Michele L. Joyner
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Education

North Carolina State University, Raleigh, North Carolina

Ph.D., August 2001
Major: Applied Mathematics
Concentration: Computational Mathematics
Thesis Title: "An Application of a Reduced Order Computational Methodology for Eddy Current Based Nondestructive Evaluation Techniques"
Thesis Advisor: Prof. H.T. Banks

North Carolina State University, Raleigh, North Carolina

M.S., May 1999
Major: Applied Mathematics

Georgia Institute of Technology, Atlanta, Georgia

B.S., with highest honors, June 1995
Major: Applied Mathematics

Professional Experience

East Tennessee State University, Associate Professor, August 2014 – current
- Duties include teaching 2 courses per semester, individual research, and service.

East Tennessee State University, Assistant Professor, August 2010 – August 2014
- Duties include teaching 2 courses per semester, individual research, and service.

Kennesaw State University, Visiting Assistant Professor, August 2008 – June 2010
- Duties included teaching 3 courses per semester and serving as the Supplemental Instruction (SI) Assistant Coordinator in the Mathematics Department.

CFI Group, Research Consultant, September 2007 – May 2008
- CFI Group is a consulting firm which provides statistical analysis on customer satisfaction for companies such as Best Buy, AT&T, Verizon, UPS, etc. Given data from various regions, CFI provides reports as to what factors influence customer satisfaction. My role, in conjunction with the research analysts within CFI Group, was to develop a technique to provide tailored individual level impact analysis for a specific store or company using all the data from various regions, stores and companies as opposed to using the standard global fit.

University of West Georgia, Part-time Instructor, August 2007 – May 2008
- Duties including teaching 2 courses per semester.

University of West Georgia, Assistant Professor, August 2002 – May 2005
- Duties including teaching 9 hours per semester, committee work, and individual research. I also served as the Peer-led Problem Session Coordinator within the Department.

MIT Lincoln Laboratory, Technical Staff, July 2001 – July 2002
- Worked on a joint project between MIT Lincoln Laboratory and the Department of Defense to illustrate the effectiveness of electronic and infrared countermeasures on air vehicle survivability (required secret security clearance).

North Carolina State University, Center for Research in Scientific Computation, NASA Graduate Student Research Fellow, August 1998 - June 2001

- Worked on a joint project, under the direction of Dr. H.T. Banks, with the Center for Research in Scientific Computation at North Carolina State University and NASA Langley Research Center to develop and test a fast, efficient algorithm for nondestructive evaluation using the proper orthogonal decomposition algorithm.

North Carolina State University, Center for Research in Scientific Computation, Research Assistant, May 1997 - August 1998

- Worked on a joint project, under the direction of Dr. H.T. Banks, with the Center for Research in Scientific Computation at North Carolina State University and Lord Corporation in Cary, NC to investigate the dipolar heating of adhesives used in the bonding of metals.

Mount Olive College, Instructor, November 1998 - April 1999

- Designed and taught a Pre-Algebra/Algebra sequence for non-traditional students majoring in business administration.

North Carolina State University, Teaching Assistant, August 1996 - May 1997

- Taught recitation classes for pre-calculus and calculus courses for undergraduate students.

Teaching

East Tennessee State University, Johnson City, TN

Courses Taught:

MATH 2010: Linear Algebra
MATH 2110: Calculus III
MATH 2120: Differential Equations
MATH 2120H: Honors Enhanced Differential Equations
MATH 3250: Intro Stochastic Modeling
MATH 3250H: Honors Enhanced Intro Stochastic Modeling
MATH 4010: Undergraduate Research
MATH 4010H: Honors Enhanced Undergraduate Research
MATH 4010P: Undergraduate Research: Preparation for Industrial Careers in Math
MATH 4018: Honors Thesis
MATH 4027: Intro to Applied Math
MATH 4257/5257: Numerical Analysis
MATH 4267/5267: Numerical Linear Algebra
MATH 4267H: Honors Enhanced Numerical Linear Algebra
MATH 4957/5957: Introduction to Stochastic Processes
MATH 4957H: Honors Enhanced Introduction to Stochastic Processes
MATH 4957/5957: Preparation for Industrial Careers in Math
MATH 5890: Stochastic Modeling

Kennesaw State University, Kennesaw, Georgia

Courses Taught:

MATH 1113: Precalculus
MATH 1190: Calculus I
MATH 3260: Linear Algebra I

University of West Georgia, Carrollton, Georgia

Courses Taught:

MATH 1111: College Algebra
MATH 1113: Precalculus
MATH 1113H: Honors Precalculus
MATH 1413: Survey of Calculus
MATH 1634: Calculus I
MATH 2853: Elementary Linear Algebra

MATH 3303: Ordinary Differential Equations
MATH 3353: Methods of Applied Mathematics
MATH 4013: Numerical Analysis
MATH 4513: Linear Algebra I
MATH 4363: Partial Differential Equations
XIDS 2002: What Do You Really Know About Science & Technology

Mount Olive College, Research Triangle Park, North Carolina
Courses Taught:
MAT 110: Intermediate Algebra
MAT 120: College Algebra

North Carolina State University, Raleigh, North Carolina
Recitation Sessions Taught:
MA 107: Pre-calculus
MA 141: Calculus I

Research Interests

Deterministic and stochastic mathematical modeling along with the associated mathematical techniques for such modeling such as numerical methods, inverse problems, uncertainty quantification, differential equations, and partial differential equations.

Publications

1. Michele L. Joyner and Nicholas J. Joyner (high school), “Using Predictive Modeling to Examine the Potential Implications of using Ranked Choice Voting in the 2016 Presidential Election”, submitted *Involve – a journal of mathematics*, January, 2018.
2. H. T. Banks and Michele L. Joyner, “Information Content in Data Sets: A Review of Methods for Interrogation and Model Comparison”, CRSC Technical Report, CRSC-TR-17-15, submitted *Journal of Inverse and Ill-Posed Problems,* June 2017.
3. H. T. Banks and Michele L. Joyner, “AIC under the framework of least squares estimation”, CRSC Technical Report, CRSC-TR-17-09, *Applied Math Letters,* Vol. 74, pp. 33-45, May 2017.
4. H. T. Banks and Michele L. Joyner, “Parameter Estimation for Random Differential Equation Models”, CRSC Technical Report, CRSC-TR-16-15, *Eurasian Journal of Mathematical and Computer Applications,* Vol. 5, Issue 1, pp. 5-44, February 2017.
5. Michele Joyner and Thomas Robacker (former graduate student). “MCR Method for Estimation of Parameters in Continuous Time Markov Chain Models”. *International Journal of Pure and Applied Mathematics*, Vol. 112, No. 2, pp. 381-416, February 2017.
6. H. T. Banks and Michele L. Joyner, “Deterministic Methodology for Comparison of Nested Stochastic Models”, CRSC Technical Report, CRSC-TR-16-13, *Communication in Applied Analysis; An International Journal for Theory and Applications,* p. 57-106, January 2017.
7. Quijano, Alex John (undergraduate), Michele L. Joyner, Chelsea Ross (former undergraduate), J. Colton Watts (former graduate), Edith Seier, and Thomas C. Jones. "Spatio-temporal analysis of foraging behaviors of *Anelosimus studiosus* utilizing mathematical modeling of multiple spider interaction on a cooperative web." *Journal of Theoretical Biology,* p. 243-259, August 2016.
8. Michele L. Joyner, Cammey C. Manning, Whitney Forbes (graduate), Michelle Maiden (undergraduate), Ariel N. Nikas (undergraduate), “A Physiologically-Based Pharmacokinetic Model for the Antibiotic Ertapenem”, *Mathematical Biosciences and Engineering,* Vol. 13, Number 1, pp. 119-133, February 2016.
9. Alex J. Quijano (undergraduate), Michele L. Joyner, Edith Seier, Nathaniel Hancock (undergraduate), Michael Largent (undergraduate), and Thomas C. Jones, “An Aggregate Stochastic Model Incorporating Individual Dynamics for Predation Movements of *Anelosimus studiosus*”, MBE vol. 12, no. 3, p. 585-607, June 2015.

