

## SCIENTIFIC RESEARCH, EDUCATION AND TRAINING GRANTS

### GRANTS AWARDED (George Mason University, 2007 - Present):

Awarded over **14 Million** Dollars in External Funding (2007 – Current) as a PI or Co-PI.

1. Supporting, Mentoring and Retaining New STEM Secondary Educators Through Major Transitions from Recruitment to Highly Effective Teacher, NSF Noyce, \$1,190,474 Million, Co-PI (2021 – 2025)
2. Earle C. Williams Presidential Medal for Faculty Excellence in Social Impact, \$10,000 (2021)
3. Advancing Computer Science Education, VA Department of Education, \$375,000, PI (2020–23).
4. USA TEAMS: Teacher Engagement, Advocacy, Mentorship and Sustainability, Organization of American States, ITEN SEED Grant, \$10,000, PI (2020 – 21)
5. MOST: Mason Outreach for STEM Teachers, Battelle Corporation, \$25,000, PI (2020-21).
6. Collaborative Research (RAPID): Modeling, Analysis and Control of COVID-19 Spread in an Aircraft Cabin using Physics Informed Deep Learning, \$59,999, PI (2020-21).
7. Collaborative Research: Advancing Equity and Strengthening Teaching with Elementary Mathematical Modeling: EQ-STEMM, National Science Foundation, \$698,030, Co-PI (2020 – 2023).
8. MOST: Mason Outreach in STEM for Teachers, Battelle Corporation, \$10,000, PI (2020-21).
9. FOCUS Academy for High School Students, Battelle Corporation, \$15,000, PI (2020-21).
10. NRT-HDR: Transdisciplinary Graduate Training Program in Data-Driven Adaptive Systems of Brain-Body Interactions, NSF, \$2,999,183 (2019 – 2023).
11. Collaborative Research: RoL: FELS: Workshop - Rules of Life in the Context of Future Mathematical Sciences, National Science Foundation, \$80, 201 (2018 – 2019).
12. Investigating Mathematical Modeling, Experiential Learning and Research through Professional Development and an Integrated Online Network for Elementary Teachers, National Science Foundation, \$48,933 (2018 – 2019).
13. FOCUS Academy: Females of Color Underrepresented in STEM, Business Women’s Giving Circle, \$20,000 (2018 – 2019).
14. Multidisciplinary Problem Solving in STEAM, Global Discovery Grants, Mason Global Education Office, \$18,000 (2018 – 2019).
15. Program SPARK STEM: Optimizing STEM Learning through Mathematical and Scientific Modeling through Project-based Learning (PBL), State Council for Higher Education in Virginia, \$126,000 (2017 - 2018).
16. Program TRANSITIONS: Transforming Mathematics Instruction Through Mathematical Modeling, Algebraic Thinking and Proportional Reasoning: Teaching and Assessing Virginia’s 2009 Grades 5-9 Mathematics SOL, Virginia Department of Education, \$712,212, PI (2015-2017)
17. The RADSS program (Rural and Diverse Student Scholars), National Science Foundation, S-STEM Grant, \$600,000, Co-PI (2016 – 2020).
18. Use of Technology to Manage Stimulus Cues and Reduce Drug Relapse: A STEAM-H initiative, Provost Multidisciplinary Research Award, GMU \$50, 000, Co-PI (2015 – 2016)
19. Project PROGRESS: Promoting Renewable energy research On the Grid to create Responsible and Engaged STEM workforce in Solar Sustainability across the Commonwealth, Dominion Foundation, \$40, 000, PI (2015 – 2016)
20. SIAM Mid-Atlantic Student Conference Grant, Computational Mathematics Program, National Science Foundation, \$17, 000. PI (2015- 2016).
21. Project FOCUS: Females of Color Underrepresented in STEM, Business Women's Giving Circle Fund, \$20, 000, PI (2015-2016).
22. Project DICE: Design Thinking, Innovation, Creativity and Entrepreneurship, Office of Student Scholarship, Creative Activities, and Research (OSCAR), \$12, 000, PI (2015-2016)

