KRISHNA GARIKIPATI

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Research and Academic Profile

My research is in **computational science** and **scientific machine learning**, with foundations in applied mathematics, numerical methods and scientific computing. In these areas I have made fundamental contributions to **system identification**, **physics discovery**, **machine learning solvers for partial differential equations**, and **machine learning for scale bridging**. Most recently my group has been working on **foundation AI models for physics**. My computational and scientific machine learning research has applications in biophysics, computational biology and materials physics. Of specific interest to me are patterning and morphogenesis in developmental biology, cellular biophysics, soft matter and mechano-chemical phase transformations in materials.

I *directed the Michigan Institute for Computational Discovery & Engineering (MICDE)*, at University of Michigan between 2016 and 2022, stepping down in January, 2023. MICDE is the focus of all aspects of computational science and engineering at the University of Michigan. At MICDE, we defined new paradigms of research in computational science and brings them to fruition. Founded in 2013, it has over 160 affiliated faculty from 38 departments in ten schools and colleges at the University. MICDE incorporates three research centers and has secured over $100M in external funding over the past six years. The Institute operates a PhD in Scientific Computing with over 150 students from across the University, as well as two other academic programs. Additionally, MICDE initiates, and catalyzes research in computational science by internal research grants and supports student fellowships.

I teach a range of classes in computational science, scientific machine learning, mechanics and materials in traditional and flipped-classroom settings. My forward-looking teaching methods extend to ***massively open online classes (MOOCs) and two series of open-access video lectures***, which have commanded well over a million views on YouTube, Coursera and edX combined. They also appear on the Ansys Learning Hub and Ansys Innovation Courses platforms.

Between 2013 and 2023, I served as ***faculty advisor to the Society of Women Engineers (SWE)***, with over 350 members at University of Michigan. In this role I have guided their engagement with, and outreach to, communities within the University, in Ann Arbor, the State of Michigan, the US and internationally, in India and Africa.

Education

Ph.D., Stanford University, 1996 (Aeronautics & Astronautics)
M.S., Stanford University, 1992 (Aeronautics & Astronautics)
B. Tech., Indian Institute of Technology, Bombay, 1991 (Aeronautical Engineering)

Academic Appointments at University of Southern California

Professor of Aerospace and Mechanical Engineering: 1/2024-present

Academic Appointments at University of Michigan

Professor of Mechanical Engineering, and Mathematics: 9/2012-12/2023
Associate Professor of Mechanical Engineering: 9/2006-8/2012
Assistant Professor of Mechanical Engineering: 1/2000-8/2006
Director, Michigan Institute for Computational Discovery & Engineering (MICDE): 7/2016-12/2022
Associate Director for Research, MICDE: 9/2014-6/2016

Other Academic Appointments

Visiting Scholar at the Center for Computational Biology, Flatiron Institute, Simons Foundation, New York City since 9/2020
Life Member, Clare Hall, University of Cambridge since 1/2010

Honors and Awards

2025 Oden Medal in Computational Science, US Association for Computational Mechanics
Fellow of the Society of Engineering Science since 10/2024
Fellow of the International Association for Computational Mechanics since 7/2022
2022 James Knowles Lecturer, California Institute of Technology
Fellow of the US Association for Computational Mechanics since 7/2019
Alexander von Humboldt Research Fellowship: 5/2005-8/2006
Presidential Early Career Award for Scientists and Engineers, 2004
Department of Energy Early Career Award for Scientists and Engineers, 2004

Editorships, Executive Committees and Advisory Boards

Communicating Editor: Journal of Nonlinear Science
Editorial Board Member: Computer Methods in Applied Mechanics and Engineering
Editorial Board Member: Computational Mechanics
Editorial Board Member: Brain Multiphysics
Editorial Board Member: Engineering with Computers

Editorial Board Member: Scientific Reports
Editorial Board Member: Journal of Engineering Mechanics
Advisory Board Member: Glasgow Computational Engineering Centre, University of Glasgow
Academic Editor: PLOS ONE 2016-2023
Executive Committee Member: US Association for Computational Mechanics, 7/2014-7/2018
Associate Editor: Journal of Applied Mechanics, 7/2007-7/2013

Books

1. "Data-driven modelling and scientific machine learning in continuum physics", **K. Garikipati.** Springer Nature, 2004.
2. "IUTAM Symposium on Cellular, Molecular and Tissue Mechanics", Proceedings of the IUTAM Symposium held at Woods Hole, Massachusetts, July 18-21, 2008, **K. Garikipati**, E.M. Arruda Eds. Springer, 2009.

Papers

1. "Partial differential equation-based inference of migration and proliferation mechanisms in cancer cell populations", P.C. Kinnunen, S. Srivastava, Z. Wang, K.K.Y. Ho, B.A. Humphries, S. Chen, J.J. Linderman, G.D. Luker, K.E. Luker, **K. Garikipati**. *PLoS Computational Biology*, Vol 21(10), e1013607, 2025. arXiv:2302.09445 [q-bio.CB]
2. "Physics- and data-driven active learning of neural network representations for free energy density functions of materials from first principles", J. Holber, **K. Garikipati**. *Computer Methods in Applied Mechanics and Engineering*, Vol 448, Part A, 118434, 2026. arXiv:2503.07619[physics]
3. "AI-University: An LLM-based platform for instructional alignment to scientific classrooms", M. Faghih Shojaei, R. Gulati, B.A. Jasperson, S. Wang, S. Cimolato, D. Cao, W. Neiswanger, **K. Garikipati**. Under review. arXiv:2504.08846[cs.CY].
4. "Inference of phase field fracture models", E. Livingston, S. Srivastava, J. Holber, H.M. Mourad, **K. Garikipati**. arXiv:2504.17165[cond-mat.mtrl-sci]."Physics- and data-driven active learning of neural network representations for free energy functions of materials from statistical mechanics", J. Holber, **K. Garikipati**. arXiv:2503.07619[physics].
5. "A continuum, computational study of morphogenesis in lithium intermetallic interfaces", M. Faghih Shojaei, R. Gulati, **K. Garikipati**. *Journal of the Mechanics and Physics of Solids*, Vol 200, 106073, 2025. arXiv:2410.08357[cond-mat.mtrl-sci].
6. "A phase-field fracture formulation for generalized standard materials: The interplay between thermomechanics and damage" L. Svolos, Q-T. Tran, I.D. Boureima, V. Anghel, **K. Garikipati**, H. Mourad. *Journal of the Mechanics and Physics of Solids*, Vol 201, 106154, 2025.
7. "A multi-physics model of flow from coronary angiography: Insights into microvascular function", H. Yang, J. Zhang, I. Assi, B.K. Nallamothu, **K. Garikipati**, C.A. Figueroa. Under review. arXiv:2412.04798[cs.CE].