10. Michele L. Joyner, Chelsea R. Ross (undergraduate), Colton Watts (graduate) and Thomas C. Jones, "A Stochastic Simulation Model for *Anelosimus studiosus* during Prey Capture: a Case Study for Determination of Optimal Spacing", MBE vol. 11, no. 6, p. 1411-1429, December 2014.
11. Michele L. Joyner, Edith Seier, and Thomas C. Jones, Distances to a point of reference in spatial point patterns, *Spatial Statistics,* Vol. 10, pp. 63-75, November 2014.
12. Michele Joyner, Chelsea Ross (undergraduate), and E. Seier, Distance to the border in spatial point patterns, *Spatial Statistics*, Vol. 6, pp. 24-40, DOI: 10.1016/j.spasta.2013.05.002, July, 2013; in print: November, 2013.
13. Michele L. Joyner, Cammey C. Manning, and Brandi N. Canter (undergraduate), Modeling the Effects of Introducing a New Antibiotic in a Hospital Setting: A Case Study, *Mathematical Biosciences and Engineering,* Vol. 9, No. 3, pp. 601-615, July, 2012.
14. HT Banks, S. Hu, M. Joyner, A. Broido (undergraduate), B. Canter (undergraduate), K. Gayvert (undergraduate), and K. Link (undergraduate), A Comparison of Computational Efficiencies of Stochastic Algorithms in Terms of Two Infection Models, CRSC Technical Report CRSC-TR11-13, *Mathematical Biosciences and Engineering*, Vol. 9, No. 3, pp. 487-526, July 2012.
15. Michele L. Joyner, Modeling the Differences in the Development of a New Antibiotic Class versus the Development of a Next Generation Antibiotic on the Total Resistance in a Hospital Setting, *Journal of Biological Systems,* Vol. 20, No. 1, pp. 109-132, March 2012.
16. HT Banks, Anna Broido (undergraduate), Brandi Canter (undergraduate), Kaitlyn Gayvert (undergraduate), Shuhua Hu, Michele L. Joyner, and Kathryn Link (undergraduate), Simulation Algorithms for Continuous Time Markov Chain Models, CRSC Technical Report CRSC-TR11-17, *Simulation and Modeling Related to Computational Science and Robotics Technology: Proceedings of SiMCRT 2011,* editors Fumio Kojima, Futoshi Kobayashi, and Hiroyuki Nakamoto, IOS Press, p 3-18, 2012.
17. Michele L. Joyner, A Numerical Study for the POD Method in NDE, *Applied Mathematics and Computation* (174) 2006, 732-754.
18. Michele L. Joyner, Comparison of Two Techniques for Implementing the Proper Orthogonal Decomposition Method in Damage Detection Problems, *Mathematical and Computer Modeling* (40) 2004, 553-571.
19. Jammer Multiplexing Issues, Project Report CMT-210, Lincoln Laboratory, Massachusetts Institute of Technology, 2002.
20. H.T. Banks, Michele L. Joyner, Buzz Wincheski, and William P. Winfree, Real time computational algorithms for eddy current based damage detection, CRSC Technical Report CRSC-TR01-16, *Inverse Problems* (18) 2002, 795-823.
21. H.T. Banks, Michele L. Joyner, Buzz Wincheski, and William P. Winfree, Electromagnetic interrogation techniques for damage detection, CRSC Technical Report CRSC-TR01-15, In: *Proceedings of the 7th International Workshop on Electromagnetic Nondestructive Evaluation*, Kobe (Japan), May 17-19, 2001.
22. H.T. Banks, Michele L. Joyner, Buzz Wincheski, and William P. Winfree, Nondestructive evaluation using a reduced-order computational methodology, NASA/CR-2000-209870 ICASE Report No. 2000-10; *Inverse Problems* (16) 2000, p. 929-945.
23. H.T. Banks, Michele L. Joyner, Buzz Wincheski, and William P. Winfree, Reduced order computational methodology for damage detection in structures, *Nondestructive Evaluation of Aging Aircraft, Airports, and Aerospace Hardware IV*, (3994) 2000, p.10-17.

24. H.T. Banks, Michele L. Joyner, Buzz Wincheski, and William P. Winfree, Evaluation of material integrity using reduced order computational methodology in structures, Tech. Rep. CRSC-TR99-30, NCSU, Aug. 1999.
25. H.T. Banks, S.R. Durso, M.A. Goodhart, and M. L. Joyner, On the radio-frequency inputs in dipolar heating of adhesives, *Journal of Microwave and Electromagnetic Energy,* (33) 1998, p.231-242.

