Malena I. Español

ACADEMIC POSITIONS

Arizona State University, Tempe, AZ
School of Mathematical and Statistical Sciences
Associate Professor with Tenure — 2024 – Present
Assistant Professor — 2019 – 2024
Barrett Honors Faculty
Affiliated with the Simon A. Levin Mathematical, Computational, and Modeling Sciences Center (MCMSC)

The University of Akron, Akron, OH
Department of Mathematics
Associate Professor with Tenure — 2018 – 2019
Assistant Professor — 2012 – 2018
Department of Mechanical Engineering
Associate Professor (Joint title) — 2018 – 2019
Assistant Professor (Joint appointment) — 2016 – 2018

EDUCATION

California Institute of Technology, Pasadena, CA — July 2009 – August 2012
Postdoctoral Scholar
Supervisor: Michael Ortiz

Tufts University, Medford, MA
Ph.D. in Mathematics — May 2009
M.Sc. in Mathematics — May 2005
Advisor: Misha E. Kilmer

Universidad de Buenos Aires, Argentina
***Licenciada* (B.Sc.) in Mathematics** — August 2003
Advisor: Gabriel Acosta, Co-Advisor: Horacio Rotstein (Boston University)

PUBLICATIONS

Note: Co-authors with an asterisk (*) were students at the time the article was prepared. In the math community, authors are usually listed in alphabetical order. It should be clear when alphabetical order was not followed.

Peer-Reviewed Journal Articles

1. R. Ceja-Ayala, **M. I. Español**, and G. Granados, *"Qualitative reconstruction methods for imaging interior Robin interfaces in EIT from Robin-to-Dirichlet data."* Inverse Problems 42 (6) 065007 (2026).

2. S. Breckling, C. Bombara*, **M. I. Español,** V. Uribe*, B. Baldonado, and J. Pillow. *"Box-Constrained L1/L2 Minimization in Single-View Tomographic Reconstruction"*. Journal of Nondestructive Evaluation 45, 25 (2026).

3. B. Sweeney*, **M. I. Español**, and R. Renaut, *"Efficient Decomposition-Based Algorithms for ℓ_1-Regularized Inverse Problems with Column-Orthogonal and Kronecker Product Matrices."* Inverse Problems 41 (7) 075016 (2025).

4. B. Sweeney*, R. Renaut, and **M. I. Español**. *"Parameter Selection by GCV and a χ^2 test within Iterative Methods for ℓ_1-regularized Inverse Problems."* SIAM Journal on Scientific Computing S112-S134 (2025).

5. **M. I. Español** and G. Jeronimo. *"Local Convergence Analysis of a Variable Projection Method for Regularized Separable Nonlinear Inverse Problems*." SIAM Journal on Matrix Analysis and Applications 46(2): 858-878 (2025).

6. M. Manning*, S. Horth*, N. Wharff*, J. Roarty*, R. Sadleir, and **M. I. Español**. *"A Deep Neural Network for a Hemiarray EIT System".* Applied Mathematics for Modern Challenges 1(1): 39-60 (2023).

7. M. Pasha, A. Saibaba**,** S. Gazzola, **M. I. Español**, and E. de Sturler, *"A Computational Framework for Edge-Preserving Regularization in Dynamic Inverse Problems."* Electronic Transactions on Numerical Analysis 58, 486-516 (2023).

8. **M. I. Español** and M. Pasha. *"Variable Projection Methods for Separable Nonlinear Inverse Problems with General-Form Tikhonov Regularization."* Inverse Problems 39 (8) 084002 (2023).

9. L. Mrad, L. Zhao, **M. I. Español**, L. Xu, and M. C. Calderer, *"Aggregation Phenomena in Lyotropic Chromonic Liquid Crystals."* Communications in Nonlinear Science and Numerical Simulation 120 (107139) (2023).

10. **M. I. Español,** D. Golovaty, and J. P. Wilber. *"A Discrete-to-Continuum Model of Weakly Interacting Two-Dimensional Incommensurate Lattices: The Hexagonal Case."* Journal of the Mechanics and Physics of Solids 173 (105229) (2023).

11. D. Austin, **M. I. Español**, and M. Pasha, *"The Image Deblurring Problem: Matrices, Wavelets, and Multilevel Methods."* Notices of the American Mathematical Society (69) 8, 1284-1295, (2022).

12. J. Adams, K. Joyce, D. Champion, E. Machorro, **M. I. Español,** M. Brennan*****, E. Clarkson, J. Pillow, R. Coffee, M. Howard, A. Gonzalez, S. Breckling, and M. Lund. "*An Approach to Characterizing Spatial Aspects of Image System Blur."* Statistical Analysis and Data Mining: The ASA Data Science Journal 1-13 (2021).

13. **M. I. Español,** D. Golovaty, and J. P. Wilber. *"Discrete-to-Continuum Modeling of Weakly Interacting Incommensurate Two-Dimensional Lattices."* Proceedings of the Royal Society A 474: 20170612 (2018).

14. **M. I. Español**, D. Golovaty, and J. P. Wilber. *"Euler Elastica as a Γ-Limit of Discrete Bending Energies of One-Dimensional Chains of Atoms."* Mathematics and Mechanics of Solids 23(7): 1104-1116 (2018).

15. A. Urbizu, B. Martin, D. Moncho, A. Rovira, M. A. Poca. J. Sahuquillo, A. Macaya, and **M. I. Español***. *"Machine Learning Applied to Neuroimaging for Diagnosis of Adult Classic Chiari Malformation: Role of the Basion as a Key Morphometric Indicator."* Journal of Neurosurgery 129(3): 779-791 (2018). (*Project leader)

16. **M. I. Español,** D. Golovaty, and J. P. Wilber. *"Discrete-to-Continuum Modeling of Weakly Interacting Incommensurate Chains".* Physical Reviews E 96, 033003 (2017).

17. J. M. Chung and **M. I. Español**. *"Learning Regularization Parameters for General-Form Tikhonov"*. Inverse Problems 33 074004 – Special Issue on Learning and Inverse Problems (2017).

18. **M. I. Español** and H. G. Rotstein. *"Complex Mixed-Mode Oscillatory Patterns in a Periodically Forced Excitable Belousov-Zhabotinsky Reaction Model".* Chaos: An Interdisciplinary Journal of Nonlinear Science 25, 064612 (2015).

19. **M. I. Español** and M. E. Kilmer. *"A Wavelet-Based Multilevel Approach for Blind Deconvolution Problems"*. SIAM Journal on Scientific Computing 36(4): A1432-A1450 (2014).

20. **M. I. Español**, D. M. Kochmann, S. Conti, and M. Ortiz. *"A Γ-Convergence Analysis of the Quasicontinuum Method"*. Multiscale Modeling and Simulation: A SIAM Interdisciplinary Journal 11(3): 766-794 (2013).

21. **M. I. Español** and M. E. Kilmer. *"Multilevel Approach for Signal Restoration Problems with Toeplitz Matrices"*. SIAM Journal on Scientific Computing 32(1): 299-319 (2010).

22. M. E. Kilmer, P. C. Hansen, and **M. I. Español**. *"A Projection-Based Approach to General-Form Tikhonov Regularization"*. SIAM Journal on Scientific Computing 29(1): 315-330 (2007).

Conference Proceedings

23. M. Manning*, S. Horth*, N. Wharff*, J. Roarty*, R. Sadleir, and **M. I. Español**. *"A Deep Neural Network for a Hemiarray EIT System"*. 23rd International Conference on Biomedical Applications of Electrical Impedance Tomography (EIT 2023).

24. P. Hota*, C. Barnett*, B. Clements*, A. Alsubhi*, N. R. Thakkar*, L. Thomas, E. Forzani, M. L. Thomas, and **M. I. Español,** *"Selection of Fluidic Flow Region of Interest in Medical Device Using Proper Orthogonal Decomposition". AIP Conference Proceedings* 2890, 020002 (2023)

25. **M. I. Español**, S. Jayasuriya, and M. Malu*. *"Multilevel Methods for Imaging Applications"*. Computational Optical Sensing and Imaging 2020 (COSI). OSA Technical Digest (Optical Society of America, 2020).

26. D. J. Rhoads*, S. J. Miller, G. D. Roberts, R. W. Rauser, D. Golovaty, J. P. Wilber, and **M. I. Español.** *"Investigation of Carbon Fiber Architecture in Braided Composites using X-Ray CT Inspection"*. Proceedings of the 2017 Society for the Advancement of Material and Process Engineering Conference (SAMPE 2017).

27. R. Wransky*, **M. I. Español**, D. McQuaide*, and B. Martin. *"MRI-Based Classifiers for Chiari Malformation I"*. Proceedings of the 2013 Midstates Conference for Undergraduate Research in Computer Science and Mathematics (MCURCSM 2013).

28. **M. I. Español**, S. Tsuei*, and M. Ortiz. *"Multilevel Methods for Electronic Structure Computations of Materials"*. Proceedings of the Fourth Congress on Industrial, Computational, and Applied Mathematics (MACI). 4 (2013) 183-186.

29. D. M. Kochmann, J. S. Amelang*, **M. I. Español**, and M. Ortiz. *"From atomistic to the continuum: a mesh-free quasicontinuum formulation based on local max-ent approximation schemes"*. Proceedings in Applied Mathematics and Mechanics (PAMM). 11 (2011), 393-394.

Publications on Education and Other Topics

30. K. Bliss, **M. I. Español**, A. Prieto-Langarica, and P. Seshaiyer. *"A Mentor Perspective on the SIAM-Simons Undergraduate Summer Research Program"*. SIAM News January-February (2024).

31. **M. I. Español**, S. Horth*, M. A. Leung, and V. Uribe*. *"Broader Engagement Program Expands to the 2022 SIAM Conference on Mathematics of Data Science"*. SIAM News December (2022).

32. S. Bañuelos, K. Benson, L. Bociu, **M. I. Español**, D. Ferrero, M. A. Horn, H. Nelson, S. Sindi, and D. Kremer. *"AWM at the 2021 SIAM Annual Meeting"*. AWM Newsletter 51 (5): 22-24 (2021).

33. L. Bociu, L. Ellwein Fix, **M. I. Español**, S. Bañuelos, H. Nelson, S. Sindi, and D. Kremer. "*AWM at the SIAM/CAIMS Annual Meeting"*. AWM Newsletter 50 (5): 17-19 (2020).

34. H. A.H. Shehadeh, P. Radu, and **M. I. Español.** *"Women in Mathematics of Materials Workshop"*. AWM Newsletter 48 (5): 15-18 (2018).

35. A. Alvarez, **M. I. Español**, A. Faridani, C. Flores, A. Marr, E. Newman, J. McNulty, R. Nugent, A. Seneres, M. Shott, W. Y. Velez, and E. Walker. *"The PCMI Workshop for Mentors: A Weeklong Workshop on Diversity?"* Notices of the American Mathematical Society 65 (5): 586-591 (2018).

36. T. J. Cutright, R. K. Willits, D. W. Ott, and **M. I. Español.** *"Development of Educational Artifacts on Wetlands by an Undergraduate, Interdisciplinary Design Team".* Proceedings of the 2018 American Society for Engineering Education North Central Section Conference (ASEENCS2018).

Book

37. *"Research in Mathematics of Materials Science".* **M. I. Español**, M. Lewicka, L. Scardia, and M. Schlomerkemper, Editors. AWM Springer Series. (September 2022). https://link.springer.com/book/9783031044953

Manuscripts in Arxiv

38. A. Fuller*, **M. I. Español**, and M. E. Kilmer, *"Structure-Informed Bounds on the Kronecker Rank of Block-Structured Matrices".* (May 2026) https://arxiv.org/abs/2605.30908

39. D. B. Comerso Salzer*, **M. I. Español**, and G. Jeronimo, *"Variable Projection Methods for Solving Regularized Separable Inverse Problems with Applications to Semi-Blind Image Deblurring".* (January 2026) https://arxiv.org/abs/2601.05224

40. S. Breckling, L. E. Dresselhaus-Marais, M. C. Brennan*, B. Kozioziemski, **M. I. Español**, R. Coffee, A. Gonzalez, M. Lund, J. Adams, J. Pillow, E. Machorro, D. Champion, K. Joyce, A. E. Williams, and M. Howard, "*An Online Dynamic Amplitude-Correcting Gradient Estimation Technique to Align X-Ray Focusing Optics".* (August 2022) https://arxiv.org/abs/2208.11250

41. **M. I. Español** and M. Pasha. *"An lp Variable Projection Method for Large-Scale Separable Nonlinear Inverse Problems."* (May 2021) https://arxiv.org/abs/2105.14155

GRANTS

Travel grants awarded are not listed here; instead, they are listed below, next to the corresponding conference or workshop.