23. Engaging incoming STEM majors through preparatory camps to improve freshmen academic performance and retention in STEM, 4-VA Consortium Grant, \$19, 700. PI (2014 – 2015).
24. Investigating phage ecology: an interdisciplinary summer research experience for undergraduate and Governor’s School high school students, 4-VA Consortium Grant, \$18, 950. PI (2014 – 2015).
25. Calculus and 3D-Printing, 4-VA Consortium Grant, \$20, 000. Co-PI (2014- 2015)
26. Program IMMERSION: Integrating Mathematical Modeling, Experiential learning and Research through a Sustainable Infrastructure and an Online Network for teachers in the elementary grades, National Science Foundation, \$1.4Million. PI (2014 - 2019).
27. "EXTREEMS-QED: Undergraduate Research in Computational and Data-Enabled Mathematics", National Science Foundation, \$421, 885, Co-PI (2014 - 2018).
28. “Developing Rational Numbers and Proportional Reasoning through math models and performance based assessments: Teaching and Assessing Virginia's 2009 6-8 Mathematics Standards of Learning”, a Math Science Partnership (MSP), Virginia Department of Education (VDOE), \$220,515. PI (2014-2015).
29. “Fluency and number sense through math models and performance based assessments: Teaching and Assessing Virginia's 2009 3-5 Mathematics Standards of Learning”, a Math Science Partnership (MSP), Virginia Department of Education (VDOE), \$208,935. PI (2014-2015).
30. “Developing Rational Numbers and Proportional Reasoning through math models and performance based assessments: Teaching and Assessing Virginia's 2009 6-8 Mathematics Standards of Learning”, a Math Science Partnership (MSP) for Grades 6-8, Virginia Department of Education (VDOE), \$246,696. PI (2013-2014).
31. “Building Number and Number Sense through math models and performance based assessments: Teaching and Assessing Virginia's 2009 K-2 Math Standards of Learning”, a Math Science Partnership (MSP) for Grades K-2, VDOE, \$246,696. PI (2013-2014).
32. "Computational Mathematics, Modeling and Analysis of Biological, Bio-inspired and Engineering Systems", NSF and USAID Partnership for Enhanced Engagement in Research (PEER) with Nelson Mandela African Institution of Science and Technology, \$60, 000, PI (2013 - 2014).
33. “Expeditions in Science Technology Engineering and Arts through Mathematics (ESTEAM)”, a State Council for Higher Education in Virginia, \$179,945, Co-PI (2013-2014).
34. "Advancing the Mentorship of Academic-Year Governor's School (AYGS) Student Research Across VA: Teacher Professional Development for the 19 VA AYGS at Front Royal", 4-VA Collaborative Grant, \$28, 600, PI 2013 - 2014.
35. "STEM Boot Camp: Improving access by engaging incoming STEM majors", 4-VA Collaborative Grant, \$23, 800, PI 2013 - 2014.
36. “REU: Research, Education and Training in Computational Mathematics and Nonlinear Dynamics of Biological, Bio-inspired and Engineering Systems”, NSF, \$333,809. PI (2011-2013)
37. “Sonia Kovalevsky Day”, a Math outreach day for girls in mathematics for grades 7-12, Association of Women in Mathematics, \$1795 Co-PI (2011) and \$1950 Co-PI (2012).
38. "Math Modeling in Elementary School", a Math Science Partnership (MSP) for Grades K-2, Virginia Department of Education (VDOE), \$215,997. PI (2012-2013).
39. "Math Modeling in Middle School", a Math Science Partnership (MSP) for Grades 6-8, Virginia Department of Education (VDOE), \$222,040. PI (2012-2013).
40. “Virginia STEM Collaborative Nurturing Network to Enhance Content-focused Teaching (VA STEM CoCONNECT)”, a MSP for Grades 9-12, VDOE, \$57,013. PI (2012-2013).
41. “Expeditions in Science Technology Engineering Education through Mathematics (ESTEEM)”, a MSP for Grades 9-12, Virginia Department of Education, \$175,000. PI (2011-2012).
42. “Center for Outreach in Mathematics Professional Learning and Educational Technology (COMPLETE)”, a Mathematics Science Partnership Continuation for Grades K-3, Virginia Department of Education, \$175,731. PI (2011-2012).