Invited Presentations

- "Development of the MCR Method for Parameter Estimation in Continuous-Time Markov Chain Models", 2016 SIAM Conference on the Life Sciences, Boston, MA, July 11-15, 2016.
- "Modeling the Effect of Body Mass Index on Blood Concentration Levels for Three Different Antibiotics", SIAM SEAS 2016, University of Georgia, March 12-13, 2016.
- "Investigation of a New Numerical Method for Parameter Estimation in Continuous-Time Markov Chain Models", IV International Conference on Applied Mathematics, Design and Control: Conference on Mathematical Methods and Modeling in Engineering and Life Sciences, Buenos Aires, Argentina, November 4-6, 2015.
- "Modeling the Effects of Admission and Discharge Rates on the Overall Spread of Antimicrobial Resistance in a Hospital", Southeast Atlantic Section Meeting of SIAM 2013, UT Knoxville, March 22-24, 2013.
- "Exploring Antibiotic Resistance in a Hospital Setting", 2nd Conference on Mathematical Methods and Modeling in Life Sciences and Biomedicine, Sile, Istanbul, Turkey, August 15-19, 2011
- 'Impact of 2010 MAA Prep Workshop "Mathematical Modeling in Population Biology and Epidemiology" In Research and Teaching' (Poster Presentation), Joint Mathematics Meetings, New Orleans, LA, January 6-9, 2011.
- "Issues in Implementing the POD Methodology in NDE", Southeast Atlantic Section Meeting of SIAM, March 25-26, 2005.
- "Computational algorithms for electromagnetic interrogation using reduced order proper orthogonal decomposition techniques", Applied Inverse Problems: Theoretical and Computational Aspects, May 18-23, 2003.

Presentations

- **"**Experiences from Implementing an Industrial Project-Based Course in the Curriculum", MAA Mathfest, July 2017.
- "Future Directions for the MCR Method for Parameter Estimation in Continuous-Time Markov Chain Models", ETSU Math Club, April 2017.
- "Where can I work with a math degree?", ETSU Math Club, March 2017.
- "Where could you ever use mathematics?", Feb. 2017 (Science Hill High School) and March 2017 (Ashley Academy).
- "Modeling the Effect of Body Mass Index on Blood Concentration Levels for the Antibiotic Ertapenem", Society of Mathematical Biology, June, 2015.
- **"**A Stochastic Simulation Model for *Anelosimus studiosus* during Prey Capture," Joint Mathematics Meeting 2014, January 2014.
- "Mathematical Modeling of the Spread of Antibiotic Resistant Bacteria in a Hospital", SIAM Annual Meeting 2013, July, 2013.

- “Things We Found While CRAWLing”, Joint ETSU Department of Mathematics & Statistics Colloquium and Institute of Quantitative Biology Seminar, February 22, 2013.
- “Modeling the Effects of a New Class vs. Next Generation Antibiotic on the Spread of Antimicrobial Resistance in a Hospital Setting”, Southeast Atlantic Section Meeting of SIAM, March 24-25, 2012.
- “Exploring the Potential Benefits of Using Mathematical Modeling in Medicine and Biology”, Institute for Quantitative Biology Seminar, February 24, 2012.
- “Optimization Strategy for Single and Dual Resistance of Antibiotics in Hospitals”, Joint Mathematics Meetings, New Orleans, LA, January 6-9, 2011.
- “Supplemental Instruction for Mathematics Courses at Kennesaw State University” (Poster Presentation), Regional STEM Institute, Engaging the STEM Student In and Out of the Classroom, University of West Georgia, Carrollton, GA, February 19-20, 2010.
- “Implementing a Reduced Order POD Methodology with Electromagnetic NDE Techniques”, Joint Mathematics Meeting, Jan. 5-8, 2005.
- "Real time computational algorithms for electromagnetic interrogation of structure ", 2003 SIAM Conference on Computational Science and Engineering, Feb. 10-13, 2003.
- "Jammer multiplexing issues", 2002 Air Force Vehicle Survivability Workshop, MIT Lincoln Laboratory, Lexington, MA, May 17, 2002.
- "Jammer multiplexing issues", MIT Lincoln Laboratory, Lexington, MA, March 22, 2002.
- "Reduced order modeling of eddy current based nondestructive evaluation techniques", SIAM Annual Meeting, San Diego, CA, July 13, 2001.
- "Developing and testing of a reduced order methodology for eddy current based nondestructive evaluation techniques", Laboratoire d'Analyse Numerique, Universite Pierre et Marie Curie, Paris, France, April 5, 2001.
- "A reduced order computational methodology for damage detection in structures" SPIE Smart Materials/Nondestructive Evaluation Conference, Newport Beach, CA, March 4-7, 2000.
- "Evaluating material integrity using reduced-order computational modeling" 3rd SIAM - Southeastern Atlantic Section Student Conference, Atlanta, GA, March 24-25, 2000.
- "Application of a reduced order computational methodology with nondestructive evaluation techniques" Invited poster presentation: Conference on Future Direction in Distributed Parameter Systems, Raleigh, NC, October 5-7, 2000.