1. Flinn Foundation Seed grant *"COREALERT(TM) rapid, rugged, point of care detection of internal bleeding,"* PI: R. Sadleir. Co-I **M. I. Español**, April 1, 2026 – September 30, 2026, $50,000.
2. NIH R41EB038858, "AI-*enabled occult bleeding detection and monitoring,"* PI: R. Sadleir. Co-I **M. I. Español**, September 4, 2025 – August 31, 2026, $306,508.
3. NSF-CURM Center for Undergraduate Research in Mathematics mini-grant: **PI: M. I. Español**, to work with Raquel Lopez at Paradise Valley Community College. May 2024 - May 2025, ~$30,000.
4. Subcontract from the DOE Nevada National Security Site*, "Computational Methods for Inverse Problems with Multi-Fidelity Data Fusion,"* **PI: M. I. Español**, January 31, 2024 - Sep 30, 2024, $51,901.
5. Mayo-Clinic Department of Surgery Small Grant *"Artificial intelligence enhanced volumetric assessment of thrombus burden in popliteal artery aneurysms,"* PI: Ina Soh, Co-Investigators: **M. I. Español**, M. Garcia-Neuer, M. Chavez, A. Meltzer, W. Stone, and V. Davila, October 2023-April 2024, $10,000.
6. SIAM-Simons Undergraduate Summer Research Program. Subcontract for mentor site. **PI: M. I. Español**, June - July 2023, $37,610.
7. NSF-HRD 1619524: Western Alliance to Expand Student Opportunities (WAESO) at ASU*, "Classifying Blood Clots in Popliteal Artery Aneurysms,"* **PI: M. I. Español**, Summer 2023, $3,000 (paid to students directly).
8. Karen EDGE Fellowship. **PI: M. I. Español**, September 2022 - August 2025, $24,000.

9. NSF-CURM Center for Undergraduate Research in Mathematics mini-grant: **PI: M. I. Español**, to work with Bechir Amdouni at South Mountain Community College. May 2022 - May 2023, $18,000.
10. NSF-HRD 1619524: Western Alliance to Expand Student Opportunities (WAESO) at ASU, *"Algorithms for X-Ray Radiography Reconstruction,"* **PI: M. I. Español**, Fall 2022, $3,000.
11. Subcontract from the DOE Nevada National Security Site, *"Numerical Methods for Limited-Angle Tomography Reconstruction,"* **PI: M. I. Español**, $99,879 (May 2020 – Sep. 2021) and $57,431 (April 2022 – Sep. 2022).
12. NSF-HRD 1619524: Western Alliance to Expand Student Opportunities (WAESO) at ASU, *"Imaging System for the Continuous Monitoring of the Lungs,"* **PI: M. I. Español**, co-PI: R. Sadleir, Summer-Fall 2021, and Spring 2022, $9,800.
13. MAA NSF DMS 1722275: PIC Math Program, **PI: M. I. Español**, $4,000, June 2018 – May 2019.
14. The University of Michigan's Center for Applied and Interdisciplinary Mathematics (MCAIM), *"Women in Math of Materials (WIMM) Workshop,"* PI: H. A. H. Shehadeh, Co-PIs: **M. I. Español** and P. Radu, May 2018, $25,000.
15. AWM ADVANCE Grant. *"WIMM Research Collaboration Conferences for Women (RCCW),"* PI: H. A.H. Shehadeh, Co-PIs: **M. I. Español** and P. Radu, May 2018, $3,000.
16. NSF DMS 1615952, *"Grain Growth in Graphene: Novel Aspects in Two Dimensions,"* PI: J. P. Wilber, Co-PIs: **M. I. Español**, D. Golovaty, August 2016- July 2019, $247,275. (No cost time extension until July 2022, $11,591 was transferred to ASU as a sub award.)
17. NSF S-STEM 1457631, *"Affording Opportunities for Sustained Success of STEM Students,"* PI: T. J. Cutright, Co-PIs: **M. I. Español**, T. Leeper, D. Ott, R. Willits, July 2015- June 2020, $638,676.
18. MAA-Tensor Women and Mathematics Grant, *"Women in Mathematics @ UA,"* **PI: M. I. Español**, May 2014-June 2015, $4,000. (No cost time extension until May 2017).
19. Conquer Chiari Research Grant, *"MRI-Based Classification of Chiari Malformation,"* **PI: M. I. Español**, Co-PI: B. Martin, January 2014- December 2014, $33,646. (No cost time extension until February 2016).
20. Summer Fellowship Research Grant, The University of Akron, *"MRI-Based Classifiers for the Detection of Chiari Malformation,"* **PI: M. I. Español**, Summer 2013, $10,000.

CONFERENCES – SEMINARS – WORKSHOPS

Invited Conference Talks

1. ILAS Plenary Speaker, SIAM Conference on Applied Linear Algebra, Long Beach, CA, May 24-28, 2027.
2. Keynote Speaker, Scientific Computing Around Louisiana (SCALA), Baton Rouge, LA, March 6-7, 2026.
3. Edge-preserving Randomized Iterative Methods for X-ray Computed Tomography, *12th Applied Inverse Problems Conference*, Rio de Janeiro, Brazil, July 28-August 1, 2025.
4. Variable Projection Methods for Large-scale Inverse Problems, *12th Applied Inverse Problems Conference*, Rio de Janeiro, Brazil, July 28 – August 1, 2025.
5. Variable Projection Methods for Large-Scale Separable Nonlinear Inverse Problems, *SIAM Conference on Computational Science and Engineering*, Fort Worth, TX, March 3-7, 2025.
6. Modeling the Mechanics of 2D Materials, *IUTAM Symposium on Computational Fracture Mechanics in Multi-field Problems on celebration of the 70th birthday of Professor Michael Ortiz*, Bad Honnef, Germany, December 8-13, 2024.
7. Keynote Speaker, STEM Education in the 21st Century: Fostering Curiosity, Collaboration, and Digital Literacy, *The 5th International Conference on Education and Technology (ICETECH)*, Indonesia, October 30-31, 2024.
8. Bridging Theory and Practice: A Journey in Applied Mathematics, Haimo Award Recipient Talk, *MAA MathFest,* Indianapolis, IN, August 8-10, 2024.
9. Variable Projection Methods for Large-Scale Separable Nonlinear Inverse Problems, MAA-AWM Invited Paper Session: Iterative and Sketching Approaches for Linear Systems and Beyond, *MAA MathFest,* Indianapolis, IN, August 8-10, 2024. ***Received NSF–AWM Travel Funding***
10. A Deep Neural Network for a Hemiarray EIT System, AWM Workshop on Women in Complex and Nonlinear Systems, SIAM Annual Meeting, Spokane, WA, July 8-12, 2024. ***Received NSF–AWM Travel Funding***
11. Variable Projection Methods for Separable Nonlinear Inverse Problems, Canadian Mathematical Society (CMS) Winter Meeting, Montreal, Canada, December 1-4, 2023.

12. The Matrix Revolution: Data, Images, and Beyond, Featured Speaker, EDGE 25th Anniversary Conference, Bryn Mawr College, October 13-14, 2023. ***Received Conference Funding***
13. An Edge-Preserving Variable Projection Method for Large-Scale Separable Nonlinear Inverse Problems, Virtual SIAM *Conference on Imaging Sciences*, March 23-26, 2022.
14. An Edge-Preserving Iterative Method for Electrical Impedance Tomography, Windows and Mirrors: Latinx Women in Mathematical Biology, Society of Mathematical Biology Annual Meeting, June 13 - 17, 2021.
15. Modeling the Mechanics of 2D Materials, Virtual SIAM Conference on Mathematical Aspects of Materials Science, Bilbao, Spain, May 17-28, 2021.
16. Computational Methods for Solving Inverse Problems in Imaging, AMS-AWM Special Session on Women of Color in Applied Math and Analysis, *Joint Mathematics Meetings (JMM)*, Virtual format, January 6-9, 2021.
17. Multilevel Methods for Imaging Applications, *Computational Optical Sensing and Imaging (COSI) Topical Meeting, Imaging, and Applied Optics Congress,* Virtual format, June 22-26, 2020.
18. Modeling the Moiré Patterns in Suspended Graphene, *Annual Technical Meeting of the Society of Engineering Science*, St. Louis, MO, October 13-15, 2019.
19. Learning from MRI Data to Diagnose Chiari Malformation, *International Conference on Industrial and Applied Mathematics (ICIAM),* Valencia, Spain, July 15-19, 2019.
20. Creating and Sustaining a Research Network for Women in Mathematics of Materials, *SIAM Conference on Computational Science and Engineering*, Spokane, WA, February 25- March 1, 2019.
21. Discrete-to-Continuum Modeling of Weakly Interacting Incommensurate Chains, *SIAM Central States Meeting,* University of Oklahoma, Norman, OK, October 5-7, 2018.
22. Discrete-to-Continuum Modeling of Weakly Interacting Incommensurate Chains, *SIAM Conference on Mathematical Aspects of Materials Science*, Portland, OR, July 9-13, 2018.
23. A Learning Approach for Computing Regularization Parameters for General-Form Tikhonov Regularization, *SIAM Annual Meeting*, Pittsburgh, PA, July 10-14, 2017.
24. Image Deblurring Using Mathematical Models, Plenary Lecture, *MAA Ohio Section Fall Meeting*, College of Wooster, Wooster, OH, October 28-29, 2016.
25. A Learning Approach for Computing Regularization Parameters for General-Form Tikhonov Regularization, *SIAM Annual Meeting*, Boston, MA, July 11-15, 2016.
26. An Upscaling Procedure for Passing from an Atomistic to a Continuum Model of Multi-Walled Carbon Nanotubes, *MRS Fall Meeting*, Boston, MA, November 30-December 5, 2014. ***Received NSF Symposium Funding***
27. Morphometric-Based Classification for Chiari Malformation, *Conquer Chiari Research Conference: Advancing Diagnosis, Management & Understanding*, The University of Akron, Akron, OH, November 7-8, 2014.
28. Deblurring Images with Mathematical Models, *SACNAS National Conference*, Los Angeles, CA, October 16-18, 2014. ***Received Conference Travel Funding***
29. A Gamma-Convergence Analysis of the Quasicontinuum Method, *IUTAM Symposium on Innovative Numerical Approaches for Materials and Structures in Multi-field and Multi-Scale Problems. A symposium on the occasion of Michael Ortiz's 60th birthday,* Burg Schnellenberg, Germany, September 1-4, 2014.
30. Multilevel Methods for Deblurring Problems, *Conference on Frontiers in Applied and Computational Mathematics*, New Jersey Institute of Technology, Newark, NJ, May 31-June 2, 2013. ***Received Conference Funding***
31. Multilevel Methods for Deblurring Problems, *Mathematical Challenges in Biomolecular/Biomedical Imaging and Visualization Workshop*, Mathematical Biosciences Institute (MBI), Columbus, OH, February 18-22, 2013. ***Received Workshop Travel Funding***
32. A Gamma-Convergence Analysis of the Quasicontinuum Method, *Annual Technical Meeting of the Society of Engineering Science*, Atlanta, GA, October 10-12, 2012.
33. A Gamma-Convergence Analysis of the Quasicontinuum Method, *AWM Workshop for Women Graduate Students and recent PhDs*, *SIAM Annual Meeting*, Minneapolis, MN, July 8-13, 2012. ***Received Association for Women in Mathematics (AWM) Travel Award***
34. A Gamma-Convergence Analysis of the Quasicontinuum Method, *Pattern Formation and Multiscale Phenomena in Materials Workshop,* Mathematical Institute, University of Oxford, Oxford, United Kingdom, September 26-28, 2011.