8. “Patterning and folding of intestinal villi by active mesenchymal dewetting”, T.R. Huycke, T.J. Hakkinen, H. Miyazaki, V. Srivastava, E. Barruet, C.S. McGinnis, A. Kalantari, J. Cornwall-Scoones, D. Vaka, Q. Zhu, H. Jo, R. Oria, V.M. Weaver, W.F. DeGrado, M. Thomson, **K. Garikipati**, D. Boffelli, O.D. Klein, Z.J. Gartner. *Cell,* Vol 187, 3072-3089, 2024. doi.org/10.1016/j.cell.2024.04.039
9. “Computing whole embryo strain maps during gastrulation”, D. Denberg, X. Zhnag, T. Stern, E. Wieschaus, **K. Garikipati**, S.Y. Shvartsman. *Biophysical Journal*, Vol 123, 3911-3922, 2024.
10. “Attention-based Multi-fidelity Machine Learning Model for Computational Fractional Flow Reserve Assessments”, H. Yang, C.A. Figueroa, **K. Garikipati**. *Computer Methods in Applied Mechanics and Engineering*, Vol 432, Part A, 117338. arXiv:2311.11397 [cs.CE].
11. “Integrating inverse reinforcement learning into data-driven mechanistic computational models: a novel paradigm to decode cancer cell heterogeneity”, P.C. Kinnunen, K.K.Y. Ho, S. Srivastava, C. Huang, W. Shen, K. Garikipati, G.D. Luker, N. Banovic, X. Huan, J.J. Linderman, K.E. Luker. *Frontiers in Systems Biology,* Vol 4, 2024.
12. “Pattern formation in dense populations studied by inference of nonlinear diffusion-reaction mechanisms”, S. Srivastava, **K. Garikipati**. *International Journal for Numerical Methods in Engineering,* Vol 125, e7475, 2024. arXiv:2311.04232 [q-bio.QM].
13. “FP-IRL: Fokker-Planck-based Inverse Reinforcement Learning - A Physics-Constrained Approach to Markov Decision Processes”, C. Huang, S. Srivastava, X. Huan, **K. Garikipati**. Under review. arXiv:2306.10407 [cs.LG].
14. “A treatment of particle-electrolyte sharp interface fracture in solid-state batteries with multi-field discontinuities”, X. Zhang, T. Gupta, Z. Wang, A. Trewartha, A. Anapolsky, **K. Garikipati**, *Journal of the Mechanics and Physics of Solids*, Vol 182, 105490, 2024.
15. “Bridging scales with machine learning: From first principles statistical mechanics to continuum phase field computations to study order-disorder transitions in Li_xCoO_2”, M.F. Shojaei, J. Holber, S. Das, G.H. Teichert, T. Mueller, L. Hung, V. Gavini, **K. Garikipati**. *Journal of the Mechanics and Physics of Solids,* Vol 190, 105726, 2024. arXiv:2302.08991 [cs.CE]
16. “Ferroelastic toughening: can it solve the mechanics challenges of solid electrolytes?”, A. Van der Ven, R. McMeeking, R. Clément, **K. Garikipati**. *Current Opinion in Solid State and Materials Science*, Vol 27, Issue 2, 2023, 101056
17. “Label-free learning of elliptic partial differential equation solvers with generalizability across boundary value problems”, X. Zhang, **K. Garikipati**. Computer Methods in Applied Mechanics and Engineering, Special Issue in honor of TJR Hughes, Vol 417, 116214, 2023.
18. “High order schemes for gradient flow with respect to a metric”, S. Han, S. Esedoglu, **K. Garikipati**. *Journal of Computational Physics* Vol 494, 2023.
19. “Mechanics of stabilized intercellular bridges”, J. Singh, J.I. Alsous, **K. Garikipati**, S.Y. Shvartsman. *Biophysical Journal*, Vol. 121, 3162-3171, 2022. https://doi.org/10.1016/j.bpj.2022.06.033.