Presentations –non-speaker/co-author

- “Modeling Ertapenem: The Impact of Body Mass Index on Distribution of the Antibiotic in the Body”, SIAM Annual Meeting, July 2017.
- “Usando Matemática y Estadística para Estudiar el Comportamiento de Arañas, Abejas y Moscas”, XII-Sembiomat – Lima – Agosto 2-5, 2016.
- “Parameter Estimation Techniques Applied to Stochastic Models”, Thomas Robacker, Michele Joyner, SIAM SEAS, March, 2015.
- “An Aggregate Stochastic Model Incorporating Individual Dynamics for Predation Movements of *Anelosimus Studiosus*”, Alex J. Quijano, Michele L. Joyner, Edith Seier, Nathaniel Hancock, Michael Largent, and Thomas C. Jones, NIMBioS, November 2015, JMM January 2015.
- “Tools for the analysis of the spatial distribution of spiders in a web- *the case of the Anelosimus studiosus”* (Poster Presentation), Edith Seier, Chelsea Ross, Colton Watts, Michele Joyner and Thomas Jones; Spatial Statistics, Columbus, OH, June 4-6, 2013.

- "Comparing location and clustering patterns of persistent and reticent forager at the dance floor in honey bee, *Apis mellifera*" (Poster Presentation), Ashley E. Wagner *,* Byron N. Van Nest , Adam White , Ross Yost , Chelsea Corrigan , Edith Seier , Michele L. Joyner , Darrell Moore, Entomological Society of America 2012 Annual Meeting, Knoxville, TN, November 11-14, 2012.
- "Where is the dance floor? Temporal variation in waggle dance location in the honey bee, *Apis mellifera*", Chelsea Corrigan, Ross Yost, Adam White, Ashley E. Wagner*,* Michele L. Joyner, Edith Seier, Darrell Moore, Entomological Society of America 2012 Annual Meeting, Knoxville, TN, November 11-14, 2012.
- "Mathematical modeling of dance floor location in the honey bee, *Apis mellifera*", Adam White, Ross Yost, Chelsea Corrigan, Ashley E. Wagner*,* Michele L. Joyner, Edith Seier, Darrell Moore, Entomological Society of America 2012 Annual Meeting, Knoxville, TN, November 11-14, 2012.
- "Temporal and spatial positioning for foraging optimization in the subsocial spider *Anelosimus studiosus* (Araneae: Theridiidae)", Chelsea Ross, J. Colton Watts, Thomas C. Jones, Michele L. Joyner, Edith Seier, Entomological Society of America 2012 Annual Meeting, Knoxville, TN, November 11-14, 2012.
- "Diel rhythms in locomotor activity and antipredator behavior in the subsocial spider *Anelosimus studiosus* (Araneae: Theridiidae)", Chelsea Ross, J. Colton Watts, Thomas C. Jones, Michele L. Joyner, Edith Seier, Entomological Society of America 2012 Annual Meeting, Knoxville, TN, November 11-14, 2012.
- "Forensics is Generating Enthusiasm for Math and Science" (Poster Presentation), Victoria J. Geisler, Julie K. Bartley, Sharmistha Basu-Dutt, Javier E. Hasbun, Michele Joyner, G. Richard Larkin, Deborah Lea-Fox, Dusty Otwell, Muhammad Rahman, Karen H. Smith, and S. Swamy-Mruthinti; National Meeting of the American Chemical Society, Atlanta, GA, March 2006
- "Generating Enthusiasm for Math and Science at University of West Georgia" (Poster Presentation), Julie K. Bartley, Sharmistha Basu-Dutt*, Rebecca Dodge, Victoria J. Geisler*, Javier E. Hasbun, Michele Joyner, G. Richard Larkin, Deborah Lea-Fox, Dusty Otwell, Muhammad Rahman, Karen H. Smith, John H. Storer, and S. Swamy-Mruthinti; Gordon Research Conference: Chemistry Education Research & Practice, New London, CT, June 2005.