35. Multilevel Methods for Deblurring Problems, *Applied Mathematics and Image Processing Summer Workshop,* University of Texas-Pan American, Edinburg, TX, May 30-June 1, 2011. ***Received Workshop Travel Funding***
36. A Multilevel, Modified Regularized Total Least Norm Approach to Signal Deblurring, *Applied Inverse Problems Conference,* Texas A&M University, College Station, TX, May 23-27, 2011. ***Received Conference Travel Award***
37. Multilevel Methods for Image Deblurring, *SIAM Conference on Computational Science and Engineering*, Reno, NV, February 28-March 4, 2011.
38. A Multilevel, Modified Regularized Total Least Norm Approach to Signal Deblurring, *AMS Joint Mathematics Meetings*, San Francisco, CA, January 13-16, 2010.
39. A Modified, Regularized Total Least Norm Approach to Signal Restoration, *SIAM Conference on Applied Linear Algebra*, Monterey Bay-Seaside, CA, October 26-29, 2009. ***Received SIAM Postdoctoral Travel Award***
40. Multilevel Approaches for the Total Least Squares Method in Deblurring Problems, *International Conference on Industrial and Applied Mathematics (ICIAM)*, Zurich, Switzerland, July 16-20, 2007. ***Received SIAM Student Travel Award***
41. An Iterative, Projection-Based Algorithm for General Form Tikhonov Regularization, *SIAM Annual Meeting*, New Orleans, LA, July 11-15, 2005.

Contributed Conference Talks

42. Variable Projection Methods for Separable Nonlinear Inverse Problems, *SIAM Conference on Uncertainty Quantification* (UQ26), Minneapolis, MN, March 22-25, 2026.
43. Variable Projection Methods for Separable Nonlinear Inverse Problems, *SIAM Conference on Imaging Science*, Atlanta, GA, May 28-31, 2024.
44. Variable Projection Methods for Separable Nonlinear Inverse Problems, *SIAM Conference on Applied Linear Algebra*, Paris, France, May 13-17, 2024.
45. Variable Projection Methods for Separable Nonlinear Inverse Problems, *Second Arizona Women's Symposium in Mathematics (AWSiM),* Northern Arizona University, Flagstaff, AZ, November 18-19, 2023.
46. Variable Projection Methods for Separable Nonlinear Inverse Problems, *International Congress on Industrial and Applied Mathematics (ICIAM)*, Tokyo, Japan, August 20-25, 2023. ***Received NSF-SIAM Travel Award***
47. Variable Projection Methods for Separable Nonlinear Inverse Problems, BIRS Workshop on New Ideas on Computational Inverse Problems, Banff, Canada, October 23-28, 2022.
48. Computational Methods for Inverse Problems in Imaging, *First Arizona Women's Symposium in Mathematics (AWSiM),* Embry-Riddle Aeronautical University, Preston, AZ, November 5-6, 2022.
49. Variable Projection Methods for Separable Nonlinear Inverse Problems, *SIAM Conference on Mathematics of Data Science,* San Diego, CA, September 26-30, 2022.
50. Modeling the Mechanics of 2D Materials, *SIAM Annual Meeting*, Pittsburgh, PA, July 17-28, 2022.
51. An lp Variable Projection Method for Separable Nonlinear Inverse Problems, Copper Mountain Conference on Iterative Methods, April 4-8, 2022. Run virtually.
52. An lp Variable Projection Method for Separable Nonlinear Inverse Problems, East Coast Optimization Conference (ECOM), March 31- April 1, 2022. Run virtually.
53. An lp Variable Projection Method for Large-Scale Separable Nonlinear Inverse Problems, Mathematical Congress of the Americas, Buenos Aires, Argentina, 12-23 July 2021. Run virtually.
54. Métodos Numéricos para Resolver Problemas Inversos y sus Aplicaciones a Procesamiento de Imágenes (Spanish), XVI Congreso Dr. Alberto Monteiro, Universidad Nacional del Sur, Bahía Blanca, Argentina, May 26-June 4, 2021. Run virtually.
55. Métodos Multinivel Aplicados a Sistemas de Procesamiento de Imágenes (Spanish) *virtUMA*, Argentina, September 21-25, 2020. Run virtually.
56. Modeling of 2D Materials, AWM Workshop in Mathematics of Materials, *Second Joint Meeting of CAIMS & SIAM*, July 6 - 17, 2020. Run virtually.
57. Modeling the Mechanics of 2D Materials, *AWM Research Symposium 2019*, Rice University, Houston, TX, April 6-7, 2019. ***Received Symposium Funding***
58. Modeling of 2D Materials, *MAA Ohio Section Fall Meeting*, Malone University, Canton, OH, October 26-27, 2018.

59. Deblurring Images with Mathematical Models, *Infinite Possibilities Conference*, Howard University, Washington, DC, April 14-15, 2018. ***Received Conference Funding***
60. Registry Effects in Carbon Nanostructures, *Nonconvexity, Nonlocality, and Incompatibility: From Materials to Biology, conference in honor of Lev Truskinovsky's 60th birthday*, Department of Mathematics, University of Pittsburgh, Pittsburgh, PA, May 5-7, 2017.
61. An Upscaling Procedure for Passing from an Atomistic to a Continuum Model of Multi-Walled Carbon Nanotubes, *SIAM Conference on Mathematical Aspects of Materials Science*, Philadelphia, PA, May 8-12, 2016.
62. A Learning Approach for Computing Regularization Parameters for General-Form Tikhonov Regularization, *MAA Ohio Section Spring Meeting*, Ohio Northern University, Ada, OH, April 8, 2016.
63. Optimal Regularization Parameters for General-Form Tikhonov Regularization, *SIAM Conference on Imaging Science*, Hong Kong, May 12-14, 2014.
64. Optimal Regularization Parameters for General-Form Tikhonov Regularization, *Annual Midwest Women in Mathematics Symposium*, University of Notre Dame, South Bend, IN, April 5, 2014. ***Received Symposium Travel Funding***
65. Wavelet-Based Multilevel Methods for Eigenvalue Problems, *Joint Mathematics Meetings*, Baltimore, MD, January 15-18, 2014.
66. Multilevel Methods for Electronic Structure Computations of Materials, *Conference on Applied, Computational, and Industrial Mathematics*, Buenos Aires, Argentina, May 15-17, 2013.
67. Wavelet-Based Multilevel Methods for Eigenvalue Problems, *Frontiers in Numerical Analysis and Scientific Computing - A conference on the occasion of Lothar Reichel's 60th birthday and on the 20th anniversary of ETNA*, Kent State University, Kent, OH, April 19-20, 2013.
68. A Gamma-Convergence Analysis of the Quasicontinuum Method, *U.S. National Congress on Computational Mechanics (USNCCM-11)*, Minneapolis, MN, July 25-29, 2011. ***Received Congress Travel Award***
69. A Gamma-Convergence Analysis of the Quasicontinuum Method, *International Conference on Industrial and Applied Mathematics*, Vancouver, BC, Canada, July 18-22, 2011. ***Received SIAM Postdoctoral Travel Award***
70. Multilevel Approach for Signal Restoration Problems with Toeplitz Matrices, *Copper Mountain Conference on Iterative Methods*, Copper Mountain, CO, April 6-11, 2008. ***Received Conference Travel Funding***
71. Image Deblurring with Mathematical Models, *Annual Graduate Student Research Symposium at Tufts University*, Medford, MA, March 29, 2008.
72. Ill-Posed Problems and Regularization Methods, *NES/MAA Fall 2005 Meeting*, Durham, NH, November 18-19, 2005.

Posters

73. Variable Projection Methods for Regularized Separable Nonlinear Inverse Problems, *Householder Symposium XXII*, Cornell University, Ithaca, NY, June 8-13, 2025.
74. Compound Refractive Lens Alignment using Laser Intensity-Adapted Stochastic Gradient Descent, *Conference in Data Analysis,* Santa Fe, NM, February 25-27, 2020.
75. Registry Effects in Carbon Nanostructures, *SIAM Conference on Computational Science and Engineering*, Spokane, WA, February 25- March 1, 2019.
76. Registry Effects in Carbon Nanostructures, *Women in Mathematics of Materials Workshop*, University of Michigan's Center for Applied and Interdisciplinary Mathematics, Ann Arbor, MI, May 14-18, 2018.
77. A Discrete-to-Continuum Model of Weakly Interacting Incommensurate Chains, *IMA Hot Topic Workshop Mathematical Modeling of 2D Materials,* Minneapolis, MN, May 16-19, 2017. ***Received Workshop Funding***
78. Registry Effects in Carbon Nanostructures, *Sustainable Research Pathways Meeting,* Lawrence Berkeley National Lab, Berkeley, CA, December 7, 2016. ***Received Meeting Funding***
79. An Upscaling Procedure for Passing from an Atomistic to a Continuum Model of Multi-Walled Carbon Nanotubes, *IMA Special Workshop Mathematics and Mechanics in the 22nd Century and Counting, …*, Eugene, OR, October 23-25, 2015. ***Received NSF Conference Funding***
80. MRI-Based Classifiers for the Detection of Chiari Malformation, *Conquer Chiari Research Center Open House*, The University of Akron, Akron, April 27, 2013.
81. A Gamma-Convergence Analysis of the Quasicontinuum Method, *U.S. National Congress on Computational Mechanics*, Minneapolis, MN, July 25-29, 2011. ***Received Congress Travel Award***

82. A Gamma-Convergence Analysis of the Quasicontinuum Method, *SIAM Conference on Computational Science and Engineering*, Reno, NV, February 28-March 4, 2011.
83. A Gamma-Convergence Analysis of the Quasicontinuum Method, *IPAM Women in Mathematics Symposium*, Los Angeles, CA, February 24-26, 2011.
84. A Multilevel, Modified Regularized Total Least Norm Approach to Signal Deblurring, *Conference on Numerical Linear Algebra: Perturbation, Performance and Portability*, Austin, TX, July 19-20, 2010. ***Received Conference Travel Funding***
85. Multilevel Approach for Signal Restoration Problems with Toeplitz Matrices, *CIG Workshop on Mathematical and Computational Issues in the Solid Earth Geosciences*, Santa Fe, NM, September 15-17, 2008. ***Received Workshop Travel Funding***
86. Multilevel Approach for Signal Restoration Problems with Toeplitz Matrices, *AWM Workshop for Women Graduate Students and recent PhDs*, *SIAM Annual Meeting*, San Diego, CA, July 7-11, 2008. *Received* ***Association for Women in Mathematics (AWM) Travel Award***

Seminars and Other Presentations

87. Separable Nonlinear Bayesian Inverse Problems, ICERM Workshop on Bayesian Inverse Problems and UQ, Providence, RI, March 2-6, 2026.
88. Variable Projection Methods for Separable Nonlinear Inverse Problems, Applied Mathematics Seminar, Applied Mathematics Department, University of California-Merced, November 20, 2025.
89. Variable Projection Methods for Separable Nonlinear Inverse Problems, Applied and Computational Mathematics Seminar, Department of Mathematics, Dartmouth College, September 9, 2025.
90. Machine Learning in Action: Data, Images, and Applications, AMS Graduate Chapter, University of Texas – Arlington, February 4, 2025.
91. A deep learning approach for the electrical impedance tomography problem, online AI Medical Imaging (AIMI) Seminar, University of Texas - Austin, November 7, 2024.
92. Variable Projection Methods for Separable Nonlinear Inverse Problems, Numerical Analysis Seminar, Department of Mathematics, University of Buenos Aires, October 7, 2024.
93. Broadening Participation in STEM, ASCEND Virtual Workshop, September 25, 2024.
94. A Deep Neural Network for a Hemiarray EIT System, Society for Mathematical Biology (SMB) Diversity in Math Bio Summer Lecture Series, August 13, 2024.
95. Regularization Methods for Inverse Problems in Imaging, Modeling, Computation, Nonlinearity, Randomness and Waves Seminar, University of Arizona, April 18, 2024.
96. A Deep Neural Network for a Hemiarray EIT System, RTG Showcase, University of Arizona, April 12, 2024.
97. Regularization Methods for Inverse Problems in Imaging, Applied and Computational Math Seminar, Rutgers University, April 5, 2024.
98. Regularization Methods for Inverse Problems in Imaging, Department of Mathematics Colloquium, University of Buenos Aires, December 14, 2023.
99. Regularization Methods for Inverse Problems in Imaging, Applied Mathematics and Computation Seminar, Oregon State University, November 17, 2023.
100. Computational Methods for Inverse Problems in Imaging, Center for Biological Physics Chalk Talk Seminar, ASU, November 7, 2023.
101. Computational Methods for Inverse Problems in Imaging, Applied Mathematics Department Colloquium, University of Colorado - Boulder, November 3, 2023.
102. Computational Methods for Inverse Problems in Imaging, LIONS (Learning, Information, Optimization, Networks, and Statistics) Lunch Seminar, Arizona State University, October 20, 2023.
103. Regularization Methods for Inverse Problems in Imaging, Applied Mathematics and Scientific Computing Seminar, Temple University, October 11, 2023.
104. Variable Projection Methods for Separable Nonlinear Inverse Problems, Applied Mathematics Special Seminar, Columbia University, April 7, 2023.
105. What is an inverse problem? What is…? Seminar, Institute for Advanced Study, Princeton, NJ, April 6, 2023.
106. Computational Methods for Inverse Problems in Imaging, Department of Mathematics Colloquium, New Jersey Institute of Technology (NJIT), March 24, 2023.

