John A. Gemmer

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Winston-Salem, NC 27109

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Education

Ph.D. Applied Mathematics, University of Arizona — May 2012
Dissertation: Shape Selection in the Non-Euclidean Model of Elasticity
Advisor: Shankar Venkataramani

M.S. Applied Mathematics, University of Arizona — December 2008

B.S. Mathematics and Physics, Millersville University of Pennsylvania — May 2006
Magna cum laude, honors in mathematics and physics

Academic Appointments

Associate Professor, Wake Forest University — July 2023-Present
Department of Mathematics

Assistant Professor, Wake Forest University — July 2016–July 2023
Department of Mathematics and Statistics

Consultant, American Institute of Mathematics — June 2023-Aug. 2023

Visiting Assistant Professor, University of Chicago — Jan. 2020–Mar. 2020
Committee on Computational and Applied Mathematics

Long Term Visitor, University of North Carolina — Aug. 2019–Dec. 2019
Department of Mathematics

Consultant, American Institute of Mathematics — Aug. 2019–Dec. 2019,

Long Term Visitor, Kavli Institute for Theoretical Physics — Jan. 2016

NSF-RTG Postdoctoral Fellow, Brown University — July 2013–June 2016
Division of Applied Mathematics
Postdoctoral Mentors: Govind Menon and Bjorn Sandstede

Postdoctoral Research Associate, University of Arizona — July 2012–June 2013
Arizona Center for Mathematical Sciences
Postdoctoral Mentors: Jerome Maloney and Shankar Venkataramani

Funding, Awards, Fellowships and Honors

1. Wake Forest Inaugural Disability Champion Award	May 2023
2. The Kulynych Family Omicron Delta Kappa Award	May 2021
3. Center for Undergraduate Research in Mathematics (CURM) minigrant	Aug. 2021–May 2022
4. Archie Fund for the Arts and Humanities	Jan. 2020–March 2020
5. Sterge Faculty Fellowship	July 2019–July 2022
6. CRADLE VI Fellow	Sep. 2017–Sep. 2019
7. NSF-RTG Postdoctoral Fellowship	July 2013–June 2016
8. University of Arizona, Al Scott Memorial Lecture	April 27, 2012
9. University of Arizona, VIGRE Fellowship	May 2010–Dec. 2010
10. University of Arizona, Galileo Scholar Award	May 2010
11. University of Arizona, Graduate College Fellowship	Jan. 2007–May 2007
12. Millersville University, SSM Award for Outstanding Poster	May 2006
13. Millersville University, Class of 1866 Award	May 2006
14. Millersville University, Edna H. Myers Scholarship	Aug. 2005
15. SIAM Student Research Award	Aug. 2005