Grants Awarded

- NSF-UBM Grant: "Collaborative Research on the Arthropod Way of Life (CRAWL): Interdisciplinary Training in Mathematical Biology", co-PI, $229,000, August, 2011.
- Generating Enthusiasm for Math and Science at the State University of West Georgia (GEMS) – NSF Science, Technology, Engineering and Mathematics Talent Expansion Program, co-PI, $877,093, 2003.
- Travel Grant Award from Association for Women in Mathematics ($717), 2002.

Student Mentorship

- PIC Math Undergraduate Research: Risk Stratification Project with Mountain States Health Alliance, Fall 2017. (9 students)
- Lindsey Wright – Honor's Thesis – Predictive Modeling of User Ratings for Yelp Text Reviews, expected May 2018.
- Jennifer Kiser – Master's Thesis – Tendering Optimization, expected May 2018.
- Lohuwu Mamuda – Master's Thesis – Modeling Student Enrollment at East Tennessee State University using a Discrete-Time Markov Chain Model, Summer 2017
- PIC Math Undergraduate Research: Text Mining Project with Chick-fil-a Corporation, Spring 2017. (6 students)

- PIC Math Undergraduate Research: Operations Research Simulation Project with Eastman Chemical, Spring 2017. (4 students)
- PIC Math Undergraduate Research: Operations Research Optimization Project with Eastman Chemical, Spring 2017. (3 students)
- PIC Math Undergraduate Research: Superforecasting Project with MIT Lincoln Labs, Spring 2016. (9 students)
- PIC Math Undergraduate Research: Operations Research Optimization Project with Eastman Chemical, Spring 2016. (9 students)
- Oyero Oyebola - Master's Thesis – Comparison of two Hierarchical Methods for Creating an Aggregate Model, Summer 2016.
- Paezha McCartt – Honor's Thesis – Thesis Topic: The Effect of BMI on Levofloxacin, spring 2015 – fall 2015
- Rebekah White – Honor's Thesis – Thesis Topic: The Effect of BMI on Vancomycin, spring 2015 – fall 2015
- NSF REU Project: Using Extended Kalman Filtering for Parameter Estimation in CTMC Models, Summer 2015 (3 students)
- Zach Helbert – Honor's Enhanced Research Project: Parameter Estimation for Stochastic Differential Equations, spring 2015
- Alex Quijano – Undergraduate Research Project: Applying Stochastic Modeling techniques to determine optimal spider distribution, spring 2015
- Thomas Robacker – Master's Thesis – Parameter Estimation in Stochastic Models, graduated summer 2015.
- Zach Helbert – Undergraduate Honor's Thesis: Modeling Enrollment at ETSU, spring 2014 – fall 2014.
- Whitney Forbes, Master's Thesis – Thesis Topic: Analyzing the Effects of Illness and BMI on the Absorption of Antibiotics using a Physiologically-Based Pharmacokinetic Model, graduated spring 2014.
- Ruhang Pei, Master's Thesis – Thesis Topic: Mathematical Modeling of the Spread of Plant Disease in the Gray's Lily, Roan Mountain, graduated fall 2014.
- Alex Quijano, Nathaniel Hancock, Michael Largent, David Elliott, Dylan Shropshire, Alyssa Williams, Chelsea Corrigan, Galen Reyes: CRAWL (grant) students year 2, 2013-2014.
- Ed Snyder, Master's Thesis – Thesis: A Mathematical Model for Antibiotic Resistance in a Hospital Setting with a Varying Population, graduated spring 2013.
- Adam White, Undergraduate Research Project, Topic: A Mathematical Model of the Spread of Antibiotic Resistance in Nosocomial Infections, Spring 2013.
- Chelsea Ross, Research Project, Topic: Stochastic Model of Spider Movement during Prey Capture, 2012-current.
- Jasmine Sutton, Undergraduate Research Project, Topic: Modelling Netflix Customer Flow, fall, 2012.
- Chelsea Ross, Colton Watts, Adam White, Ross Yost, Chelsea Corrigan, Elijah Laws, Anthony Lundy: CRAWL (grant) students year 1, 2012-2013.
- Laura Buchanan, Research Project, Topic: Mathematical Modeling of the Spread of Plant Disease in the Gray's Lily, Roan Mountain. Interdisciplinary project with Frosty Levy, Jamey Donaldson, and Russell Ingram (Biology), spring 2012.