107. Variable Projection Methods for Separable Nonlinear Inverse Problems, IRTG Modern Inverse Problems Seminar, Aachen University, Germany, March 3, 2023.
108. Computational Methods for Inverse Problems in Imaging, Cibercoloquio Latinoamericano de Matemáticas, February 24, 2023.
109. Computational Methods for Inverse Problems in Imaging, School of Mathematical and Statistical Sciences Colloquium, Arizona State University, Tempe, AZ, February 16, 2023.
110. Computational Methods for Inverse Problems in Imaging, Department of Mathematics Colloquium, Tufts University, February 3, 2023.
111. Variable Projection Methods for Separable Nonlinear Inverse Problems, Numerical Analysis and Scientific Computing Seminar, Courant Institute, NYU, October 7, 2022.
112. Variable Projection Methods for Separable Nonlinear Inverse Problems, Mathematical Modeling Seminar, Rochester Institute of Technology, September 13, 2022.
113. Variable Projection Methods for Separable Nonlinear Inverse Problems, Initiative for Scientific Imaging (ISI) Seminar, Los Alamos National Laboratory, September 8, 2022.
114. Modeling the Mechanics of 2D Materials, Integrable System and Nonlinear Mechanics Seminar, University of Texas Rio Grande Valley, April 19, 2022.
115. Modeling the Mechanics of 2D Materials, Math Department Seminar, Texas A&M Corpus Christi, April 15, 2022.
116. Re-Imaging the World with Linear Algebra, Math Department Colloquium, Cal Poly Pomona, April 13, 2022.
117. Re-Imaging the World with Linear Algebra (in Spanish), Math Club Seminar, Yachay Tech, Ecuador, December 16, 2021.
118. Variable Projection Methods for Separable Nonlinear Inverse Problems, RTG Seminar, SoMSS, ASU, November 8, 2021.
119. Modeling the Mechanics of 2D Materials, Mechanical and Aerospace Engineering Research Seminar Series, University of Colorado – Colorado Springs, April 15, 2021.
120. Re-Imaging the World with Linear Algebra, Mathematics Graduate Seminar, California State University – Channel Islands, February 15, 2021.
121. Modeling the Mechanics of 2D Materials, Numerical Analysis Group Seminar, Universidad de Córdoba, Argentina, November 30, 2020.
122. Imaging the Inside, Talk Math with Your Friends Virtual Mathematics Colloquium, November 12, 2020.
123. Computational Methods for Solving Inverse Problems in Imaging, Applied Math Seminar, Kansas State University, Virtual, on October 29, 2020.
124. Deblurring Images with Mathematical Models, Math Colloquium, Appalachian State University, Virtual, on September 25, 2020.
125. Deblurring Images with Mathematical Models, RTG Seminar, Arizona State University, Tempe, AZ, on September 23, 2019.
126. Deblurring Images with Mathematical Models, Inverse Problems Seminar, Colorado State University, Fort Collins, CO, on March 28, 2019.
127. Modeling the Mechanics of 2D Materials, Colloquium, School of Mathematical and Statistical Sciences, Arizona State University, Tempe, AZ, January 10, 2019.
128. Deblurring Images with Mathematical Models, Applied and Computational Math Seminar, Arizona State University, Tempe, AZ, February 2, 2018.
129. Deblurring Images with Mathematical Models, Math Department Colloquium, Cleveland State University, Cleveland, OH, April 21, 2017.
130. Deblurring Images with Mathematical Models, Department of Mathematics and Computer Science Pizza Talks, Ohio Wesleyan University, Delaware, OH, April 19, 2017.
131. Learning from Data: Applications to Image Deblurring and Medical Diagnosis, Center for Data Science, Analytics, and IT Seminar, The University of Akron, Akron, OH, October 17, 2016.
132. Math Student Organizations: How to Start Them and Keep Them Going, Ohio NExT Workshop, Ohio Northern University, Ada, OH, April 8, 2016.
133. An Efficient Learning Approach for Computing Regularization Parameters for General-Form Tikhonov Regularization, Computational and Applied Mathematics Seminar, Kent State University, Kent, OH, October 16, 2015.

134. The Math Behind Image Deblurring, National Center for Space Exploration and Research (NCSER) Seminar, NASA Glenn Research Center, Cleveland, OH, June 20, 2014.
135. MRI-Based Classifiers for the Detection of Chiari Malformation, Office of Research Administration (ORA) Research for Lunch, The University of Akron, Akron, OH, March 5, 2014.
136. Morphometric-Based Classification for Chiari Malformation, International Chiari Research Group Monthly Meeting, Conquer Chiari Research Center, The University of Akron, Akron, OH, December 6, 2013.
137. A Gamma-convergence Analysis of the Quasicontinuum Method, Computational and Applied Mathematics Seminar, Kent State University, Kent, OH, September 27, 2013.
138. Multilevel Methods for Image Deblurring, Imaging Seminar, Case Western Reserve University, Cleveland, OH, September 18, 2013.
139. A Gamma-convergence Analysis of the Quasicontinuum Method, Mechanics, Materials and Computing Seminar, Carnegie Mellon University, Pittsburgh, PA, February 8, 2013.
140. Multilevel Methods for Image Deblurring, Computational and Applied Mathematics Seminar, Kent State University, Kent, OH, September 28, 2012.
141. A Gamma-convergence Analysis of the Quasicontinuum Method, PDE and Analysis Seminar, University of Pittsburgh, Pittsburgh, PA, September 24, 2012.
142. Multilevel Methods for Image Deblurring, PDE and Applied Mathematics Seminar, University of Akron, Akron, OH, September 20, 2012.
143. A Gamma-convergence Analysis of the Quasicontinuum Method, Department of Mathematics, California Polytechnic State University, San Luis Obispo, CA, January 31, 2012.
144. A Gamma-convergence Analysis of the Quasicontinuum Method, Department of Mathematics, Kennesaw State University, Kennesaw, GA, January 17, 2012
145. A Gamma-convergence Analysis of the Quasicontinuum Method, Department of Mathematics, University of Akron, Akron, OH, January 13, 2012.
146. A Gamma-Convergence Analysis of the Quasicontinuum Method, Mathematics in the Sciences Seminar, Institute for Mathematics, University of Wurzburg, Wurzburg, Germany, December 8, 2011.
147. A Gamma-Convergence Analysis of the Quasicontinuum Method, Applied Analysis Seminar, Institute for Applied Mathematics, University of Bonn, Bonn, Germany, December 1, 2011.
148. A Gamma-Convergence Analysis of the Quasicontinuum Method, Seminar Series in Numerical Mathematics and Mechanics, Institute for Mechanics, University of Duisburg-Essen, Essen, Germany, November 28, 2011.
149. A Gamma-Convergence Analysis of the Quasicontinuum Method, Differential Equations and Numerical Analysis Seminar, Departamento de Matemáticas, Universidad de Buenos Aires, Argentina, September 13, 2011.
150. Multilevel Methods for Image Deblurring, Statistics/OR/Math Finance Seminar, Claremont Center for the Mathematical Sciences, Claremont, CA, November 4, 2010.
151. Multilevel Methods for Deblurring Problems, Center for Engineering Science Advanced Research (CESAR) Seminar, Oak Ridge National Laboratory, Oak Ridge, TN, May 12, 2009.
152. Multilevel Methods for Deblurring Problems, Computational Solid Mechanics Group Seminar, California Institute of Technology, Pasadena, CA, May 8, 2009.
153. A Multilevel, Modified Regularized Total Least Norm Approach to Signal Deblurring, Numerical Analysis Seminar, Department of Mathematics, University of Maryland, College Park, MD, April 21, 2009.
154. Multilevel Methods for Ill-Posed Problems, SIAM Student Chapter Luncheon Seminar, Tufts University, Medford, MA, November 19, 2008.
155. Multilevel Methods for Ill-Posed Problems, Applied Mathematics and Scientific Computing Seminar, Department of Mathematics, Temple University, Philadelphia, PA, November 12, 2008.
156. Multilevel Methods for Ill-Posed Problems, Differential Equations and Numerical Analysis Seminar, Departamento de Matemáticas, Universidad de Buenos Aires, Argentina, May 14, 2008.
157. Neural Decoding: Classifiers in Action, SIAM Student Chapter Luncheon Seminar, Tufts University, Medford, MA, November 19, 2007.
158. Neural Decoding: Classifiers in Action, Kreiman Lab Seminar, Children's Hospital Boston, Boston, MA, August 31, 2007.
159. Discrete Ill-Posed Problems and Regularization Methods, Kreiman Lab Seminar, Children's Hospital Boston, Boston, MA, June 17, 2007.

160. Singular Value Decomposition and its Applications to Ill-Posed Problems, Student Seminar, Departamento de Matemáticas, Universidad de Buenos Aires, Argentina, May 14, 2007.
161. Summer Experience at The MathWorks, Presentation for Computer Science, Engineering, and Mathematics Scholars (CSEMS) at Tufts University, Medford, MA, November 8, 2006.
162. A Summer Experience at The MathWorks, SIAM Student Chapter Luncheon Seminar, Tufts University, Medford, MA, November 1, 2006.
163. Image Deblurring, Image Processing Team Meeting, The MathWorks, Natick, MA, August 24, 2006.
164. A Multilevel Method for Ill-Posed Problems, MATLAB Math Team, The MathWorks, Natick, MA, January 2006.

Research Workshops

1. ICERM Workshop on Bayesian Inverse Problems and UQ, Providence, RI, March 2-6, 2026. ***Received Workshop Funding***
2. ICERM Workshop on Randomized Numerical Linear Algebra, Providence, RI, February 2-6, 2026. ***Received Workshop Funding***
3. IPAM Collaborative Workshop on Randomized Numerical Linear Algebra, Los Angeles, CA, August 11-14, 2025.
4. BIRS Workshop on New Ideas in Computational Inverse Problems, Banff, Canada, October 23-28, 2022.
5. BIRS Workshop on Building Networks: Women in Complex & Nonlinear Systems, Banff, Canada, September 18 - 23, 2022.
6. BIRS Virtual Workshop on Women in Inverse Problems, December 5-10, 2021.
7. BIRS Virtual Workshop on Novel Mathematical Methods in Materials Science: Applications to Biomaterials, June 14-18, 2021.
8. SAMSI Program on Numerical Analysis in Data Science, Virtual Working Group on Large Scale Inverse Problems and Uncertainty Quantification, 2020-2021.
9. Data Analysis for Nuclear Security Science Workshop, Nevada National Security Site (NNSS), North Las Vegas, NV, January 13-16, 2020.
10. Michigan Center for Applied and Interdisciplinary Mathematics (MCAIM) Women in Mathematics of Materials (WIMM) Workshop, University of Michigan, Ann Arbor, MI, May 14-18, 2018. ***Received Workshop Funding***
11. Institute for Mathematics and its Applications (IMA) Hot Topic Workshop: Mathematical Modeling of 2D Materials, University of Minnesota, Minneapolis, MN, May 16-19, 2017. ***Received Workshop Funding***
12. The 24th Annual IAS/Park City Mathematics Institute (PCMI) Summer Session, Mathematics and Materials, Undergraduate Faculty Program, Park City, UT, June 29 – July 19, 2014. ***Received Program Funding***
13. Mathematical Biosciences Institute (MBI) Current Topic Workshop: Mathematical Challenges in Biomolecular/Biomedical Imaging and Visualization, Ohio State University, Columbus, OH, February 18-22, 2013. ***Received Workshop Travel Funding***
14. Institute for Mathematics and Its Applications (IMA) NSF PIRE Summer School: New frontiers in multiscale analysis and computing materials, University of Minnesota, Minneapolis, MN, June 21-29, 2012.
15. Mathematical challenges of materials science condensed matter physics: From quantum mechanics through statistical mechanics to nonlinear PDE, Hausdorff Trimester Program, Hausdorff Research Institute for Mathematics (HIM), Bonn, Germany, May 20-June 16, 2012. ***Received Program Funding***
16. Institute for Mathematics and its Applications (IMA) Large-scale Inverse Problems and Quantification of Uncertainty Workshop, University of Minnesota, Minneapolis, MN, June 6-10, 2011. ***Received Workshop Travel Funding***
17. Institute for Pure and Applied Mathematics (IPAM) Women in Mathematics Symposium, UCLA, Los Angeles, CA, February 24-26, 2011.
18. Mathematical Sciences Research Institute (MSRI) Introductory Workshop on Inverse Problems and Applications, Berkeley, CA, August 23-27, 2010. ***Received Workshop Travel Funding***
19. Summer School in Seismic Imaging, University of Washington, Seattle, WA, August 10-14, 2009. ***Received Summer School Travel Funding***
20. American Mathematical Society Mathematics Research Communities (AMS MRC) Program in Inverse Problems, Snowbird Resort, UT, June 20-26, 2009. ***Received Program Travel Funding***