20. “Ogden Material Calibration via Magnetic Resonance Cartography, Parameter Sensitivity, and Variational System Identification”, D.P. Nikolov, S. Srivastava, B.A. Abeid, U.M. Scheven, E.M. Arruda, **K. Garikipati**, J.B. Estrada. *Philosophical Transactions of the Royal Society A, (Themed Issue) The Ogden model of rubber mechanics: Fifty years of impact on nonlinear elasticity*, Vol 380, 2234, 2022, doi:10.1098/rsta.2021.0324.
21. “Oscillatory ERK signaling and morphology determine heterogeneity of breast cancer cell chemotaxis via MEK-ERK and p38-MAPK ppathways”, K.Y.H. Kenneth, S. Srivastava, P.C. Kinnunen, **K. Garikipati**, G.D. Luker, K.E. Luker. *Bioengineering*. *Special Issue on Engineering-inspired Cancer Research*, Vol 10, 269, 2023. doi:10.3390/bioengineering10020269.
22. “Numerical analysis of non-local calculus on finite weighted graphs, with application to reduced-order modelling of dynamical systems”, M. Duschenes, S. Srivastava, **K. Garikipati**. Computer Methods in Applied Mechanics and Engineering, Special Issue in honor of J.T. Oden, in press, 115513, 2022, doi:10.1016/j.cma.2022.115513
23. “mechanoChemML: A software library for machine learning in computational materials physics”, X. Zhang, G.H. Teichert, Z. Wang, S. Srivastava, E. Livingston, J. Holber, M. Faghih Shojaei, A. Sunderarajan, **K. Garikipati**. *Computational Materials Science*, Vol 211, 111493, 2022, doi:10.1016/j.commatsci.
24. “A fourth-order phase field fracture model: Formulation and numerical solution using a continuous/discontinuous Galerkin method”, L. Svolos, H.M. Mourad, G. Manzini, **K. Garikipati**. *Journal of the Mechanics and Physics of Solids,* Vol 165, 104910, 2022, doi:10.1016/j.jmps.2022.104910.
25. “Machine learning in heterogeneous porous materials”, M. D'Elia, H. Deng, C. Fraces, **K. Garikipati**, L. Graham-Brady, A. Howard, G. Karniadakis, V. Keshavarzzadeh, R.M. Kirby, N. Kutz, C. Li, X. Liu, H. Lu, P. Newell, D. O'Malley, M. Prodanovic, G. Srinivasan, A. Tartakovsky, D.M. Tartakovsky, H. Tchelepi, B. Vazic, H. Viswanathan, H. Yoon, P. Zarzycki. arXiv:2202.04137 [cs.LG]
26. “A heteroencoder architecture for prediction of failure locations in porous metals using variational inference”, W. Bridgman*, X. Zhang*, G.H. Teichert, M. Khalil, K. Garikipati, R Jones. Computer Methods in Applied Mechanics and Engineering, Vol 398, 115236, 2022, doi:10.1016/j.cma.2022.115236.
27. “Reduced order models from computed states of physical systems using non-local calculus on finite weighted graphs”, M. Duschenes, **K. Garikipati**. arXiv:2105.01740 [math.NA]
28. “Li_xCoO_2 phase stability studied by machine learning-enabled scale bridging between electronic structure, statistical mechanics and phase field theories**”**. G.H. Teichert, S. Das, M. Aykol, C. Gopal, V. Gavini, **K. Garikipati**. Under review. arXiv:2104.08318 [cond-mat.mtrl-sci]
29. “Bayesian neural networks for weak solution of PDEs with uncertainty quantification”, X. Zhang, **K. Garikipati**. Under review. arXiv:2101.04879 [cs.CE]
30. “System inference via field inversion for the spatio-temporal progression of infectious

diseases: Studies of COVID-19 in Michigan and Mexico", Z. Wang, M. Carrasco-Teja, X. Zhang, G.H. Teichert, **K. Garikipati**, *Archives of Computational Methods in Engineering*, Vol. 28, 4283-4295, 2021. https://doi.org/10.1007/s11831-021-09643-1

31. "Methodology for sensitivity analysis of homogenized cross-sections to instantaneous and historical lattice conditions with application to AP1000® PWR lattice", D. Price, T. Folk, M. Duschenes, **K. Garikipati**, B. Kochunas, *Energies,* Vol. 14, 3378, 2021. https://doi.org/10.3390/en14123378
32. "Sensitivity of void mediated failure to geometric design features of porous metals", G.H. Teichert, M. Khalil, C. Alleman, **K. Garikipati**, R.E. Jones, *International Journal of Solids and Structures,* Vol. 236-237, 111309, 2022. https://doi.org/10.1016/j.ijsolstr.2021.111309
33. "Biomembranes undergo complex, non-axisymmetric deformations governed by Kirchhoff-Love kinematics and revealed by a three-dimensional computational framework". D. Auddya, X. Zhang, R. Gulati, R. Vasan, **K. Garikipati**, P. Rangamani, S. Rudraraju. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences,* Vol. 477, 20210246, 2021. https://doi.org/10.1098/rspa.2021.0246
34. "The graph theoretic approach for nodal cross section parameterization", B. Kochunas, **K. Garikipati**, M. Duschenes, T. Folk. arXiv:2010.09683 [physics.comp-ph]
35. "CRIMSON: An Open-Source Software Framework for Cardiovascular Integrated Modelling and Simulation", C.J. Arthurs, R. Khlebnikov, A. Melville, M. Marcan, A. Gomez, D. Dillon-Murphy, F. Cuomo, M. Silva Vieira, J. Schollenberger, S. R. Lynch, C. Tossas-Betancourt, K. Iyer, S. Hopper, E. Livingston, P. Youssefi, A. Noorani, S. Ben Ahmed, F. J. H. Nauta, T. M. J. van Bakel, Y. Ahmed, P. A. J. van Bakel, J. Mynard, P. Di Achille, H. Gharahi, K. D. Lau, V. Filonova, M. Aguirre, N. Nama, N. Xiao, S. Baek, **K. Garikipati**, O. Sahni, D. Nordsletten, C. A. Figueroa, *PLoS Computational Biology*, Vol. 17, e1008881, 2021. https://doi.org/10.1371/journal.pcbi.1008881
36. "Inference of deformation mechanisms and constitutive response of soft material surrogates of biological tissue by full-field characterization and data-driven variational system identification", Z. Wang, J.B. Estrada, E.M. Arruda, **K. Garikipati**, Journal of the Mechanics and Physics of Solids, Vol. 153, 104474, 2021. biorxiv.org/content/10.1101/2020.10.13.337964v2
37. "An inverse modelling study on the local volume changes during early growth of the fetal human brain", Z. Wang, B. Martin, J. Johannes Weickenmeier, **K. Garikipati**. *Brain Multiphysics*, Vol. 2, 100023, 2021. doi:10.1016/j.brain.2021.100023
38. "High order, semi-implicit, energy stable schemes for gradient flows", A. Zaitzeff, S. Esedoglu, K. Garikipati. *Journal of Computational Physics,* Vol. 447, 110688, 2021. doi:10.1016/j.jcp.2021.110688. arXiv:2007.13572 [math.NA]
39. System inference for the spatio-temporal evolution of infectious diseases: Michigan in the time of COVID-19, Z. Wang, X. Zhang, G.H. Teichert, M. Carrasco-Teja, **K. Garikipati**, *Computational Mechanics,* Vol. 66, 1177, 2020. doi:10.1007/s00466-020-01894-2
40. "Editorial: Special Issue on Uncertainty Quantification, Machine Learning and Data-