43. “Center for Outreach in Mathematics Professional Learning and Educational Technology (COMPLETE)”, a Mathematics Science Partnership Continuation for Grades 7-8, Virginia Department of Education, \$188,541. PI (2011-2012).
44. “Center for Excellence in Mathematics Professional Learning and Coaching in Northern Virginia for Grades K-3”, Mathematics Science Partnership, VDOE, \$349,787. PI (2010-2011)
45. “Center for Excellence in Mathematics Professional Learning and Coaching in Northern Virginia for Grades 7-8”, Mathematics Science Partnership, VDOE, \$350,181. PI (2010-2011)
46. “Mentoring Approaches to Sustainable Outreach Networks, Improving Mathematical Practices in Algebraic Connections and Technology in Mathematics (MASON IMPACT)”, State Council of Higher Education for Virginia, \$177,923. Co-PI (2010 – 2011)
47. “REU: Multidisciplinary REU in Computational Mathematics and Nonlinear Dynamics of Biological, Bio-inspired and Engineering Systems”, National Science Foundation (REU) and Department of Defense (ASSURE), \$180,000. PI (2009-2011)
48. “A Fluid-Structure Interaction Method for Patient-Specific Cardiovascular Modeling”, A collaborative project with Carnegie Mellon University, NIH, \$135,000. PI (2009-2011)
49. “Mathematical and computational modeling of fluid-structure-control interactions with multidisciplinary applications in science and engineering”, Division of Mathematical Sciences, National Science Foundation, \$108, 152. PI (2008 – 2010)
50. “Improving Mathematical Practices in Algebraic Connections and Technology in Mathematics (IMPACT)”, State Council of Higher Education for Virginia, \$168, 044. Co-PI (2009 – 2010)
51. “Algebraic Connections and Technology in Middle Grades Mathematics (ACT – Now)”, State Council of Higher Education for Virginia, \$73, 000. Co-PI (2008 – 2009).

**GRANTS AWARDED (Texas Tech University, 2000 - 2007):**

Awarded approximately **one Million** Dollars in Internal and External Funding during my tenure at Texas Tech University (2000 – 2007) years as a PI or Co-PI.

1. “Mathematical and Computational Modeling of Fluid-structure-control interactions with multidisciplinary applications in science and engineering”, PI, Computational Mathematics, Division of Mathematical Sciences, National Science Foundation, \$200, 464 (2006 - 2009).
2. “South Plains Mathematics Scholars”, Co-PI, Division of Undergraduate Education, S-STEM: Scholarships in STEM, NSF, \$571, 580 (2008 – 2010)
3. “Multidisciplinary Research Program in Computation and Control of Biological Systems”, Texas Higher Education Coordinating Board, Advanced Research Program, \$79, 000 (2006 - 2008)
4. “REU: Multidisciplinary Summer Undergraduate Research Program in Computation and Control of Biological and Biologically Inspired Systems”, PI, Department of Defense (ASSURE) and National Science Foundation (REU), \$170, 707 (2006 - 2007).
5. “AMS Epsilon Grant”, PI, Texas Tech Summer Mathematics Academy, AMS, \$2,500 (2006).
6. “Non-conforming hp finite element methods for computational modeling of problems in science and engineering”, PI, NSF, Computational Mathematics, DMS, \$90,000 (Aug 2002 - July 2005).
7. “Mini-symposium on Mathematical and Computational Modeling of Biological Systems”, PI, Division of Mathematical Sciences, National Science Foundation, \$20,000 (Sept 2003 - Aug 2004).
8. “Mini-symposium on Mathematical and Computational Modeling of Biological Systems”, PI, Whitaker Foundation, \$5,000 (Sept 2003 - Aug 2004).
9. “Mini-symposium on Mathematical and Computational Modeling of Biological Systems”, PI, Texas Tech University, \$2,750 (Sept 2003 - Aug 2004).
10. “Application of non-conforming hp finite element methods to problems in engineering mechanics”, PI, Texas Tech University Research Enhancement Grant, \$3,650 (Sept 2002 - Aug 2003).
11. “On the role of contact constraints of intracranial saccular aneurysms”, PI, Texas Tech University Research Enhancement Grant, \$3,750 (Sept 2001 - Aug 2002).