21. Graduate Student Workshop in Inverse Problems, Colorado State University, Ft. Collins, CO, July 30-August 3, 2007. ***Received Workshop Travel Funding and Tufts GSAS Travel Award***
22. Mathematical Modeling in Industry: A Workshop for Graduate Students, Institute for Mathematics and its Applications (IMA), University of Minnesota, Minneapolis, MN, August 1-10, 2005. ***Received Workshop Travel Funding and Tufts GSAS Travel Award***

Faculty Development Workshop Participation

1. MAA PIC Math Workshop on Data Science, Brigham Young University, Provo, UT, June 18-22, 2019. ***Received Workshop Funding***
2. MAA PIC Math Program – Preparation for Industrial Careers in Mathematical Sciences – Summer Training Workshop, Brigham Young University, Provo, UT, May 29 – June 2, 2018. ***Received Program Funding***
3. Mathematical Sciences Research Institute (MSRI) Workshop on Critical Issues in Mathematics Education 2018: Access to Mathematics by Opening Doors for Students Currently Excluded from Mathematics, February 21-23, 2018, MSRI, Berkeley, CA. ***Received Workshop Funding***
4. The 27th Annual IAS/Park City Mathematics Institute (PCMI) Summer Session, Workshop on Increasing Minority Participation in Undergraduate Mathematics, Park City, UT, June 26-30, 2017. ***Received Program Funding***
5. Ohio NExT Workshop, Ohio Northern University, Ada, OH, April 8, 2016.
6. Project NExT Workshop, MAA MathFest, Portland, OR, August 6-9, 2014.
7. Ohio NExT Workshop, The University of Toledo, Toledo, OH, April 3-4, 2014.
8. Ohio NExT Workshop, Cleveland State University, Cleveland, OH, October 3-4, 2013.
9. Project NExT Workshop, MAA MathFest, Hartford, CT, July 29 – August 3, 2013.

STUDENTS - POSTDOCS SUPERVISION

Graduate Students

Arizona State University

1. Yasaman Mohammadpour, PhD in Data Science, Analytics, and Engineering (Co-advised with R. Sadleir), Summer 2026 – Present.
2. Isiaha Rodriguez, PhD student in Applied Mathematics, Fall 2025 – Present.
3. Anwar Khaddaj, PhD student in Applied Mathematics (Co-advised with R. Sadleir), Fall 2025 – Present.
4. Shalini Chauhan, PhD student in Applied Mathematics (Co-advised with J. Chi), Fall 2024 – Present.
5. Brandon Burkhardt, PhD student in Applied Mathematics (Co-advised with P. Wilber and D. Golovaty), Spring 2024 – Present.
6. Jordan Dworaczyk, PhD student in Applied Mathematics, Fall 2023 – Present. MS. Mathematics 2023. ***Recipient of the 2023 DoD SMART (Science, Mathematics, and Research for Transformation) Fellowship***
7. Jacob Roarty, PhD in Applied Mathematics (Co-advised with R. Sadleir), Spring 2026. Currently a resident mathematician at Edfinity.
8. Allison Fuller, PhD in Applied Mathematics, Spring 2026.
9. Danyh Tolah, PhD in Applied Mathematics, Fall 2025.
10. Robert Pawloski, Master's in Mathematics, Spring 2025. Currently a PhD student in the Applied Mathematics program at the University of Colorado - Boulder
11. Victoria Uribe, PhD in Applied Mathematics (Co-advised with R. Platte), Spring 2025. Currently a Senior Professional Staff at Johns Hopkins Applied Physics Laboratory.
12. Mason Manning, PhD in Applied Mathematics (Co-advised with T. Morgan and R. Sadleir), Spring 2025. Currently a Data Scientist at Capital One.
13. Brian Sweeney, PhD in Applied Mathematics (Co-advised with R. Renaut), Spring 2025. Currently a Research Scientist at Lockheed Martin.
14. Bechir Amdouni, PhD in Applied Mathematics, Spring 2024. Currently a Professor of Mathematics at South Mountain Community College.
15. Jazmine Perez, PhD student in Applied Mathematics, Summer 2020 – Spring 2022. (Transferred to Math Ed. PhD program).

16. Mohit Malu, PhD student in Electrical Engineering. Research Project (Co-supervised with S. Jayasuriya), Fall 2019 – Fall 2020.

University of Buenos Aires

17. Silvina Del Duca, PhD student in Applied Mathematics (Co-advised with S. Laplagne), Spring 2024 – Present.

The University of Akron

18. Emmanuel Rivera, MS in Applied Mathematics (Co-advised with D. Golovaty and P. Wilber), "*Equilibrium Configuration and Thermal Fluctuation in Interacting Monolayers*," 2019. ***Recipient of the 2018 DOE Science Undergraduate Laboratory Internship (SULI).***
19. Lucas Stanek, MS in Applied Mathematics (Co-advised with D. Golovaty and P. Wilber), "*Deformation of a Graphene Sheet Driven by Lattice Mismatch with a Supporting Substrate*," 2017.
20. Amirreza Hashemi, MS in Applied Mathematics, "*Parameter Choices for the Split Bregman Method Applied to Signal Restoration,*" 2016.
21. Rachel Richards, MS in Applied Mathematics, *"Morphometric-Based Classification for Chiari Malformation Type I,"* 2015.
22. Rem Wransky, MS in Applied Mathematics, *"True Color Measurements Using Color Calibration Techniques,"* 2015.
23. Daniel Rhoads, MS in Applied Mathematics (Co-advised with D. Golovaty and P. Wilber), *"A Mathematical Model of Graphene Nanostructures,"* 2015.
24. Mona Matar, MS in Applied Mathematics (Co-advised with D. Golovaty and P. Wilber), *"Atomistic-to-continuum Modeling of the Detachment of a Graphene Sheet,"* 2014.
25. Tim Nixdorf, MS in Applied Mathematics (Co-advised with D. Golovaty and P. Wilber), *"A Mathematical Model for Carbon Nanoscrolls,"* 2014.
26. Ting Gao, MS in Applied Mathematics (Co-advised with D. Golovaty and P. Wilber), *"Energy-Based Model of Multi-Walled Carbon Nanotubes: Atomistic-to-continuum Approach Including Nonlocal Interactions*," 2013.

Undergraduate Research Mentoring

Arizona State University

1. Lekha Shrivastava, Research Assistant, Fall 2025 – Present.
2. Alexander Shin, Research Assistant, Fall 2025 – Present.
3. Naman Vaibhav Gandhi, Barrett College Program, Fall 2024 – Fall 2025.
4. Lizbeth Hernandez, CURM, Fall 2024 – Spring 2025.
5. Abraham Lozano Serna, CURM, Fall 2024 – Spring 2025.
6. Anna Rodas, CURM, CURM, Fall 2024 – Spring 2025.
7. Emmanuel Alcantar, CURM, Fall 2024 – Spring 2025.
8. Robert Pawloski, Barrett Honors Thesis, *"Applying Variable Projection Methods to Nonlinear Least Squares Problems,"* 2024.
9. Joshua Giel, Barrett Honors Thesis, *"A U-Net to Identify Deforested Areas in Satellite Imagery of the Amazon,"* 2024.
10. Liam Douglas, Barrett College Program, Fall 2022 – Spring 2023. Barrett Honors Thesis, *"A U-Net to Identify Deforested Areas in Satellite Imagery of the Amazon,"* 2024.
11. Ashley Ramsay, SIAM-Simons, Summer 2023.
12. Kelsi Anderson, SIAM-Simons, Summer 2023.
13. Yedidya Brown, WAESO, Summer 2023.
14. Steel Baker, CURM, Fall 2022 – Spring 2023. WAESO, Fall 2022, Summer 2023.
15. Jade Buzinski, CURM, Fall 2022 – Spring 2023.
16. Santino Guerra, CURM, Fall 2022 – Spring 2023.
17. Lilia Murphy, CURM, Fall 2022 – Spring 2023.
18. Zachary Smith, Barrett Honors Thesis, *"Image Deconvolution using an Alternating Minimization Process,"* 2023.
19. Drew Christner, Barrett College Program, Fall 2022 – Spring 2023.

20. Hibah Usmani, Barrett College Program, Fall 2022.
21. Shibbi Ayyanar, Barrett College Program, Fall 2022.
22. Lia Arencibia Rodriguez, REU AM^2, Summer 2022.
23. Ellie Gunderson, REU AM^2, Summer 2022.
24. Paul Kim, REU AM^2, Summer 2022.
25. Chelsea Patti, REU AM^2, Summer 2022.
26. Jose Alanis, REU QRLSPP, Summer 2022.
27. Soledad Farber, REU QRLSPP, Summer 2022.
28. Shelby Horth, REU QRLSPP, Summer 2022. ***Recipient of the 2023 Goldwater Fellowship***
29. Nicholas Wharff, REU QRLSPP, Summer 2022.
30. Lucia Ramirez, WAESO, Summer and Fall 2021. (co-advised with R. Sadleir)
31. Brian Aguilar, WAESO, Summer and Fall 2021. (co-advised with R. Sadleir)
32. Phoenix Nelson, REU AM^2, Summer 2021.
33. Van Nguyen, REU AM^2, Summer 2021.
34. Joshua Loeffler, REU AM^2, Summer 2021.
35. April Tran, Summer research project, Summer 2021.
36. Kenna Zimmerman, Barrett Honors Thesis*, "Sports Summary: Automated Summarization of Basketball Games,"* 2021.
37. Zeeshan Jawaid, Barrett Honors Thesis*, "The Range of Algorithmic Choreography,"* 2020.

University of Buenos Aires
38. Delfina Comerso, Thesis in Data Science (Co-advised with G. Jeronimo), Spring 2025.

The University of Akron
39. Jonathan Wittmer, research project, Spring 2018 – Spring 2019.
40. Andrew Markja, NSF research assistant (Co-advised with D. Golovaty and P. Wilber), Summer 2018.
41. Steven Abbate, NSF research assistant (Co-advised with D. Golovaty and P. Wilber), Summer 2018.
42. Alexander Alberts, NSF research assistant (Co-advised with D. Golovaty and P. Wilber), Spring 2017.
43. Emmanuel Rivera, NSF research assistant (Co-advised with D. Golovaty and P. Wilber), Spring 2017.
44. Marissa Gross, NSF research assistant (Co-advised with D. Golovaty and P. Wilber), Spring 2017.
45. Mackenzie Jones, research project, Spring 2016.
46. Oliver Evans, research assistant, Spring 2016.
47. Rem Wransky, Honors Thesis (Co-advised with B. Martin), 2014.
48. Christopher Brandt, Summer project, 2013.
49. Hannah Lebo, Summer project, 2013.