driven Modeling of Biological Systems", A.B. Tepole, D. Nordsletten, **K. Garikipati**, E. Kuhl, *Computer Methods in Applied Mechanics and Engineering*, Vol. 362, 112832, 2020. doi.org/10.1016/j.cma.2020.112832

41. "Active learning workflows and integrable deep neural networks for representing the free energy functions of alloys", G.H. Teichert, A.R. Natarajan, A. Van der Ven, **K. Garikipati**, *Computer Methods in Applied Mechanics and Engineering*. Vol 371, 113281, 2020, doi:10.1016/j.cma.2020.113281. arXiv:2002.02305 [cs.LG]
42. "A perspective on regression and Bayesian approaches for system identification of pattern forming dynamics", Z. Wang, B. Wu, **K. Garikipati** and X. Huan, *Theoretical and Applied Mechanics Letters*, Vol 10, 188-194, 2020. doi:10.1016/j.taml.2020.01.028 arXiv:2001.05646 [physics.comp-ph]
43. "Variational system identification of the partial differential equations governing microstructure evolution in materials: Inference over sparse and spatially unrelated data". Z. Wang, X. Huan, K. **Garikipati**, *Computer Methods in Applied Mechanics and Engineering*. Vol 371, 113706, 2021. doi.org/10.1016/j.cma.2021.113706. arXiv:2001.04816 [physics.comp-ph]
44. "Machine learning materials physics: Multi-resolution neural networks learn the free energy and nonlinear elastic response of evolving microstructures", X. Zhang and **K. Garikipati**, *Computer Methods in Applied Mechanics and Engineering*, Vol 372, 113362, 2020, doi:10.1016/j.cma.2020.113362. arXiv:2001.01575 [cs.CE]
45. "Modeling strength and failure variability due to porosity in additively manufactured metals", M. Khalil, G.H. Teichert, C. Alleman, N.M. Heckman, R.E. Jones, **K. Garikipati**, B.L. Boyce, *Computer Methods in Applied Mechanics and Engineering*, Vol 373, 113471, 2021, doi:10.1016/j.cma.2020.113471. arXiv:2001.02058 [cond-mat.mtrl-sci]
46. "Multiscale modeling meets machine learning: What can we learn?" M. Alber, A. Buganza Tepole, W. Cannon, S. De, S. Dura-Bernal, **K. Garikipati**, G. Karniadakis, W.W. Lytton, P. Perdikaris, L. Petzold, E. Kuhl, *Archives of Computational Methods in Engineering, 2020.* doi.org/10.1007/s11831-020-09405-5. arXiv:1911.11958 [physics.bio-ph]
47. "Integrating machine learning and multiscale modeling: perspectives, challenges, and opportunities in the biological, biomedical, and behavioral sciences", M. Alber, A.B. Tepole, W. Cannon, S. De, S. Dura-Bernal, **K. Garikipati**, G. Karniadakis, W.W. Lytton, P. Perdikaris, L. Petzold, E. Kuhl, *Nature npj Digital Medicine*, Vol 2, Article number 115, 2019. doi.org/10.1038/s41746-019-0193-y. arXiv:1910.01258 [q-bio.QM]
48. "A mechanical model reveals that non-axisymmetric buckling lowers the energy barrier associated with membrane neck constriction", R. Vasan, S. Rudraraju, M. Akamatsu, **K. Garikipati**, P. Rangamani, *Soft Matter,* Vol 16, 784, 2020. doi.org/10.1039/c9sm01494b. arXiv:1906.06443 [physics.bio-ph]
49. "Second order threshold dynamics schemes for two phase motion by mean curvature", A. Zaitzeff, S. Esedoglu, **K. Garikipati**, *Journal of Computational Physics*, Vol 410, 109404, 2020. doi.org/10.1016/j.jcp.2020.109404. arXiv:1911.05110 [math.NA]
50. "Variational extrapolation of implicit schemes for general gradient flows",

A. Zaitzeff, S. Esedoglu, **K. Garikipati**, *SIAM Journal of Numerical Analysis*, Vol 58, 2799, 2020. doi.org/ 10.1137/19M1283963. arXiv:1908.10246 [math.NA]