Publications

1. Slyman, K., Simper, M., Gemmer, J. A., Sandstede, B. (2024). Most probable escape paths in perturbed gradient systems (submitted).
2. Laniado, D. L., Marom, Y., Gemmer J. A., Sabbah, S. (2024). Spherical Code of Retinal Orientation-Selectivity Enables Decoding in Ensemble and Retinotopic Operation. (submitted).
3. Slyman, K., Gemmer, J. A., Corak, N. K., Kiers, C., & Jones, C. K. (2024). Tipping in a low-dimensional model of a tropical cyclone. *Physica D: Nonlinear Phenomena*, *457*, 133969.
4. Hill, K., Zanetell, J., & Gemmer, J. A. (2022). Most probable transition paths in piecewise-smooth stochastic differential equations. *Physica D: Nonlinear Phenomena*, 133424.
5. Scanlon, H., & Gemmer, J. (2021). Epidemic conditions with temporary link deactivation on a network SIR disease model. *Spora: A Journal of Biomathematics*, *7*(1), 72-85.
6. Yamamoto, K. K., Shearman, T. L., Struckmeyer, E. J., Gemmer, J. A., & Venkataramani, S. C. (2021). Nature's forms are frilly, flexible, and functional. *European Physics Journal E.*, 44 (7) 95.
7. Gemmer, J. A., Moon, G., & Raynor, S. G. (2020). Solutions to a two-dimensional, Neumann free boundary problem. *Applicable Analysis*, *99*(2), 214-231.
8. Chen, Y., Gemmer, J. A., Silber, M., & Volkening, A. (2019). Noise-induced tipping under periodic forcing: Preferred tipping phase in a non-adiabatic forcing regime. *Chaos: An Interdisciplinary Journal of Nonlinear Science*, *29*(4), 043119.
9. Sabbah, S., Gemmer, J. A., Berson, D., et. al. (2017). A retinal code for motion along the gravitational and body axes. *Nature.* 546(7659), 492-497.
10. Grimm, C., & Gemmer, J. A. (2017). Weak and strong solutions to the inverse-square brachistochrone problem on circular and annular domains. *Involve, a Journal of Mathematics*, 10(5), 833-856.
11. Gemmer, J., Sharon, E., Shearman, T., & Venkataramani, S. C. (2016). Isometric immersions, energy minimization and self-similar buckling in non-Euclidean elastic sheets. *EPL (Europhysics Letters)*, 114(2), 24003.
12. Gemmer, J. A., Venkataramani, S. C., Durfee, C. G., & Moloney, J. V. (2014). Optical beam shaping and diffraction free waves: a variational approach. *Physica D. Nonlinear Phenomena,* 283(15), 15-28.
13. Gemmer, J. A., & Venkataramani, S. C. (2013). Shape transitions in hyperbolic non-Euclidean plates. *Soft Matter*, 9(34), 8151-8161.

14. Durfee, C. G., Gemmer, J., & Moloney, J. V. (2013). Phase-only shaping algorithm for Gaussian-apodized Bessel beams. *Optics express*, 21(13), 15777-15786.
15. Gemmer, J. A., & Venkataramani, S. C. (2012). Defects and boundary layers in non-Euclidean plates. *Nonlinearity*, 25(12), 3553.
16. Gemmer, J. A., & Venkataramani, S. C. (2011). Shape selection in non-Euclidean plates. *Physica D: Nonlinear Phenomena*, 240(19), 1536-1552.
17. Gemmer, J.A., Nolan M., Umble R. (2011), Generalizations of the brachistochrone problem, *Pi Mu Epsilon Journal*, 13(4), 207-218.

Popular Press Coverage

1. Gemmer, J. A., Slyman, K. (2024). An inside look at tipping mechanisms for a tropical cyclone. *SIAM DS Web* (to appear).
2. Estelle Basor (2020). Taking AIM at COVID-19 Dynamics, Data, and the Pandemic. *AIMatters Newsletter, 7-9*. https://aimath.org/wp-content/uploads/newsletter2020.pdf.
3. Jones, Chris, & Kaper, Hans (2020). Virtual summer schools: can we make them work? *SIAM News: News journal of the Society for Industrial and Applied Mathematics*, *53*(8), 5-7.
4. American Physical Society (2019). Mathematics of sea slug movement points to future robots. *ScienceDaily*. www.sciencedaily.com/releases/2019/03/190307161919.htm.
5. Demb, J. B., & Clark, D. A. (2017). Vision: These retinas are made for walkin'. *Nature*, *546*(7659), 476-477.
6. Orenstein, David (2017). Retinal cells 'go with the flow' to assess own motion through space. *ScienceDaily.* www.sciencedaily.com/releases/2017/06/170607133248.htm.

Scientific Activities

Invited conference and workshop talks:

1. Nov. 2023 — 16th Annual Symposium on BEER (Biomathematics and Ecology Education and Research), Virginia Commonwealth University, VT.
2. May 2023 — MCRN Meeting, Portland, OR.
3. May 2023 — SIAM Conference on Applications of Dynamical Systems, Portland, OR.
4. Jan. 2023 — Joint Mathematics Meeting, AMS Special Session on Advances in Nonlinear Boundary Value Problems, Boston, MA.
5. Nov. 2022 — 40th Southeastern-Atlantic Regional Conference on Differential Equations, North Carolina State University, NC.
6. Jul. 2022 — SIAM Conference on Mathematics of Planet Earth. Pittsburgh, PA.
7. May 2019 — SIAM Conference on Applications of Dynamical Systems, Snowbird, UT.
8. Apr. 2019 — 11th IMACS Conference. University of Georgia, Athens, GA.
9. Mar. 2019 — AMS Sectional Meeting. Auburn University, Auburn, AL.
10. Sep. 2018 — SIAM Conference on Mathematics of Planet Earth. Philadelphia, PA.
11. Sep. 2018 — Workshop on Calculus of Variations and Applications. University of Zagreb, Zagreb, Croatia.
12. Jul. 2018 — SIAM conference on Mathematical Aspects of Materials Science. Portland, OR.
13. Mar. 2018 — The 42nd SIAM Southeastern Atlantic Sectional Conference. University of North Carolina. Chapel Hill, NC.
14. Sep. 2017 — The 3rd Annual Meeting of SIAM Central States Section. Colorado State University. Fort Collins, CO.
15. Mar. 2017 — APS March Meeting special session: From isometry to reality, Geometric principles, mechanics, and morphology of thin solid structures. New Orleans, LA.

16. Jun. 2016 — The Fourth Annual Conference for the Exchange of Mathematical Ideas. Embry–Riddle Aeronautical University. Prescott, AZ.
17. Jan. 2016 — The Kavli Institute for Theoretical Physics: Geometry Elasticity, Fluctuations, and Order in 2D Soft Matter. Santa Barbara, CA.
18. Jan. 2016 — Joint Mathematics Meeting, AMS Special Session on Problems in Geometry and Design of Materials, Seattle, WA.
19. Dec. 2015 — SIAM Conference on Partial Differential Equations. Scottsdale, AZ.
20. Aug. 2014 — SIAM Conference on Nonlinear Waves and Coherent Structures, University of Cambridge, UK.
21. Jul. 2014 — Park City Mathematics Research Program, Park City, UT.
22. Sep. 2012 — Lorentz Institute: Modern perspectives on thin sheets: Geometry, Mechanics, and Statistical Physics, Leiden, NL.
23. May 2011 — IMA Hot Topics Workshop, Strain Induced Shape Formation: Analysis, Geometry and Materials Science. Minneapolis, MN.

Invited colloquium talks at other universities:

1. Jun. 2024 — Mathematics Colloquium, Indiana University–Purdue University Indianapolis, IN
2. Oct. 2021 — Mathematics Colloquium, Appalachian State University, NC.
3. Jul. 2021 — Applied Mathematics Colloquium, Florida Atlantic University, FL.
4. Oct. 2020 — Mathematics Colloquium, Ithaca College, NY.
5. Oct. 2020 — Applied Mathematics Colloquium, Cornell University, NY.
6. Mar. 2020 — Mathematics Colloquium, University of Illinois Chicago, IL. (Cancelled due to Covid-19 pandemic).
7. Mar. 2020 — Applied Mathematics Colloquium, Northwestern University, IL.
8. Nov. 2019 — Mathematics Colloquium, United States Navel Academy, MD.
9. Sep. 2018 — Mathematics Colloquium, University of North Carolina A&T, NC.
10. Feb. 2016 — Mathematics Colloquium, Vassar College, NY.
11. Sep. 2013 — Millersville University Physics Colloquium, Millersville University, PA.
12. Mar. 2013 — Millersville University-Franklin Marshall College Joint Mathematics Colloquium, Millersville University, PA.
13. Apr. 2012 — Al Scott Memorial Lecture, University of Arizona, AZ.