California Institute of Technology
50. Arturo J. Mateos, *"Design of Multivariate Interpolation Schemes,"* MURF, 2012.
51. Hyun Ji Jane Bae, *"Analysis of Atomistic Models for Solid Materials,"* SURF 2011.
52. Ka Kin Kenneth Hung, *"Analysis of the Quasicontinuum Method,"* SURF 2011.
53. Andre Pradhana, *"Solving Kohn-Sham Equation via Iterative Methods,"* SURF 2010.
54. Stephanie Tsuei, *"Developing Computational Tools to Predict Material Behavior,"* SURF 2010.

High School Student Research Mentoring

Arizona State University
1. James Lee (Hamilton High School), Summer Research 2021 and SCENE Program Fall 2021-Spring 2022.
2. Chloe Zhan (Hamilton High School), Summer Research 2021 and SCENE Program Fall 2021-Spring 2022.
3. Elizabeth Wei (Desert Vista High School) Started in the Spring of 2021 and became part of the SCENE Program from Fall 2021 to Spring 2022.
4. Sahil Choudhri (BASIS Chandler), Summer Research, Summers 2020 and 2021, became part of the SCENE Program Fall 2021-Spring 2022.
5. Ella Wang (BASIS Chandler), Summer Research, Summer 2020.

Postdoctoral Mentoring and Supervision

Arizona State University
Rafael Ceja-Ayala, Presidential Postdoctoral Fellow, Fall 2024 – Present.
Mirjeta Pasha, SoMSS Postdoctoral Associate, Fall 2020 – Spring 2022.

Doctoral, Master's, and Honors Thesis Committees

Arizona State University
- Served on 16 Ph.D. thesis committees: Enya Kuo, Statistics, 2026; Mela Hardin, Mathematics, 2026; Guangting Yu, Applied Mathematics, 2025; Nicholas Chmielewski, Applied Mathematics, 2025; Abdulmajeed Alsubhi, Applied Mathematics, 2025; Max Mercer, Applied Mathematics, 2025; Theophilus Kwofie, Applied Mathematics, 2024; Atta Ullah, Applied Mathematics, 2024; Michael Byrne, Applied Mathematics, 2023; Salman Safdar, Applied Mathematics, 2023; Sajana Ratnayake, Aerospace Engineering, 2022; Reza Ahmed, Engineering (SEMTE), 2020; Miandra Ellis, Applied Mathematics, 2022; Zhimin Wu, Applied Mathematics, 2021; Genesis Islas, Applied Mathematics, 2021; Rahim Taghikhani, Applied Mathematics, 2020.
- Served on 5 master's thesis committees: Ryan Swart, MS in Mathematics, 2026; Jade Lariviere, MS in Biomedical Engineering, 2025; Maosheng Guo, MS in Mathematics, 2023; Roberto Alvarez, MS in Mathematics 2021; Cameron Whyte, MS in Mathematics 2021.
- Served as reader for 2 honors theses: Ron Balanay, Mathematics, 2025; Zeeshan Jawaid, Computational Mathematics and Music, 2019.

University of Buenos Aires
- Served on 1 Ph.D. thesis committee: Martina Oviedo, Mathematics, 2024.

The University of Akron
- Served on 19 PhD thesis committees: Mostak Mahammad, Electrical and Computer Engineering, 2019; Faez Alkadi, Mechanical Engineering, 2019; Hui Tao, Civil Engineering, 2018; Sagr Alamri, Mechanical Engineering, 2018; Nilan Udayanga, Electrical and Computer Engineering, 2018; Akm Arafat, Electrical and Computer Engineering, 2018; Davindra Tulsi, Polymer Engineering, 2018; Jui-Hsiang Hung, Polymer Engineering, 2017; Xuan Li, Psychology, 2017; Anup Pant, Biomedical Engineering, 2017; Sudip Adhikari, Mechanical Engineering, 2017; Ehsan Saeidpour Parizy, Electrical and Computer Engineering, 2017; Osama Alkhateeb, Electrical and Computer Engineering, 2017; Ardalan Alizadeh, Electrical and Computer Engineering, 2016; Zhao Li, Civil Engineering, 2016; Abdullateef Hasan Bashiri, Mechanical Engineering, May 2016; Jing Zhong, Polymer Engineering, 2016; Amirhossein Molavi Tabrizi, Civil Engineering, November 2015, Nicholas Shaffer, Mechanical Engineering, November 2014.
- Served as reader for 4 master's theses: Alexander Alberts, Applied Mathematics, 2019; Cassandra Durell, Applied Mathematics, 2019; William Sands, Applied Mathematics, 2017; Cody Wood, Applied Mathematics, 2017.
- Served as reader for 2 honors theses: Mackenzie Jones, Applied Mathematics, 2018; Oliver Evans, Applied Mathematics, 2018.

TEACHING EXPERIENCE

Arizona State University, Tempe, AZ August 2019 – Present
Instructor
Applied Linear Algebra (MAT 343)
Numerical Analysis I (MAT 423)
Topic: Computational Method for Image Processing (MAT 494)
Applied Linear Algebra (APM 505)
Advanced Numerical Linear Algebra (APM 520)

The University of Akron, Akron, OH August 2012 – May 2019
Instructor
Calculus I (3450-221)
Introduction to Ordinary Differential Equations (3450-335)
Linear Algebra (3450-312)
Applied Numerical Methods I and II (3450-427/527)
Advanced Numerical Analysis I and II (3450-428/528)
Honors Colloquium: The Impact of Mathematics in the World Around Us (1870-370)
Topics in Mathematics: Discrete Inverse Problems (3450-489)
Topics in Mathematics: Solving BIG (Business, Industrial, and Government) Mathematical Problems (3450-489)
Undergraduate Individual Reading: Mathematical Methods in Medical Image Processing (3450-497)
Graduate Individual Reading: Wavelets and their Applications (3450-597)

California Institute of Technology, Pasadena, CA March 2010 – December 2010
Instructor
Reading and Independent Study in Electronic Structure of Materials
Reading and Independent Study in Computational Physics

Tufts University, **Department of Mathematics, Medford, MA** September 2005 – May 2009
Instructor
Introduction to Calculus
Calculus I
Calculus II

Teaching Assistant
Applications of Advanced Calculus
Numerical Analysis
Numerical Linear Algebra
Symmetry

Universidad de Buenos Aires, Argentina April 1998 – June 2001
Instructor
Calculus for Economists
Algebra for Economists

OTHER TEACHING – MENTORING EXPERIENCES

Short Courses

- Practicum for Undergraduate MAthematicians (PUMA) in Inverse Problems and Data Assimilation with R. Baptista. Institute for Pure and Applied Mathematics (IPAM), Los Angeles, CA, November 23-24, 2024.
- Invited Lecturer, NSF Math Institutes' Modern Mathematics Workshop at SACNAS, Phoenix, AZ, October 30-31, 2024. https://www.ipam.ucla.edu/programs/special-events-and-conferences/nsf-mathematics-institutes-modern-math-workshop-at-sacnas-3/
- Taught a one-month-long elective course on Regularization Methods for Inverse Problems, Department of Mathematics, University of Buenos Aires, October 2024.
- Invited Lecturer, SIAM Gene Golub Summer School on Iterative and Randomized Methods for Large-Scale Inverse Problems, Quito, Ecuador, July 22 – August 2, 2024. https://g2s32024.github.io/
- Invited Faculty Mentor, SIAM Graduate Student Mathematical Modeling Camp, University of Delaware, July 20-23, 2024. https://www.siam.org/students-education/programs-initiatives/gsmmc-and-mpi
- Invited Lecturer, I gave three 90-minute lectures, "Re-Imaging the World Through Linear Algebra," as part of the Bilingual Program Mathematics Sin Fronteras for undergraduate students from the Americas. March 2021. https://www.dam.brown.edu/MSF/Archives/Spring2021/

Summer REUs at ASU
SIAM-Simons Undergraduate Summer Research Program 2023
AM^2 ASU/Maricopa County Community College District Applied Math REU Program 2021-2022
Quantitative Research in the Life and Social Sciences REU Program (QRLSSP) 2022

OTHER RESEARCH/PROFESSIONAL EXPERIENCE

Harvard University - Children's Hospital, Boston, MA June – August 2007
Research Assistant
Supervisor: Gabriel Kreiman
Designed and implemented regularized classifiers in MATLAB to decode the activity of neural populations in the cerebral cortex. Applied machine learning techniques to data obtained from electroencephalograms of epileptic patients.

MathWorks, Natick, MA June – August 2006
Summer Intern
Supervisor: Patrick D. Quillen
Designed, implemented in C++, and tested algorithms for computing Incomplete LU (ILU) factorizations (ILU(0), ILUT, and MILU). These subroutines have been incorporated in MATLAB 2007a.

BC Alejandro Bloise Consulting, Buenos Aires, Argentina October 1998 – June 2001
Actuarial Assistant
Supervisor: Alejandro Bloise
Priced life and health insurance products.

HONORS AND AWARDS

- 2027 Association for Women in Mathematics (AWM) Fellow
- Recognized by SIAM in honor of National Volunteer Month, April 1, 2025. https://www.siam.org/publications/siam-news/articles/siam-recognizes-national-volunteer-month#Espanol
- Recipient of the 2024 MAA Deborah and Franklin Tepper Haimo Award.
- Nominated for the ASU FWA Outstanding Faculty Mentor Award, 2024-2025.
- Nominated for the ASU FWA Outstanding Faculty Mentor Early Career Award, 2023-2024.
- Nominated for the ASU Graduate College Outstanding Faculty Mentor Award, 2023-2024.
- Named the 2022 Karen EDGE Fellow.
- Interviewed by Selvi Kara and Padi Fuster for Meet a Mathematician, May 2022. https://www.youtube.com/watch?v=YahqcTiHdV8
- Interviewed by Scott Hershberger for AMS Mathematical Moments, May 2022. https://www.ams.org/publicoutreach/mathmoments/mm161-deblurring-images
- Recognized by SIAM in honor of Hispanic Heritage Month, October 10, 2021. https://www.siam.org/publications/siam-news/articles/honoring-dr-malena-i-espanol/
- Interviewed by Antonio Cafure for "Matemática Sentimental" (Spanish), August 13, 2021, https://www.youtube.com/watch?v=X0_DvAHzeXs
- Featured in "Mujeres en STEAM" (Spanish), July 19, 2020. https://link.medium.com/lOeIGTHHU9
- Interviewed by Mariana Silvestro for [LAS] de sistemas: Mujeres in STEAM (Spanish), July 19, 2020. https://www.youtube.com/watch?v=flveLhMPrIw
- Nominated for The College of Liberal Arts and Sciences Teaching Award, 2019-2020.
- Featured in "Women Do Math". https://www.womendomath.org/malena-espanol/
- Featured in "Lathisms", September 24, 2017. https://www.lathisms.org/calendar-2017/malena-espanol
- 2013-2014 Project NExT Fellow, Mathematical Association of America.
- 2008 SIAM Student Chapter Certificate of Recognition.