51. "Machine learning materials physics: Deep neural networks trained on elastic free energy data from martensitic microstructures predict homogenized stress fields with high accuracy", K. Sagiyama, **K. Garikipati**. arXiv:1901.00524 [physics.comp-ph]
52. "The Materials Research Platform: Defining the requirements from user stories", M. Aykol, J.S. Hummelshoj, A. Anapolsky, K. Aoyagi, M.Z. Bazant, T. Bligaard, R.D. Braatz, S. Broderick, D. Cogswell, J. Dagdelen, W. Drisdell, E. Garcia, **K. Garikipati**, V. Gavini, W. Gent, L. Giordano, C.P. Gomes, R. Gomez-Bombarelli, C.B. Gopal, J.M. Gregoire, J.C. Grossman, P. Herring, L. Hung, T.F. Jaramillo, L. King, H-K. Kwon, R. Maekawa, A.M. Minor, J. Montoya, T. Mueller, C. Ophus, K. Rajan, R. Ramprasad, B. Rohr, D. Schweigert, Y. Shao-Horn, Y. Suga, S.K. Suram, V. Viswanathan, J.F. Whitacre, A.P. Willard, O. Wodo, C. Wolverton, B.D. Storey, *Matter*, Vol. 1, 1433-1438, 2019. doi.org/10.1016/j.matt.2019.10.024
53. "A computational framework for the morpho-elastic development of molluskan shells by surface and volume growth", S. Rudraraju, D.E. Moulton, R. Chirat, A. Goriely, **K. Garikipati**, *PLoS Computational Biology*, Vol. 15:e1007213, 2019. doi.org/10.1371/journal.pcbi.1007213. arXiv:1901.00497 [q-bio.QM]
54. "Machine learning materials physics: Integrable deep neural networks enable scale bridging by learning free energy functions", G.H. Teichert, A.R. Natarajan, A. Van der Ven, **K. Garikipati**, *Computer Methods in Applied Mechanics and Engineering*, Vol. 353:201-216, 2019. doi.org/10.1016/j.cma.2019.05.019. arXiv:1901.00081 [cond-mat.mtrl-sci]
55. "Variational system identification of the partial differential equations governing pattern-forming physics: Inference under varying fidelity and noise", Z. Wang, X. Huan, **K. Garikipati**, *Computer Methods in Applied Mechanics and Engineering*, Vol. 356:44-74, 2019. doi.org/10.1016/j.cma.2019.07.007. arXiv:1812.11285 [physics.comp-ph]
56. "A graph theoretic framework for representation, exploration and analysis on computed states of physical systems", R. Banerjee, K. Sagiyama, G.H. Teichert, **K. Garikipati**, *Computer Methods in Applied Mechanics and Engineering*, Vol. 351:501-530, 2019. doi.org/10.1016/j.cma.2019.03.053. arXiv:1811.09753 [physics.comp-ph]
57. "On the Voronoi implicit interface method", A. Zaitzeff, S. Esedoglu, **K. Garikipati**, *SIAM Journal on Scientific Computing*, Vol. 41:A2407-A2429. arXiv:1810.10920 [math.NA]
58. "A diffuse interface framework for modelling the evolution of multi-cell aggregates as a soft packing problem due to growth and division of cells", J. Jiang, S. Rudraraju, **K. Garikipati**, *Bulletin of Mathematical Biology*, Vol. 81:3282-3300, 2019. doi.org/10.1007/s11538-019-00577-1. arXiv:1806.01410 [q-bio.CB]
59. "Machine learning materials physics: Surrogate optimization and multi-fidelity algorithms predict precipitate morphology in an alternative to phase field dynamics", G. Teichert, **K. Garikipati**, *Computer Methods in Applied Mechanics and Engineering*, Vol. 344:666-693, 2019
60. "A multi-physics battery model with particle scale resolution of evolving porosity and

electrolyte flow", Z. Wang, **K. Garikipati**, *Journal of the Electrochemical Society* Vol. 165: A2421-A438, 2018.