Invited seminar talks at other universities:

1. Sep. 2023 — Mathematics and Climate Seminar, University of Minnesota, MN.
2. Feb. 2023 — Applied Mathematics Seminar, UNC Greensboro, NC.
3. Mar. 2022 — Applied Math Student Seminar Series, UNC Chapel Hill, NC.
4. Nov. 2021 — Mathematical Biology Seminar, Duke University, NC
5. Oct. 2019 — Brown Bag Seminar, University of Arizona, AZ.
6. Oct. 2019 — Uncertainty Quantification Seminar, University of Arizona, AZ.
7. Oct. 2019 — Applied Analysis Seminar, University of Arizona, AZ.
8. Oct. 2017 — Applied Mathematics Seminar, UNC Greensboro, NC.
9. May 2017 — Applied Mathematics Seminar, University of Chicago, IL.
10. Oct. 2016 — Applied Mathematics Seminar, UNC Greensboro, NC.
11. Sep. 2015 — Physical Mathematics Seminar, MIT, MA.
12. Apr. 2015 — Dynamical Systems Seminar. Boston University, MA.
13. Nov. 2014 — Applied and Computational Math Seminar, George Mason University, VA.

14. Sep. 2014 — Applied Math Seminar, Colorado State University, CO.
15. Sep. 2014 — Analysis and it Applications Seminar, University of Arizona, AZ.
16. Apr. 2014 — Soft Matter Journal Club, University of Massachusetts Amherst MA.
17. Mar. 2013 — Division of Applied Mathematics LCDS Seminar. Brown University, RI.
18. May 2012 — Joint TU Munich-Augsburg Analysis Seminar, TU Munich, DE.

Contributed talks at conferences:

1. Oct. 2018 — 38th Southeastern-Atlantic Regional Conference on Differential Equations, University of Northern Georgia, GA.
2. Sep. 2018 — 6th Virginia Soft Matter Workshop, Virginia Tech, VT.
3. Oct. 2017 — 37th Southeastern-Atlantic Regional Conference on Differential Equations, Kennesaw State University, GA.
4. Jul. 2017 — SIAM Annual Meeting, Pittsburgh, PA.
5. May 2017 — SIAM Conference on Applications of Dynamical Systems, Snowbird, UT.
6. Nov. 2016 — AMS Sectional Meeting, Rayleigh, NC.
7. May 2016 — SIAM Conference on Mathematical Aspects of Material Science, Philadelphia, PA.
8. Oct. 2015 — SES 2015 Mechanics of Soft Materials, Texas A&M University, TX.
9. Jan. 2012 — Joint Mathematics Meeting, AMS Special Session on Some Nonlinear Partial Differential Equations: Theory and Application, Boston MA.
10. Oct. 2011 — Recent Progress in Wave Processes in Nature, University of Arizona, AZ.
11. Apr. 2011 — Los Arizona Days, University of Arizona, AZ.
12. Mar. 2010 — APS March Meeting, Portland, OR.

Seminar and Colloquium talks at Wake Forest University:

1. Feb. 2021 — Analysis Seminar, Wake Forest University, NC.
2. Nov. 2020 — Computer Science Seminar, Wake Forest University, NC.
3. Feb. 2018 — WFU Physics Colloquium, Wake Forest University, NC.
4. Jan. 2016 — Mathematics Colloquium, Wake Forest University, NC.

Poster presentations and participation in workshops and conferences:

1. May 2022 — Participant: Biology and Medicine through Mathematics (BAMM) Conference, Richmond, VA.
2. Jul. 2015 — Participant: PIRE Workshop: From Grain Boundaries to Stochastic Homogenization, Leipzig, DE.
3. Jun. 2014 — Presented Poster: Retinal Neurobiology and Visual Processing Conference, Saxton River, VT.
4. Oct. 2012 — Participant: 2012 COFIL 4th International Symposium on Filamentation, Tucson, AZ.
5. Sep. 2012 — Participant: 2012 Air Force Office of Scientific Research (AFOSR) Non-Linear Optics Meeting, Albuquerque, NM.
6. Sep. 2012 — Presented Poster: International Conference on Nonlinear Partial Differential Equations, Oxford University UK.
7. Jun. 2012 — Participant: NSF PIRE Summer School: New Frontiers in Mulitplescale Analysis and Computing for Materials: IMA, Minneapolis MN.
8. May 2011 — Presented Poster: IMA Hot Topics Workshop Strain Induced Shape Formation: Analysis, Geometry and Materials Science, IMA, Minneapolis, MN.