PROFESSIONAL SERVICE

- Referee for SIAM Reviews, SIAM Journal on Scientific Computing, Inverse Problems, Applied Numerical Mathematics, IEEE Signal Processing Letters, Inverse Problems and Imaging, Numerical Linear Algebra and Applications, Journal of Computational and Applied Mathematics, Mathematics of Computation, Mathematical Methods of Operations Research, PLOS ONE, Journal of Humanistic Mathematics, BIT Numerical Mathematics, SIAM Journal of Matrix Analysis and Applications, Journal of Scientific Computing, Journal Electronic Transactions on Numerical Analysis (ETNA), Mathematics, Journal of Aeronautical Sciences, Fluids and Barriers in CNS, Journal of Computational Physics, SIAM Undergraduate Research Online (SIURO), La Matematica, IEEE Transactions on Image Processing, Numerical Algorithms, Philosophical Transactions of the Royal Society A, Optimization, Boletín de la Sociedad Matemática Mexicana, International Journal of Computer Mathematics, International Journal of Modelling and Simulation, IEEE Transactions on Computational Imaging, and IEEE Transactions on Automatic Control.
- SIAM News Liaison officer for the SIAM Activity Group on Linear Algebra. Since June 2022
- Consultant (Mentor), MAA Project NExT. Since 2018
- Founder and Chair of the Southwest Section of SIAM Since 2026
- AMS-Simons Research Enhancement Grants for PUI Faculty Committee Member. February 2025 – January 2028
- AMS Committee on the Profession Member at Large. February 2025 – January 2028
- MAA MathFest Invited Address Committee Member. (Committee Chair July 2024 – June 2025). July 2024 – August 2026
- ICERM Education Advisory Board Member. July 2023 – June 2026
- AWM Social Media Committee Member. February 2024 – January 2026
- SIAM Student Paper Prize Selection Committee Member. Spring – Summer 2025
- Mathematical Congress of the Americas (MCA) Travel Grants Selection Committee Member. September 2024 – August 2025
- Nominating Committee member for SIAM Activity Group: Mathematical Aspects of Materials Science. Fall 2024
- Member of the hiring committee for a full-time faculty position in Numerical Methods and Applications, Department of Mathematics, University of Buenos Aires. Spring 2024
- SLMath May 12 Celebration of Women in Mathematics Organizing Committee Member. Dec. 2021 – May 2024
- SIAM Representative for the Frank and Brennie Morgan Prize Selection Committee Member (Committee Chair January 2023 – January 2024). February 2021– January 2024
- AWM Student Chapters Committee Member (Committee Chair Sept. 2022-Jan. 2024). Aug. 2017 – Jan. 2024
- Banff International Research Station (BIRS) proposal's EDI merit evaluator. 2021, 2023
- Reviewer for the National Academy of Sciences (NAS) Scientists and Engineers in Exile or Displaced (SEED) Ukraine program. April 2023
- SIAM Education Committee Member. January 2020 – December 2022
- SHI Broader Engagement Program Organizing Committee Member, SIAM MDS and CSE. Since March 2022
- Research Project Evaluator for the Agencia Nacional de Promoción de la Investigación, el Desarrollo Tecnológico y la Innovación de la República Argentina. 2022
- Nominating Committee member for SIAM Activity Groups: Mathematical Aspects of Materials Science and Applied Mathematics Education. Summer 2022
- AWM 50th Anniversary Committee Member. August 2019 – January 2022
- AWM SIAM Committee Member. March 2018 – January 2022
- SHI Broader Engagement Program Organizing Committee Member, SIAM CSE 21. March 2020 – March 2021
- AWM Graduate Poster Organizer, Virtual SIAM Annual Meeting. 2020-2021
- NSF panel reviewer. 2015, 2017-2021
- Panelist, Tufts Math Department Alumni/ae Panel for REU students. July 22, 2021
- Panelist, Early-Career Panel at SIAM CSE. March 2, 2021
- Research Project Evaluator for the Agencia Nacional de Promoción Científica y Tecnológica de la República Argentina. 2019
- MAA Project NExT Mentoring Facilitator. May 2018 - July 2019
- AWM Graduate Poster Organizer, SIAM CSE, Spokane, WA. 2019

- Program Committee Member, Midstates Conference for Undergraduate Research in Computer Science and Mathematics, DePauw University, Greencastle, IN. Fall 2017
- AWM Graduate Poster Competition Judging Coordinator, SIAM Annual, Pittsburgh, PA. 2017
- SIAM Diversity Advisory Committee Member. January 2014 – December 2016
- SIAM Travel Award Committee Member, International Congress on Industrial and Applied Mathematics (ICIAM), Beijing, China. 2015
- Program Committee Member, Midstates Conference for Undergraduate Research in Computer Science and Mathematics, The College of Wooster, Wooster, OH. Fall 2014
- Judge, SACNAS Student Poster Session, Los Angeles, CA. October 18, 2014
- Judge, MAA Undergraduate Student Poster Session, JMM, Baltimore, MD. January 17, 2014
- Program Committee Member, Midstates Conference for Undergraduate Research in Computer Science and Mathematics, Ohio Wesleyan University, Delaware, OH. Fall 2013
- Judge, Undergraduate Research Paper Presentation Session, MAA MathFest. August 2, 2013
- Judge, Doris S. Perpall SURF Speaking Competition at Caltech. October 16, 2010

Editorial Work

- Editor for Involve – a journal of Mathematics. Since August 2025
- Associate Editor for Applied Mathematics for Modern Challenges (AMMC). Since October 2022
- Managing Editor for the Journal Electronic Transactions on Numerical Analysis (ETNA). Since April 2014
- Guest Editor of the 2026 special collection in La Matematica: "Harmonic analysis and applications: a collection of articles in Honor of Ingrid Daubechies' 70th birthday," with E. King and S. Villar.
- Guest Editors of the July 2026 issue of *MRS Bulletin* on "Mathematical Solutions to Materials Problems," with A. Braun and W. C. Carter.
- Editor of the AWM Springer Series Volume "Research in Mathematics of Materials Science," with M. Lewicka, L. Scardia, and M. Schlomerkemper, published in September 2022.

Conference Organization

- AMS Fall Western Sectional Meeting, ASU, Tempe, AZ, November 7-8, 2026. Local organizer with Donatella Danielli, Jonathan Montaño, and Julien Paupert.
- SIAM Conference on Computational Science and Engineering (CSE25), Fort Worth, TX, March 2-7, 2025. Organizing Committee member.
- First Arizona Women's Symposium in Mathematics (AWSiM), Embry-Riddle Aeronautical University, Preston, AZ, November 5-6, 2022. Organizing Committee member.
- SIAM Conference on Applied Mathematics Education (ED20), Philadelphia, PA, July 29 - August 1, 2020. Organizing Committee member. Canceled due to the COVID-19 pandemic.
- 2019 MAA Ohio Section Spring Meeting, The University of Akron, Akron, OH, April 5-6, 2019. Local organizer with Laurie Dunlap and Katie Cerrone.

Workshop and Special Program Organization

- CIMPA School in Numerical Analysis and PDEs with G. Acosta, S. Bartels, G. Armentano, B. Ayuso, J. P. Borthagaray, and A Lombardi, Santa Fe and Buenos Aires, Argentina, July 20-31, 2026.
- Collaborative Workshop in Randomized Numerical Linear Algebra with J, Haddock, A. Ma, and D. Needell. Institute for Pure and Applied Mathematics (IPAM), Los Angeles, CA, August 11-14, 2025.
- EaGR: Early Graduate Research in Applied Mathematics with E. T. Camacho, K. Cook, A. Prieto Langarica, and N. Rodriguez., American Institute of Mathematics (AIM), June 23-27, 2025.
- Practicum for Undergraduate MAthematicians (PUMA) in Inverse Problems and Data Assimilation with R. Baptista. Institute for Pure and Applied Mathematics (IPAM), Los Angeles, CA, November 23-24, 2024.
- Applied Mathematics skills Improvement for Graduate studies Advancement (AMIGAs) with E. T. Camacho, K. Cook, A. Prieto Langarica, and N. Rodriguez. Institute for Pure and Applied Mathematics (IPAM), Los Angeles, CA, July 10-14, 2023.
- AWM Workshop in Mathematics of Materials with H. Nelson, during the *Second Joint Meeting of CAIMS & SIAM*, July 8 - 10, 2020. Run virtually.
- Women in Mathematics of Materials Workshop with H. A.H. Shehadeh and P. Radu. University of Michigan's Center for Applied and Interdisciplinary Mathematics (MCAIM), Ann Arbor, MI, May 14-18, 2018.

Minisymposia and Special Sessions Organization

1. Theory, Computation, and Applications of Electrical Impedance Tomography with J. Mueller, *SIAM Conference on Imaging Science*, Salt Lake City, UT, November 16-19, 2026.
2. Research Highlights from the Southwest Section of SIAM with D. Dunlavy, T. Sanchez-Vinuez, and F. Marazzato. *SIAM Annual Meeting* (AN26), Cleveland, OH, July 6-10, 2026.
3. Bayesian Inverse Problems: Methods and Applications with N. Yang, *SIAM Conference on Uncertainty Quantification* (UQ26), Minneapolis, MN, March 22-25, 2026.
4. Recent Advances in Modelling and Numerical Methods for Inverse Problems with R. Ceja Ayala, *SIAM Conference on Computational Sciences and Engineering (CSE25)*, Fort Worth, TX, March 3-7, 2025.
5. Fostering Diverse Perspectives Through Applied Mathematics in Multidisciplinary Research with R. Ceja Ayala, SACNAS National Diversity in STEM (NDiSTEM), Phoenix, AZ, October 31-November 2, 2024.
6. Imaging Problems in Industry: Recent Advances in Modeling and Numerical Methods with S. Breckling, *SIAM Conference on Imaging Science*, Atlanta, GA, May 28-31, 2024.
7. Inverse Problems and Imaging: A graduate student session with J. Mueller, *SIAM Conference on Imaging Science*, Atlanta, GA, May 28-31, 2024.
8. Recent Advances in Modelling and Numerical Methods for Inverse Problems with M. Ellis and V. Uribe, *SIAM Conference on Applied Linear Algebra*, Paris, France, May 13-17, 2024.
9. Optimal and Efficient Algorithms for Inverse Problems with R. Renaut, *International Congress on Industrial and Applied Mathematics (ICIAM)*, Tokyo, Japan, August 20-25, 2023.
10. Recent Advances in Inverse Problems for Computational Imaging with W. Di and S. Gazzola, *SIAM Conference on Computational Science and Engineering,* Amsterdam, The Netherlands, February 26, March 3, 2023.
11. Inverse Problems in Industry: Recent Advances in Modelling and Numerical Methods with S. Breckling, *SIAM Conference on Mathematics of Data Science*, San Diego, CA, September 26-30, 2022.
12. Women in the Mathematics of Materials: Recent Advances in Modelling and Numerical Methods with N. Sherman, *SIAM Annual Meeting*, Pittsburgh, PA, July 11-15, 2022.
13. Recent Advancements in Inverse Problems and Imaging, with M. Pasha, Special Session, *AWM Research Symposium 2022*, IMA, Minneapolis, MN, June 16-19, 2022.
14. Recent Advancements in the Mathematics of Materials, with S. Jimenez Bolanos, Special Session, *AWM Research Symposium 2022*, IMA, Minneapolis, MN, June 16-19, 2022.
15. Inverse Problems and Applications, with M. Rajngewerc and M. I. Troparevsky. *Virtual Mathematical Congress of the Americas*, Buenos Aires, Argentina, July 19-24, 2021.
16. Variational Models: Theory, Computations, and Applications to Materials with H. Nelson, *Virtual SIAM Conference on Mathematical Aspects of Materials Science*, Bilbao, Spain, May 17-28, 2021.
17. Applications of Linear Algebra to Inverse Problems, with M. Pasha. *SIAM Conference on Applied Linear Algebra*, New Orleans, LA, May 17-21, 2021.
18. Computational Methods in Inverse Problems, with S. Ahmad, J. Mueller, and M. Pasha. *Virtual SIAM Conference on Computational Science and Engineering*, Fort Worth, TX, March 1-5, 2021.
19. Regularization Methods: Parameter Selection, Projections, and Sampling Approaches, with R. Renaut, *SIAM Conference on Imaging Science*, July 6-10, 2020. Run virtually.
20. Modeling the Mechanics of 2D Materials with P. Cazeaux *International Conference on Industrial and Applied Mathematics*, Valencia, Spain, July 15-19, 2019.
21. Machine Learning for Materials with K. Saleme. *International Conference on Industrial and Applied Mathematics*, Valencia, Spain, July 15-19, 2019.
22. Women in Math of Materials with H. A.H. Shehadeh, Invited Session, *AWM Research Symposium 2019*, Rice University, Houston, TX, April 6-7, 2019.
23. Data Science and Analytics in Industry. *SIAM Conference on Computational Science and Engineering*, Spokane, WA, Feb 25 - March 1, 2019.
24. Best Practices in Promoting Diversity and Inclusiveness in and Outside the Applied Mathematics Classroom with M. Shott. *SIAM Conference on Applied Mathematics Education*, Portland, OR, July 9-11, 2018.
25. Modeling and Simulation of Nanostructures and 2D Materials with P. Wilber. *SIAM Annual Meeting*, Pittsburgh, PA, July 10-14, 2017.
26. Recent Advances in Image Classification and Recognition, *SIAM Conference on Imaging Science*, Albuquerque, NM, May 23-26, 2016.