61. "PRISMS: An integrated, open-source framework for accelerating predictive structural materials science", L. K. Aagesen, J. F. Adams, J. E. Allison, W. B. Andrews, V. Araullo-Peters, T. Berman, Z. Chen, S. Daly, S. Das, S. DeWitt, S. Ganesan, **K. Garikipati**, V. Gavini, A. Githens, M. Hedstrom, Z. Huang, H. V. Jagadish, J. W. Jones, J. Luce, E. A. Marquis, A. Misra, D. Montiel, P. Motamarri, A. D. Murphy, A. R. Natarajan, S. Panwar, B. Puchala, L. Qi, S. Rudraraju, K. Sagiyama, E. L. S. Solomon, V. Sundararaghavan, G. Tarcea, G. H. Teichert, J. C. Thomas, K. Thornton, A. Van der Ven, Z. Wang, T. Weymouth, C. Yang, *Journal of Materials*, Vol. 70:2298-2314, August 2018.
62. "Unconditionally stable, second-order schemes for gradient-regularized, non-convex, finite-strain elasticity modeling martensitic phase transformations", K. Sagiyama, **K. Garikipati**, *Computer Methods in Applied Mechanics and Engineering* Vol. 338: 597-617, August 2018.
63. "A computational study of the mechanisms of growth-driven folding patterns on shells, with application to the developing brain", S.N. Verner, **K. Garikipati**, *Extreme Mechanics Letters*, Vol. 18: 58-69, 2018.
64. "Intercalation driven porosity effects on the electro-chemo-thermo-mechanical response in continuum models for battery material electrodes", Z. Wang, J. Siegel, **K. Garikipati**, *Journal of the Electrochemical Society*, Vol. 164: A2199-A2212, 2017.
65. "Perspectives on the mathematics of biological patterning and morphogenesis", **K. Garikipati**, *Journal of the Mechanics and Physics of Solids*, Vol. 99: 192-210, 2017.
66. "A variational treatment of material configurations with application to interface motion and microstructural evolution", G. Teichert, S. Rudraraju, **K. Garikipati**, *Journal of the Mechanics and Physics of Solids*, Vol. 99: 338–356, 2017.
67. "A comparison of Redlich-Kister polynomial and cubic spline representations of the chemical potential in phase field computations", G. Teichert, H. Gunda, S. Rudraraju, A. Natarajan, B. Puchala, **K. Garikipati**, A. Van der Ven, *Computational Materials Science*, Vol. 128: 127-139, 2017.
68. "The spatial patterning potential of nonlinear diffusion Comment on 'Phase separation driven by density-dependent movement: A novel mechanism for ecological patterns' by Quan-Xing Liu et al.", P.K. Maini, **K. Garikipati**, *Physics of Life Reviews*, Vol. 19: 128-130, 2016.
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94. "Advances in the numerical treatment of grain-boundary migration: Coupling with mass transport and mechanics", H. Mourad and **K. Garikipati**, *Computer Methods in Applied Mechanics and Engineering*, vol. 196, 595-607, 2006.
95. "Biological remodelling: Stationary energy, configurational change, internal variables and dissipation", **K. Garikipati**, J. E. Olberding, H. Narayanan, E. M. Arruda, K. Grosh and S. Calve, *Journal of the Mechanics and Physics of Solids*, vol. 54,1493-1515, 2006.
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99. "On the convexity of transversely-isotropic chain networks", E. Kuhl, A. Menzel and **K. Garikipati**, *Philosophical Magazine*, vol. 86, 3241-3258, 2006.
100. "A discontinuous Galerkin method for strain gradient-dependent damage: Study of interpolations and convergence", L. Molari, G. N. Wells, **K. Garikipati** and F. Ubertini, *Computer Methods in Applied Mechanics and Engineering*, vol. 195, 1480-1498, 2006.
101. "Remodelling of biological tissue: Mechanically-induced reorientation of a transversely isotropic chain network", E. Kuhl, **K. Garikipati**, E. M. Arruda and K. Grosh, *Journal of the Mechanics and Physics of Solids*, vol. 53,1552-1573, 2005.
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103. "A variational multiscale method to incorporate strain gradients in a phenomenological plasticity model", S. L. Creighton, R. A. Regueiro, **K. Garikipati**, P. A. Klein, E. B. Marin and D. J. Bammann, *Computer Methods in Applied Mechanics and Engineering*, vol. 193, 5453-5475, 2004.
104. "Analysis and numerical simulation of discontinuous displacements modelling fine scale damage in a continuum under mixed-mode loading", **K. Garikipati**, *International Journal for Multiscale Computational Engineering*, vol. 2, 529-555, 2004.
105. "A continuum treatment of growth in biological tissue: Mass transport coupled with mechanics", K. Garikipati, E. M. Arruda, K. Grosh, H. Narayanan and S. Calve, Journal of the Mechanics and Physics of Solids, vol. 52, no. 7, pp 1595-1625, 2004.

106. “Couple stresses in crystalline solids: Origins from plastic slip gradients, dislocation core distortions, and three-body interatomic potentials”, **K. Garikipati**, *Journal of the Mechanics and Physics of Solids*, vol. 51, 1189-1214, 2003.

107. “Variational multiscale methods to embed the macromechanical continuum formulation with fine scale strain gradient theories”, **K. Garikipati**, *International Journal for Numerical Methods in Engineering*, vol. 57, 1283-1298, 2003.

108. “A nonlocal phenomenological anisotropic finite deformation plasticity model accounting for dislocation defects”, R. A. Regueiro, D. J. Bammann, E. B. Marin and **K. Garikipati**, *ASME: Journal of Engineering Materials and Technology*, vol. 124, 380-387, 2002.

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110. “A variational multiscale method to embed micromechanical surface laws in the macromechanical continuum formulation”, **K. Garikipati**, *Computer Modelling in Engineering and Sciences*, vol. 3, 175-184, 2002.

111. “Recent advances in models for thermal oxidation of silicon”, **K. Garikipati** and V. S. Rao, *Journal of Computational Physics*, vol 174, 138-170, 2001.

112. “A lattice-based micromechanical continuum formulation for stress-driven mass transport in polycrystalline solids”, **K. Garikipati**, L. Bassman and M. Deal, *Journal of the Mechanics and Physics of Solids*, vol 49, 1209-1237, 2001.

113. “Modelling and validation of contributions to stress in the shallow trench isolation process sequence”, **K. Garikipati**, V. S. Rao, M. Y. Hao, E. Ibok, I. de Wolf and R. W. Dutton, *Computer Modelling in Engineering and Sciences*, vol 1, 65-83, 2000.

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115. “Embedding micromechanical laws in the continuum formulation --- A multiscale approach applied to discontinuous solutions”, **K. Garikipati** and T. J. R. Hughes, *International Journal for Computational Civil and Structural Engineering*, vol 1, 2000.

116. “A variational multiscale approach to strain localization---Formulation for multidimensional problems”, **K. Garikipati** and T. J. R. Hughes, *Computer Methods in Applied Mechanics and Engineering*, vol 188, 39-60, 2000.

117. “Comprehensive static characterization of vertical electrostatically actuated polysilicon beams”, E.K. Chan, **K. Garikipati**, R.W. Dutton, *IEEE Design & Test of Computers*, vol. 16, 58-65, 1999.

118. “Characterization of contact electromechanics through capacitance-voltage measurements and simulations”, E. K. Chan, **K. Garikipati** and R. W. Dutton, *Journal of Microelectromechanical Systems*, vol 8, 208-217, 1999.

119. “A study of strain localization in a multiple scale framework --- The One-Dimensional Problem”, **K. Garikipati** and T. J. R. Hughes, *Computer Methods in Applied Mechanics and Engineering*, vol 159, pp 193-222, 1998.

120. “An analysis of strong discontinuities in multiplicative finite strain plasticity and their relation with the numerical simulation of strain localization in solids”, F. Armero and **K. Garikipati**, *International Journal of Solids and Structures*, vol 33, 2863-2885, 1996.