9. Apr. 2009 — Participant: Great Circles Workshop on Math Circles, MSRI, Berkeley, CA.

Teaching Experience

Courses taught as primary instructor:

Wake Forest University:

- MTH 225: *Linear Algebra II*, S24.
- MTH 383/683: *A First Course in Stochastic Calculus,* F23.
- MTH 317/617: *Complex Analysis,* F20, F22, F23.
- FYS 100QQ: *Race, Gender, and Identity in the 21st Century Scientific Community,* S23.
- MTH 357/657: *Probability,* S23.
- MTH 381: *Independent Study: Measure, Integration and Real Analysis,* F22.
- MTH 351/651: *Introduction to Mathematical Modeling,* F18, F20, F22.
- MST 750: *Dynamical Systems,* S22.
- MST 205: *Linear Algebra and Differential Equations,* F21, S22.
- MST 383/683: *Introduction to Mathematical Epidemiology,* F21.
- MST 752: *Introduction to Mathematical Biology,* S21.
- MST 306: *Advanced Mathematics for the Physical Sciences,* S19, S21.
- MST 352: *Partial Differential Equations,* S19, S24.
- MST 205/605: *Applied Multivariable Calculus,* F18.
- MST 113: *Multivariable Calculus,* F17, S18.
- MST 711: *Real Analysis,* S18.
- MST 326/626: *Numerical Linear Algebra,* F17.
- MST 383/683: *Applied Dynamical Systems,* S17.
- MST 112: *Calculus with Analytic Geometry II,* S17.
- MST 111: *Calculus with Analytic Geometry I,* F16 (two sections).

Brown University:

- APMA 0360: *Methods of Applied Mathematics II,* S16.
- APMA 0200: *Introduction to Mathematical Modeling,* F15.
- APMA 1360: *Topics in Chaotic Dynamics,* S14, S15.
- APMA 1930M: *Applied Asymptotic Analysis,* F14.
- AMPA 2811Q: *Calculus of Variations,* F13.

University of Arizona:

- Math 124: *Calculus I,* F08.
- Math 120R: *Calculus Preparation,* S08.
- Math 112: *College Algebra,* F07.
- Math 110: *Trigonometry,* F06.

Master students mentored:

1. Steven Liao (Wake Forest University), Summer 2024–Present.
2. Qiyue Zhang (Wake Forest University), Summer 2022–Spring 2024.
3. Grace Hofmann (Wake Forest University), Summer 2022–Winter 2023.
4. John Turnage (Wake Forest University), Summer 2021–Spring 2022.
5. Nicholas Corak (Wake Forest University), Summer 2019–Spring 2020.
6. Maximilian Rezek (Wake Forest University), Summer 2018–Spring 2019.
7. Jessica Zanetell (Wake Forest University), Spring 2017–Spring 2018.

Undergraduate research mentored:

1. Andrew Croft (Wake Forest University), Fall 2024–Present (Independent Research).
2. Riley Justman (Wake Forest University), Fall 2024–Present (Independent Research).
3. Emily Foley (Wake Forest University), Fall 2022–Spring 2024 (Senior Thesis).
4. Shelby Horth (Wake Forest University), Fall 2022–Spring 2024 (Senior Thesis).
5. Zhengdao Liu (Wake Forest University), Fall 2022–Spring 2023 (Senior Thesis).
6. Kelsey Fei (Wake Forest University), Summer 2022–Spring 2023 (Senior Thesis and URECA student, Co-advised with Kaitlin Hill)
7. Malindi Whyte (Wake Forest University), Fall 2021–Spring 2023 (Senior Thesis, CURM).
8. Ashley Peake (Wake Forest University), Spring 2021–Spring 2023 (Independent Research, Senior Thesis).
9. Sarah Ruth Nicholls (Wake Forest University), Fall 2021–Spring 2022 (CURM).
10. Minato Hiraoka (Wake Forest University), Fall 2021–Spring 2022: (Senior Thesis, CURM).
11. Danielle DaSilva (Elon University), Fall 2021–Spring 2022 (CURM, Co-advised with Hwayeon Ryu)
12. Christopher Boyette (Elon University), Fall 2021–Spring 2022 (CURM, Co-advised with Hwayeon Ryu)
13. Hannah Scanlon (Wake Forest University), Summer 2020–Spring 2021 (Senior Thesis).
14. Grace Hofmann (Wake Forest University), Summer 2020–Spring 2021 (Senior Thesis and URECA Student).
15. Elizabeth Dicus (Wake Forest University), Summer 2019–Spring 2020 (Senior Thesis and URECA Student).
16. Yusuf Qaddura (Swarthmore College), Summer 2019 (Summer Research).
17. Kevin Buck (Wake Forest University), Fall 2019–Spring 2020 (Senior Thesis).
18. Addie Harrison (Wake Forest University), Summer 2018–Spring 2020 (Senior Thesis and URECA Student).
19. Hanwen Wang (Wake Forest University), Fall 2018–Spring 2019 (Senior Thesis).
20. Brady Gales (Wake Forest University), Fall 2017–Spring 2019 (Senior Thesis).
21. Elizabeth Wallace (Wake Forest University), Fall 2017–Spring 2018 (Senior Thesis).
22. Ragna Eide (Brown University), Fall 2015–May 2016 (Honors Thesis).
23. Ekaterina Kryuchkova (Brown University), Summer 2015–May 2017 (Honors Thesis).
24. Mackenzie Simper (University of Utah), Summer 2015 (REU Project).
25. Christian Cofoid (Boston College University), Summer 2015 (REU Project).
26. Chris Grimm (Brown University), Fall 2014–May 2016 (Independent Research Project).

High school students mentored:

1. James Harris (Carver High School), Summer 2022 (WFU-Leap Intern).
2. Divij Lankalapalli (Seminole High School), Summer 2020–December 2021.

Ph.D. students co-mentored:

1. Katherine Slyman (University of North Carolina at Chapel Hill) Fall 2019–Spring 2023 (Co-advised with Christopher Jones).
2. Yuxin Chen (Northwestern University) Summer 2015–Spring 2018 (Co-advised with Mary Silber).

Postdoctoral Scholars mentored:

1. Shoreh Gholizadeh Siahmazgi (Wake Forest University) Summer 2024–Present.
2. Kaitlin Hill (Wake Forest University) Fall 2019–July 2022.

Other types of teaching experience:

- Fall 2017–Present — *Applied Mathematics Seminar,* Wake Forest University. Organized a weekly seminar in which professional development was discussed as well research topics in applied mathematics were presented.
- Fall 2011 — *Organizer of The University of Arizona Calculus Workshop*, The University of Arizona. Organized a week long workshop preparing entering students for their calculus courses.
- Spring 2009, 2011, 2012, 2013 — *Graduate mentor for The University of Arizona's Mathematical Modeling course,* The University of Arizona. Projects mentored include modeling virion growth, modeling crowd dynamics through agent based simulations, modeling adaptation in Lotka-Volterra systems, analyzing the stability of inverted pendulums.
- Winter 2009, Summer 2010 — "*Super TA" for applied mathematics qualifying exam*, The University of Arizona. Facilitated weekly study sessions for the Ph.D. qualifying exam in applied mathematics.
- Fall 2008 — *"Super TA" for Math 527: Principles of Analysis*, The University of Arizona. Ran weekly review sessions for the course. Duties included giving specialized lectures and facilitating problem sessions.
- Summer 2008 — *New Start Summer Program Instructor*, The University of Arizona. Taught a summer calculus preparation course to incoming freshman. Prepared a workshop for students on how to to apply for jobs. The program focused on preparing underrepresented students for college life both academically and socially.