- Brandi Canter, Honors Thesis –Thesis Topic: Deterministic and Stochastic Mathematical Models for the Introduction of a New Antibiotic in a Hospital Setting, graduated spring 2012.
- Ruhang Pei, Undergraduate Research Project, Topic: Analyzing Developmental Respiration Patterns in Flesh Fly Pupae, fall, 2011. Interdisciplinary project with Karl Joplin (Biology)
- Anna Broido, Brandi Canter, Kaitlyn Gayvert, Kathryn Link, REU co-mentor (with H.T. Banks and Shuhua Hu) for North Carolina State University REU program; Project: Stochastic vs. Deterministic Modeling in HIV/FIV Infections, Summer 2011
- Brandi Canter, Undergraduate Research Project, Topic: Deterministic Models for Introducing a New Antibiotic in a Hospital Setting, spring, 2011.

Awards

- Department of Mathematics & Statistics Outstanding Faculty Member in Teaching Award, East Tennessee State University, 2015.
- College of Arts and Sciences New Faculty Award, East Tennessee State University, 2012.
- Department of Mathematics & Statistics Outstanding Faculty Member in Research Award, East Tennessee State University, 2012.
- Distinguished Service Award, University of West Georgia, 2003.
- Dell Laptop PC Giveaway Award: awarded a Dell Inspiron laptop computer for a proposal developing an online course, University of West Georgia, 2003.
- NASA Graduate Student Researchers Program Fellow, North Carolina State University, 1998 - 2001.
- Outstanding Graduate Teaching Assistant, North Carolina State University, 1997.
- Graduated with Highest Honors, Georgia Institute of Technology, 1995.
- Senior Mathematics Prize, Georgia Institute of Technology, 1995.

Service

College Committees and Service

- Board of Directors, CaRDS Institute, Summer 2015 – current.
- Member College Non-instructional Assignment Committee, Fall 2017 – current.
- Member College Awards Committee, 2014-2016.
- Member Internal Review Committee for Biological Sciences, March 2015.
- Member College Faculty Council, fall 2012 – spring 2014.
- Advisory Board Member IQB, Institute for Quantitative Biology, spring 2011 – spring 2015.
- ETSU Student-Faculty Collaborative Grant reviewer, fall, 2011 and fall, 2012.

Departmental Committees

- Chair Faculty Search Committee, Fall 2017-Spring 2018.
- Display/Banner Committee, Fall 2017 – Spring 2018.
- Faculty Search Committee, Fall 2015 – Spring 2016.
- Member Faculty Evaluation Committee, Spring 2010- Spring 2013.
- GEMS Executive Committee, University of West Georgia, 2003 – 2005.
- WAC Executive Committee, University of West Georgia, 2004 - 2005.

- Professional Education Faculty, University of West Georgia, 2002 – 2005.
- Department of Mathematics Search Committee, University of West Georgia, 2004-2005.
- Department of Mathematics Recruitment and Public Relations Committee, University of West Georgia, 2004-2005.
- Department of Mathematics Student / Faculty Activities Committee, University of West Georgia, 2004-2005.
- Department of Mathematics Faculty Evaluation and Teaching Load Policies Committee, University of West Georgia, 2002 - 2005.
- Department of Mathematics Scholarship Committee, University of West Georgia, 2003 - 2005.
- Department of Mathematics Graduate Committee, University of West Georgia, 2002 - 2004.

Other Departmental Services

- Computational Applied Mathematics student advisor, Fall 2014 – current.
- Math and Stats Club Faculty Advisor, Fall 2010 – current.
- Recruitment presentation, Daniel Boone High School, October, 2017.
- Honors Banquet Recognition Presentation, Spring 2016, Spring 2017.
- Comprehensive Exam Grader when requested.
- Member Master's thesis committees when requested.
- PIE reports for Numerical Analysis (MATH 4257) and Numerical Linear Algebra (MATH 4267).
- Developed unofficial departmental brochure.
- Mathematics & Statistics Department Representative, Fall Open House 2010.
- Supplemental Instruction Assistant Coordinator, Kennesaw State University, 2009-2010.
- Organizer Peer-Led Problem Sessions for Precalculus and Calculus I funded through GEMS grant, University of West Georgia, 2004 - 2005.
- Advisor and Administer of Math Placement Test for Freshman, Summer Orientation 2003.
- Department of Mathematics Liaison to Honors College, University of West Georgia, 2002 - 2003.