Invited Colloquia at Universities, Institutes and National Laboratories

1. “Fokker-Planck inverse reinforcement learning: A physics-constrained approach to Markov decision process models of cell dynamics”, Mechanical Engineering Department Seminar, Michigan Technological University, September 25, 2025.
2. “Fokker-Planck inverse reinforcement learning: A physics-constrained approach to Markov decision process models of cell dynamics”, Quantitative and Cell Biology Department Seminar, University of Southern California, September 18, 2025.
3. “Mechanics and morphogenesis of solid state batteries”, University of California at Los Angeles, February 14, 2025.
4. “Fokker-Planck inverse reinforcement learning: A physics-constrained approach to Markov decision process models of cell dynamics”, Iowa State University, Translation AI Center, November 20, 2024.
5. “A computational treatment of particle-electrolyte interface fracture in solid state batteries with multi-field discontinuities”, University of California at Santa Barbara, Autumn Materials Workshop, September 19, 2024.
6. “A free energy-based framework for scale-bridging in crystalline solids—with some use of machine learning methods”, Center for Integrated Nanotechnologies, Annual Meeting, Santa Fe, September 17, 2024.
7. “Fokker-Planck inverse reinforcement learning: A physics-constrained approach to Markov decision process”, workshop on Knowledge-Guided Machine Learning, University of Minnesota, University of Minnesota, August 7, 2024.
8. “Fokker-Planck inverse reinforcement learning: A physics-constrained approach to Markov decision process”, Institute for Mathematical and Statistical Innovation, University of Chicago, Workshop on Data Sciences for Mesoscale and Macroscale Materials Models, May 13-17, 2024.
9. “Inferring the biophysical mechanisms of intercellular interactions”, Massachusetts Institute of Technology, May 2, 2023.
10. “Bayesian neural networks for weak solution of PDEs with uncertainty quantification”, Applied Mathematics Colloquium, University of Arizona, October 20, 2023.
11. “A free energy-based framework for scale bridging in crystalline solids—with some use of machine learning”, Los Alamos National Laboratory, Physics and Theoretical Division, November 3, 2022.
12. “A free energy-based framework for scale bridging in crystalline solids—with some use of machine learning”, Melosh Lecture, Duke University, October 21, 2022.
13. “A free energy-based framework for scale bridging in crystalline solids—with some use of machine learning”, Gordon Research Conference on Batteries, Ventura, California, June 9, 2022.
14. “Bayesian neural networks for weak solution of PDEs with uncertainty quantification”, Universität Aachen, May 17, 2022.
15. “Inferring the biophysical mechanisms of intercellular interactions”, Flatiron Institute, Simons Foundation, May 11, 2022.
16. “A free energy-based framework for scale bridging in crystalline solids—with some use of machine learning”, 2022 James Knowles Lecture, California Institute of Technology, March 14, 2022.
17. “Bayesian neural networks for weak solution of PDEs with uncertainty quantification”, University of Bristol, February 16, 2022.
18. “Active learning workflows and integrable deep neural networks for representing the

free energy functions of alloys", University of Notre Dame, November 9, 2021.

19. "Bayesian neural networks for weak solution of PDEs with uncertainty quantification", Massachusetts Institute of Technology, May 13, 2021.
20. "Active learning workflows and integrable deep neural networks for representing the free energy functions of alloys", Technische Universiteit Delft, May 6, 2021.
21. "An inverse modelling study on the local volume changes during early morphoelastic growth of the fetal human brain", Aerospace Engineering and Engineering Mechanics, University of Texas at Austin, March 25, 2021.
22. "Physics Discovery by Variational System Identification: The Differential Equations of Pattern Formation, and Constitutive Models of Soft Materials", the Oden Institute, University of Texas at Austin, January 19, 2021. "Data-driven physics discovery and scale bridging in materials", Michigan State University, November 9, 2020.
23. "Variational system identification of governing partial differential equations and physics in materials and mechanics", University of Pennsylvania, October 27, 2020
24. "Variational system identification of the partial differential equations governing pattern-forming physics", Technische Universiteit, Delft, May 20, 2020.
25. "Data-driven discovery, scale bridging and reduced-order representation of materials physics", University of California, Santa Barbara, Joint LIMPID-IDEAS^2 Workshop, February 3, 2020.
26. "A graph theoretic perspective for representation, exploration and analysis on computed states of physical systems", University of Glasgow, October 1, 2019.
27. "Mechano-chemical phase transformations: Computational framework, machine learning studies and graph theoretic analysis", University of Southern California, March 6, 2019.
28. "A graph theoretic perspective for representation, exploration and analysis on computed states of physical systems", Stevens Institute, December 10, 2018.
29. "A graph theoretic perspective for representation, exploration and analysis on computed states of physical systems", Sandia National Laboratory, Livermore, December 5, 2018.
30. "Seashell morphogenesis: A computational framework for the three-dimensional evolution of surface and volumetric growth in molluscs", Mechanical Engineering seminar, University of California at Berkeley, October 31, 2018.
31. "Machine learning materials physics: Case studies in predicting precipitate morphology, and hierarchical multiscale modeling", Mechanical Engineering Seminar, University of Illinois at Urbana-Champaign, April 24, 2018.
32. "Perspectives on models of patterning and morphogenesis with applications to developmental biology", Mechanical Engineering Seminar, University of Texas at Austin, April 12, 2018.
33. "Perspectives on models of patterning and morphogenesis with applications to developmental biology", Mathematics Colloquium, University of Pittsburgh, February 22, 2018.
34. "Mechanochemical spinodal decomposition: A phenomenological theory of phase transformation in crystalline solids", Mechanical Engineering Seminar, Carnegie Mellon University, October 13, 2017.
35. "Perspectives on the mathematics of biological patterning and morphogenesis", The Mathematics of Cells and Tissues, Cortona, Italy, August 29, 2017.
36. "Machine learning for computational materials physics: The shapes of precipitates", Duke University, April 29, 2017.
37. "Phase transformations, microstructure and stable branches", Stanford University, April 20, 2017.

