mathematics Teacher*, 2010–present
11. Referee for *Proceedings of the Thirty Third Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*
12. Reviewed proposals for Association of Mathematics Teacher Educators 2011 Annual Meeting
13. Referee for *Proceedings of the Thirty Second Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*
14. Reviewed proposals for Association of Mathematics Teacher Educators 2010 Annual Meeting
15. Refereed article for American Mathematical Society series “Contemporary Mathematics”, November 2007
16. Refereed articles for *Texas College Mathematics Journal*, July 2007, November 2007.
17. Member, AISD Transfer Procedures Committee, Summer 2008

Department Service

1. Faculty Recruiting Committee member, May 2012 – present
2. Public Relations and Awards Committee member, May 2012 – present
3. Calculus committee, September 2009 – present
4. Graduate Forum Colloquium panel member, March 2012
5. GAANN Day Mentoring Panel member, March 2012
6. Volunteer, UTA Calculus Bowl 2012
7. Undergraduate Affairs committee, May 2008 – April 2012
8. Advisory committee, September 2010 – May 2011
9. Co-writer of graduate preliminary exam B in Pure and Applied Analysis, spring 2011
10. Volunteer, UTA Calculus Bowl 2011
11. Speaker at UT Arlington Association for Women in Mathematics monthly meeting, October 2010
12. Mathematics Department representative to Major Exploration class, March 2010
13. UTA Calculus Bowl, Announcer, February 2010
14. Proctor of graduate preliminary exams, January 2009, 2010, 2011, 2012
15. Organizer, Mathematics Education Research Seminar, August 2008 – 2012
16. UTA Calculus Bowl, Announcer, February 2008
17. Mathematics Department representative to UTA preview day, April, September 2008

University Service

1. College of Science Development Committee member, 2012 – present
2. UTeach Arlington Steering Committee member, 2010 – present
3. Mathematics content advisor for mid-level math/science and mid-level generalist education majors (advising approximately 40 students per year), September 2007 – present
4. College of Science Teaching Awards Committee member, Fall 2007 – present
5. College of Education and Health Professions Continuous Assessment Team, November 2010
6. Mathematics Pedagogical Consultant for UTA undergraduate prospective mathematics teachers supported through NSF-Noyce program, August 2009 – May 2015
7. Judge for Honors Undergraduate Research and Creative Activity symposium, November 2009
8. Judge for Honors Undergraduate Research and Creative Activity symposium, April 2008
9. Guest Cryptology Expert for Master of Arts in Interdisciplinary Science Contemporary Science course, March 2008

Other Professional Activities:**Additional Conference Participation:**

1. Teacher Quality Grant Program Technical Meeting, Austin, TX, April 2012
2. MSRI Workshop - Critical Issues in Mathematics Education 2012, Teacher Education in View of the Common Core, Berkeley, CA, March 2012
3. UTeach Functions and Modeling Workshop, Austin, TX, March 2012
4. Conference for the Advancement of Mathematics Teaching, Grapevine, TX, July 2011
5. Teacher Quality Grant Program Technical Meeting, Austin, TX, October 2011
6. Mathematics Education Research in Texas conference, Sam Houston State, Huntsville, TX, November 2010
7. Teacher Quality Grant Program Technical Meeting, Austin, TX, October 2010
8. Teacher Quality Grant Program Technical Meeting, Austin, TX, May 2010
9. 2010 Mathematics, Science, and Technology Teacher Preparation Academies Leaders Collaboration Conference and Technical Workshop, Texas State University, San Marcos, TX, February 2010.
10. Southwest Regional National Science Foundation GK-12 Conference, University of North Texas Health Science Center, Ft. Worth, TX, November 2009
11. Mathematics Education Research in Texas conference, Sam Houston State, Huntsville, TX, November 2009
12. Teacher Quality Grant Program Technical Meeting, Austin, TX, October 2009
13. Teacher Quality Grant Program Technical Meeting, Austin, TX, May 2009
14. Mathematics Education Research in Texas conference, Sam Houston State, Huntsville, TX, November 2008
15. Annual October Mathematics Higher Education and Science Higher Education Conference, Austin, TX, October 2008
16. Teacher Quality Grant Program May Meeting, Austin, TX, May 2008
17. Annual October Mathematics Higher Education and Science Higher Education Conference, Austin, TX, October 2007
18. Math TEKS Connections Conference, Texas A & M, May 2007
19. Preparing Mathematicians to Educate Teachers, University of Nebraska, Lincoln, June 2006.
20. Joint Math Meetings, San Antonio, TX January 2006.
21. 6th Joint International Meeting of the AMS and SMM, Houston, TX, May 2004.