Service

Service to the Department of Mathematics at Wake Forest University:

Chair of the following committees:

1. Mathematics Tenure Track Hiring Committee: F23, S24.

Member of the following committees:

1. Equity Committee F20, S21, F21, S22.
2. Graduate Committee F18, S19, F22, S23, F23, S24.
3. Mathematics Curriculum Committee: F18, S19, F22, S23, F23, S24.
4. The Undergraduate Curriculum Committee: F16, S17, F17, S18.
5. Statistics Tenure Track Hiring Committee: F16, S17.
6. Mathematical Competitions: F16, S17, F17, S18.
7. Mathematics Tenure Track Hiring Committee: F17, S18, F20, S21, F22, S23.
8. Postdoc Hiring Committee: F16, S17, F17, S18.
9. Colloquium Committee: F18, S19, F21, S22.

Advising:

1. Applied Mathematics: F18, S19, F19, S20, F20, S21, F21, S22, F22, S23, F23, S24.

Service to the University:

Wake Forest University:

- 2017–2019 — Lower-division adviser.
- 2017–2024 — Faculty advisor for IRIS (Integrating Research In Science) conference.

Brown University:

- 2015–2016 — *Member of qualifying exam committees for the following students:* Michael Monn (Engineering), Kaushik Vijaykumar (Engineering), Mrityunjay Kothari (Engineering).
- Spring 2015 — *Organizer for RTG Workshop on Agent Based Modeling.*
- Fall 2013–Spring 2016 — *Co-organizer Lefchetz Center for Dynamical Systems Seminar.*
- Fall 2013, Fall 2014 — *Co-organized RTG Recruitment Workshop.*

University of Arizona:

- Fall 2012 — *Calculus Advisement Program*, The University of Arizona. Advised entering freshmen on how to succeed in their calculus courses, on specific mathematics courses to take in the future and on internship opportunities.
- Fall 2009–Spring 2011 — *Founder and Organizer of the The University of Arizona Graduate Analysis Lecture Series.* Facilitated a weekly meeting with applied and pure mathematics students in which we discussed current analytical tools used in our research.
- Fall 2009–Spring 2010 — *SIAM Student Chapter President,* The University of Arizona.
- Spring 2009 — *Tucson Math Circle Co-Organizer,* The University of Arizona. Facilitated weekly mathematics activities for elementary and middle school students.
- Fall 2008–Spring 2009 — *SIAM Student Chapter Member at Large*. The University of Arizona.
- Fall 2008–Spring 2009 — *Student Brown Bag Organizer.* The University of Arizona. Organized weekly student applied mathematics colloquium.

Service to the Applied Mathematics Community:

- July 2023: *Primary Organizer:* Mathematics Climate Research Network summer school and research program.
- May 2023: *Session Organizer: Analytical Tools for Noise-Induced Transitions in Smooth and Nonsmooth SDEs.* SIAM Conference on Dynamical Systems.
- July 2022: *Session Organizer: Tipping Phenomena: Nonlinear Theory and Climate Applications.* SIAM Mathematics of Planet Earth Conference.
- January 2021: Reviewer for National Science Foundation.
- August 2020: *Session Organizer: Dynamics and Data in Models of Climate Processes.* SIAM Mathematics of Planet Earth Conference.
- July 2020: *Organizer:* AIM Summer School on Dynamics, Data, and the Covid 19 Pandemic.
- August 2019: *Organizer:* MCRN Summer School and Academic Year Engagement Program.
- March 2018: *Session Organizer: Applied Dynamical Systems.* The 42nd SIAM Southeastern Atlantic Sectional Conference.
- Dec. 2015: *Co-Organizer Session M66: Free Boundary Problems Involving Interfaces and/or Elastic Deformations.* SIAM Conference on Analysis of Partial Differential Equations.

Referee:

- Nonlinearity
- Physical Review E
- Physical Review Letters
- Education Sciences
- Journal of Elasticity
- Soft Matter
- Physica D
- SIAM Review
- Nonlinear Dynamics
- SIAM Journal on Applied Dynamical Systems (SIADS)
- Canadian Journal of Physics
- Proceedings of the Royal Society A
- SIAM Journal on Applied Mathematics (SIAP)
- Journal of the Mechanics and Physics of Solids
- SIAM Undergraduate Research Online (SIURO)
- Mathematical Biosciences and Engineering
- Applied Mathematical Modeling
- Zeitschrift für angewandte Mathematik und Physik

References

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