Workshop and Minisymposium Organization

- Co-Organizer (with Dr. Richard Ignace, Physics, ETSU) for Workshop: Education, Research, and Economic Impact: Making the Future Brighter for Northeast Tennessee, March 20, 2013. http://faculty.etsu.edu/ignace/impact.html
- Organizer minisymposium at the SIAM Southeast Atlantic Section Conference on Mathematical Modeling in Biomedicine, March, 2012.
- Co-organizer (with Ana-Maria Croicu, Mathematics, Kennesaw State University) AMS-SIAM Special Session on Control and Inverse Problems for Partial Differential Equations, Joint Mathematics Meetings, January 6-9, 2011, New Orleans
- Co-organizer (with Julie K. Raye, Mathematics, Virginia Commonwealth University) minisymposium on Modeling and Computational Approaches in Electromagnetic Applications, SIAM Conference on Computational Science and Engineering, February, 2003.

Service to Discipline

- Associate Editor, SIAM Undergraduate Research Online (SIURO), Jan. 2016 – current.
- Hands-on Experience with Mathematical Modeling, Ashley Academy Math Club, March 30, 2017.
- Presentation for Ashley Academy Math Club: Where Could You Ever Use Mathematics?", March 16, 2017.
- Presentation for Science Hill Class: "Where Could Anyone Ever Use Mathematics?", February 22, 2017.
- Referee for Involve, Advances in Applied Mathematics and Mechanics, Summer 2017.
- Member of Panel: Professional Development Evening -- Careers: Looking Backward, 2013 SIAM Annual Meeting, July, 2013.
- Graduate student mentor for the Association of Women in Mathematics Workshop at the SIAM Annual Meeting, July, 2012.
- Referee for Involve, a Journal of Mathematics, Summer 2012.
- Member of Career Panelist at NIMBioS' 2011 Undergraduate Research Conference at the Interface of Mathematics and Biology, October 21-22, 2011.

Professional Development

- PIC Math Workshop of Data Analytics, Bringham Young University, Provo, UT, May 29-June 2, 2017.
- Careers and Opportunities in Industry for Mathematical Scientists, IMA, Minneapolis, Minnesota, April 20-22, 2015.
- NiMBioS Lumphoid Cells in Acute Inflammation Workshop, NiMBioS, Knoxville, TN, January 15-16, 2015.
- Tutorial Workshop on Parameter Estimation for Biological Models, North Carolina State University, August 2014.
- Parameter Estimation for Dynamic Biological Models Tutorial, NIMBioS, May 2014.
- Research Grant Development Course, ETSU, Johnson City, TN, 2011-2012.
- NiMBioS Tutorial: Stochastic Modeling in Biology, NiMBioS, Knoxville, TN, March 16-18, 2011.
- Workshop on Future Directions in Applied Mathematics, CRSC, NCSU, Raleigh, NC, March 10-11, 2011.
- NiMBioS Solid Tumor Modeling Workshop, NiMBioS, Knoxville, TN, January 19-21, 2011.
- SAMSI Opening Workshop for Program on Complex Networks, SAMSI, Raleigh, NC, August 29-Sept. 3, 2011.
- MAA Prep Workshop, Mathematical Modeling in Population Biology and Epidemiology, Texas Tech University, Summer 2010.
- Best Practices in Supervising Undergraduate Research, Kennesaw State University, Fall 2009
- Writing Across the Curriculum Retreat, State University of West Georgia, Spring 2003.
- Infrared Technology and Applications Short Course, Georgia Institute of Technology, March 26 - 29, 2002.
- Radar Systems Course, MIT Lincoln Laboratory, September 2001 - May 2002.
- New Teaching Assistant Training Workshop, Mathematics Department, North Carolina State University, August 14-20, 1996.

Professional Societies

Society for Industrial and Applied Mathematics
Association for Women in Mathematics
Mathematical Association of America