27. Upscaling Models of Crystalline Structures: Analysis and Simulation, with H. A.H. Shehadeh, *SIAM Conference on Mathematical Aspects of Materials Science*, Philadelphia, PA, May 8-12, 2016.
28. Advances in Numerical Linear Algebra for Imaging with J. Chung, *SIAM Conference on Imaging Science,* Hong Kong, May 12-14, 2014.
29. Mathematical Modeling of Dislocations in Crystalline Solids with D. Golovaty, *SIAM Conference on Mathematical Aspects of Materials Science*, Philadelphia, PA, June 9-12, 2013.
30. Atomistic/Continuum Multiscale Methods of Solids with P. Lin, M. Luskin, C. Ortner, and M. Ortiz, *International Conference on Industrial and Applied Mathematics*, Vancouver, BC, Canada, July 18-22, 2011. ***Received SIAM Postdoctoral Travel Award***
31. Inverse Problems in Industrial Applications with J. Chung, *SIAM Conference on Computational Science and Engineering*, Miami, FL, March 2-6, 2009. ***Received SIAM Student Travel Award and Tufts GSAS Travel Award***

Panel Organization

- AWM Panel: Inspiring Women in Mathematics with G. Benkart, M. Luca, and L. Rose, *MathFest*, August 4-7, 2021.
- Independent study courses with W. Abram, D. Moseley, and C. Wright, Project NExT*, MathFest*, Portland, OR, August 6-9, 2014.
- Math-related service activities and outreach with N. Reff, D. Roberts, and L. Ziegelmeier, Project NExT, *Joint Mathematics Meetings*, Baltimore, MD, January 15-18, 2014.

UNIVERSITY AND DEPARTMENTAL SERVICE

Arizona State University

Graduate College

Enrichment Fellowship Faculty Review Committee Member. Spring 2024
Completion Fellowship Faculty Review Committee Member. Spring 2023-2024

The College of Liberal Arts and Sciences

Natural Sciences Dean Search Committee Member. Fall 2024

School of Mathematical and Statistical Sciences

- Advisor, SIAM Student Chapter. Fall 2020 – Present
- Graduate Committee Member. Fall 2024 – Spring 2025
- Chair of the Hiring Committee for Presidential Postdoc. Fall 2024
- Applied and Computational Math Seminar Organizer. Fall 2022 – Spring 2024
- DoMSS (former RTG) Seminar Co-organizer. Fall 2021 – Spring 2024
- Presidential Postdoc Search Committee Chair. Fall 2023-Spring 2024
- Postdoc Search Committee Chair. Fall 2023-Spring 2024
- Postdoc Search Committee Member. Fall 2022-Spring 2023
- Tenure-Track Hiring Committee Member. Fall 2021-Spring 2022

The University of Akron

- Faculty Research Committee Member. Fall 2018 – Spring 2019
- Faculty Senate Member. Fall 2018 – Spring 2019
- Advisor, SIAM Student Chapter, Department of Mathematics. Spring 2015 – Spring 2019
- Advisor, AWM Student Chapter, Department of Mathematics. Fall 2013 – Spring 2019
- Outreach Committee Member, Department of Mathematics. Spring 2013 – Spring 2019
- Tenure Track Search Committee Member, Department of Mathematics. Spring 2018
- Chair Review Committee Member, Department of Mathematics. Spring 2016
- Invited Panelist, Building a Community of Women Leaders in BCAS. April 24, 2013

California Institute of Technology
- Co-mentor, Summer Undergraduate Research Fellowship Program. Summer 2010, 2011
- Co-mentor Advisory Council Member, Student Faculty Programs (SFP). Summer 2010, 2011

Tufts University
- President and Founder, SIAM Student Chapter. November 2004 – August 2006
- Co-President, Math Club. February 2004 – March 2006

OUTREACH

- Mentor for The National Alliance for Doctoral Studies in the Mathematical Sciences (Math Alliance), a community of math sciences faculty and students whose main goal is to increase the number of doctoral degrees in the mathematical sciences among groups traditionally underrepresented in those fields. Joint in July 2017.
- Mentor for the AWM Mentoring Network Program. Joint in July 2014.
- Invited Speaker, Club Athena at BASIS Peoria, November 6, 2025.
- Invited Speaker, MATES PARA TODES. Gave the talk "Reimaginando el mundo a través del algebra lineal" in Spanish, Department of Mathematics, University of Colorado – Boulder, November 2, 2023.
- Invited Panelist, Diversity Retention, and Mentoring Panel as SIAM CSE 23, February 28, 2023.
- 2022 MATCH Fellow. MATCH is a semester-long program, directed by AIM and sponsored by MAA Tensor SUMMA, that pairs mathematicians interested in K-12 outreach with socioeconomically disadvantaged Title I middle school classrooms. https://mathcommunities.org/match/
- Invited Speaker, virtual event organized by Fundación Panameña para la Promoción de las Matemáticas (FUNDAPROMAT). Gave the talk "Imágenes, Colores y Matrices" (Images, Colors, and Matrices) in Spanish for all ages. November 3, 2022. https://fundapromat.org/?lang=en
- Invited Speaker, I gave the talk "The Matrix Revolution: Data, Images, and Beyond" for a broad audience as part of the Math Encounters Series, National Museum of Mathematics (MoMath) , New York, NY, October 12, 2022. https://momath.org/civicrm/?page=CiviCRM&q=civicrm%2Fevent%2Finfo&id=8646&reset=1
- Invited Panelist, Virtual Graduate School Panel organized by REU at Youngstown State University, May 31, 2022.
- Invited Panelist, Virtual Tufts Alumni/ae Panel as part of the Visiting and Early Scholars' Experiences in Mathematics Research Experiences for Undergraduates (VERSEIM-REU) at Tufts University, July 22, 2021.
- Invited Speaker, I gave the talk as part of the ASU Joaquin Bustoz Math-Science Honors Program (JBMSHP), a summer residential math program for high school students who are first-generation college bound, underrepresented in STEM, or come from low socioeconomic backgrounds, June 13, 2022.
- Invited Speaker, I gave a talk to ASU Prep Digital students as part of the Hidden Mathematics in Different Professions event, April 2, 2022.
- Invited Speaker, I gave two 30-minute presentations to students from the Montebello High School (Montebello, CA) as part of the GoSTEM's Virtual Latino College and STEM Fair organized by Georgia Tech, March 18, 2021.
- Panelist, "I am a Mathematician" Virtual Session, Million STEM Organization, March 8, 2021.
- Panelist, Virtual Career Panel organized by the AWM Student Chapter at UC Riverside, November 10, 2020.
- Speaker, "The Impact of Mathematics in the World Around Us", STEAM Day, Phoenix College, November 10, 2020.
- Invited Speaker, "Encuentro Virtual con Matemáticos Sobresalientes" organized by Fundación Panameña para la Promoción de las Matemáticas (FUNDAPROMAT). Gave the talk "Las matemáticas de los colores" (The Mathematics of the Colors) in Spanish for all ages. September 11, 2020. https://fundapromat.org/?lang=en
- Volunteer, ASU Open Door. Participated in the Math Research Room where I presented a poster about my research projects. February 25, 2020.
- Volunteer, Skype A Scientist, a program that matches scientists with K-12 classrooms to have a video chat. I have video-chatted with kindergarten students in Lubbock, TX on October 16, 2019, and with 4th grade students in Jerome, ID on November 6, 2019.
- Invited Speaker, Girls in STEM Annual Conference, which is a conference to encourage young women who are sophomore or junior in high school to consider a STEM career, Kent State University – Trumbull, OH, April 12, 2019.

- Invited Speaker, Hispanic Heritage Month Celebration, Chaney High School, Youngstown, OH, September 28, 2018.
- Invited Speaker, *"My Journey as an Applied Mathematician"*, Hispanic Heritage Month Lecture Series, Department of Mathematics and Statistics, Youngstown State University, Youngstown, OH, September 21, 2018.
- Co-organizer, Women in Mathematics of Materials Networking Luncheon, *SIAM Conference on Mathematical Aspects of Materials Science*, Portland, OR, July 11, 2018.
- Invited Speaker for the Speaker Series "Face to Face - Redefining the Expected", which was part of Rethinking Race. Dr. Rouzbeh Amini and I lead a discussion about redefining society's expectations of people based on demographic intersections such as race, religion/faith, socioeconomic status, family structure etc., The University of Akron, Akron, OH, February 7, 2018.
- Volunteer, Code Girl Day, a half day program for middle school girls, The University of Akron, Akron, OH, December 7, 2017.
- Invited Speaker, *"Math and Image Processing",* induction ceremony for the mathematics honors society Mu Alpha Theta at St. Vincent - St. Mary High School, Akron, OH, February 22, 2017.
- Judge, AWM Essay Contest: Biographies of Contemporary Women in Mathematics, 2012, 2013, 2014, 2016, 2017.
- Judge, Ada Lovelace Day Poster Competition, The University of Akron, Akron, OH, October 18, 2016.
- Judge, AWM Poster Competition, *SIAM Annual Meeting*, Boston, MA, July 11-15, 2016.
- Co-organizer, Women in Mathematics of Materials Networking Luncheon, *SIAM Conference on Mathematical Aspects of Materials Science*, Philadelphia, PA, May 9, 2016.
- Invited Speaker, *"From Argentina to Akron and Everything in Between"*, Hispanic Organization Leading Akron (H.O.L.A.) Weekly Meeting, The University of Akron, Akron, OH, November 19, 2015.
- Judge, Ada Lovelace Day Poster Competition, The University of Akron, Akron, OH, October 13, 2015.
- Invited Speaker, "*Deblurring Images with Mathematical Models*", Akron Physics Club, Akron, OH, September 20, 2014.
- Volunteer, Kids' Career Day, a half day program organized by Women in Engineering at UA, that is designed to involve children in interactive activities related to occupations in engineering, science, technology, and math. The University of Akron, Akron, OH, March 1, 2014.
- Judge, AWM Poster Competition, *Joint Mathematics Meetings*, Baltimore, MD, January 15-18, 2014.
- Invited Speaker, *"My Journey Through Applied Mathematics (so far!)"*, Hispanic Heritage Month Lecture Series, Department of Mathematics and Statistics, Youngstown State University, Youngstown, OH, September 20, 2013.
- Math Tutor, Organización Cívica y Cultural Hispana Americana (OCCHA), a non-profit organization whose mission is to help the Spanish-speaking community in the Youngstown area, Boardman, OH, Fall 2013.
- Mentor, Women Mentoring Women Program at Caltech. September 2009 – August 2012
- Judge, Intel International Science and Engineering Fair, an international science competition for students in grades 9-12, Los Angeles, CA, May 8-13, 2011.
- Board Member, The Somerville Mathematics Fund, a community organization that provides scholarships and math enrichment to the Somerville Community, Somerville, MA, May 2005 – June 2009.
- Volunteer, Scrapheap Showdown, a competition and fundraiser for the Somerville Mathematics Fund, where teams of three students have to solve a creative engineering problem in a single afternoon using salvage materials provided at the site of the competition, Medford, MA, 2006 and 2008.
- Volunteer, Family Math Night, a community event that consisted of math games and activities for middle school students and their families hold at the East Somerville Community School, Somerville, MA, April 9, 2007.
- Invited Speaker, *"A Summer Experience at The MathWorks"*, a presentation for Computer Science, Engineering, and Mathematics Scholars (CSEMS) at Tufts University, Medford, MA, November 8, 2006.
- Volunteer, KEYs - Keys to empowering youths, a motivational program for 11-13 year old girls to participate in workshops held periodically throughout the year at MIT, Cambridge, MA, 2002.

MEMBERSHIPS

- International Linear Algebra Society (ILAS) Since 2026
- Union Matematica Argentina (UMA) Since 2024
- National Association of Mathematicians (NAM) Since 2020
- Mathematical Association of America (MAA) Since 2013
- American Mathematical Society (AMS) Since 2003
- Association for Women in Mathematics (AWM) Since 2003
- Society of Industrial and Applied Mathematics (SIAM) Since 2003

  Activity Groups: Data Science, Computational Science and Engineering, Imaging Science, Linear Algebra, Materials Science, Applied Mathematics Education, and Equity, Diversity, and Inclusion.