22. South Central Regional Weekend Algebra Conference, Loyola University, New Orleans, LA, April 2002.
23. Joint Math Meetings, San Diego, CA, January 2002.
24. 971st meeting of the AMS, Williamstown, MA, October 2001.
25. Third Annual International Conference on Dynamical Systems and Applications, Morehouse College, Atlanta, GA, May 1999.
26. Nebraska Conference for Undergraduate Women in Math, University of Nebraska, Lincoln, March 1999.
27. Regional Workshop in Mathematics, University of Nebraska, Lincoln, February 1999.
28. Rocky Mountain Mathematics Consortium Summer Conference: Difference Equations and their Applications, University of Wyoming, Laramie, July 1997.
29. Barrett Lectures: Control Theory and Applications, University of Tennessee, Knoxville, March 1997.
30. Julia Robinson Conference, Mathematical Sciences Research Institute, Berkeley, CA, July 1996.

Collaborative Research Visits:

1. Trondheim, Norway, August–December 2011
2. Bielefeld, Germany, May–July 2009
3. Lincoln, NE, August 2008
4. Lincoln, NE, May 2005
5. Lincoln, NE, July 2004 (K. Agre)
6. Lincoln, NE, December 2003 (M. Rammaha)
7. St. Cloud, MN, August 2002 (K. Agre)

Travel Awards:

1. Mathematical Science Research Institute (MSRI) Travel Award, Critical Issues in Mathematics Education, March 2012
2. University of Nebraska-Lincoln Travel Award, May 2005
3. University of Nebraska-Lincoln Travel Award, July 2004
4. Association for Women in Mathematics travel award, SIAM meeting, Rio Grande, Puerto Rico, July 2000
5. Association for Women in Mathematics travel award, Joint Math Meetings, Washington, D.C., January 2000

Further Professional Activities

1. Member, Grant Reviewal committee and Internal Affairs committee, NSA Women in Mathematics Society, 2001–2002.
2. Organizer, NSA Math Development Programs Class of 2004 monthly meetings.
3. NSA new math applicant escort.
4. Interviewer for Math Hiring Advisory Board, NSA.
5. Information Assurance Development and Education Program intern, NSA, 2001–2002.
6. Emerging Scholars Workshop, University of Texas, Austin, participant, 2000.
7. Deborah Schifter workshop on teaching mathematics, UNL, Fall 2000.
8. Visited University of California, Irvine, January–February, 2000.
9. Preparing Future Faculty Fellow, UNL, 1998–1999.

10. Preparing Future Faculty Advisory Board, member, UNL, 1998–1999.
11. Workshop on Learning and Technology, UNL, February 1999.

Professional Society Memberships:

1. Association of Mathematics Teacher Educators
2. Association of Mathematics Teacher Educators-TX
3. SIGMAA on Research in Undergraduate Mathematics Education
4. North American Chapter of the International Group for the Psychology of Mathematics Education
5. American Mathematical Society
6. Mathematical Association of America
7. National Council of Teachers of Mathematics
8. Texas Council of Teachers of Mathematics
9. Metroplex Council of Supervisors of Mathematics