38. “Perspectives on the mathematics of biological patterning and morphogenesis”, MechBio Symposium, University of California at San Diego, August 5, 2016.
39. “Energy and the shapes of growing tumors”, University of Texas at Austin, Institute for Computational Engineering and Science, October 16, 2015.
40. “Mechano-chemical solid phase transformations induced by non-convex free energies”, University of California at Santa Barbara, November 24, 2014.
41. “Mechano-chemical phase transformations in solids induced by non-convex free energies”, University of Michigan, Applied and Interdisciplinary Mathematics Seminar, March 28, 2014.
42. “The mechano-chemistry of phase transformations induced by non-convex free energies in solids”, University of Oxford, July 1, 2013.
43. “Hierarchical models of cancer cell motility”, University of Oxford, July 2, 2012.
44. “Hierarchical models of cancer cell motility”, Rensselaer Polytechnic Institute, April 11, 2012.
45. “In silico estimates of the free energy rates in growing tumor spheroids”, University of Oxford, June 22, 2011.
46. “The non-equilibrium thermodynamics of stress fiber-focal adhesion dynamics in contractile cells”, University of Oxford, June 22, 2011.
47. “In silico estimates of the free energy rates in growing tumor spheroids”, University of Colorado, April 20, 2011.
48. “Micromechanics-based mixed-mode crack propagation in laminated fiber-reinforced composites using a variational multiscale method”, Texas A&M University, November 11, 2010.
49. “The non-equilibrium thermodynamics and kinetics of focal adhesion dynamics”, Johns Hopkins University, October 7, 2010.
50. “In silico estimates of the free energy rates in growing tumor spheroids”, Iowa State University, April 20, 2010.
51. “In silico estimates of the free energy rates in growing tumor spheroids”, University of Michigan, Department of Mathematics, Mathematical Biology Seminar, March 19, 2010.
52. “In silico estimates of the free energy rates in growing tumor spheroids”, Texas A&M University, Institute for Applied Mathematics and Computational Science Workshop on Modeling Biological Materials: Soft Tissue and Biologically-inspired Materials, January 27-28, 2010.
53. “A discontinuous Galerkin method for incompatibility-based strain gradient plasticity theories”, Università di Brescia, Italy, October 26, 2009.
54. “In silico estimates of the free energy rates in growing tumor spheroids”, University of Cambridge, October 5, 2009.
55. “The thermodynamics and kinetics of focal adhesion dynamics”, Stanford University, May 28, 2009.
56. “A theoretical study of the thermodynamics and kinetics of focal adhesion dynamics”, Washington University at St. Louis, February 5, 2009.
57. “Mathematical modeling of focal adhesion dynamics”, Universität Heidelberg, September 2, 2008.
58. “The energetics of interactions between stress and point defects (with applications to solid state diffusion)”, University of California at Santa Barbara, October 27, 2008.
59. “A theoretical study of the thermodynamics and kinetics of focal adhesion dynamics”, University of Illinois at Urbana Champaign, April 24, 2008.
60. “A theoretical study of the thermodynamics and kinetics of focal adhesion dynamics”,

University of Pennsylvania, Department of Mechanical Engineering and Applied Mechanics, January 31, 2008.

61. "A theoretical study of the thermodynamics and kinetics of focal adhesion dynamics", Max Planck Institut für Metallforschung, Stuttgart, Germany, September 10, 2007.
62. "Some thermodynamic aspects of biological remodeling", keynote address in the symposium on the Mechanics of Biological and Bio-inspired Materials, Materials Research Society fall 2006 Meeting, Boston, November 27—December 1, 2006.
63. "A Discontinuous Galerkin Method for the Cahn-Hilliard Equation", Université Catholique de Louvain, Louvain la Neueve, Belgium, July 11, 2006.
64. "The Mathematics of Biological Growth", Università di Torino, Torino, Italy, June 25, 2006.
65. "The Mechanics and Mathematics of Growth in Soft Biological Tissue", Technische Universiteit, Delft, Netherlands, November 1, 2005.
66. "Thermodynamic Driving Forces for Biological Remodelling", Max Planck Institut für Metallforschung, Stuttgart, Germany, October 17, 2005.
67. "Computational biomechanics", two lectures at the COMMAS Summer School, Universität Stuttgart, Germany, October 10—14, 2005.
68. "A Discontinuous Galerkin Finite Element Formulation for the Cahn-Hilliard Equation", Applied Mathematics Seminar, University of Michigan, September 16, 2005.
69. "Discontinuous Galerkin Methods for Fine Scale Strain Gradient Theories", Multiscale Modelling Seminar, Universität Stuttgart, Germany, July 19, 2005.
70. "Discontinuous Galerkin Methods for Strain Gradient Theories", Lehrstuhl fuer Mechanik, Technische Universität, Kaiserslautern, Germany, July 14, 2005.
71. "Growth of Soft Biological Tissue: Mathematical Models and Numerical Methods", Mathematical Biology Seminar, University of Michigan, April 11, 2005.
72. "The Continuum Mechanics and Mathematics of Growth in Soft Biological Tissue", at Stanford University, March 9, 2005.
73. "Continuous/discontinuous Galerkin methods for fourth-order partial differential equations", at Mathematisches Forschungsinstitut, Oberwolfach, Germany, February 1, 2005.
74. "The Mechanics and Mathematics of Growth and Remodelling in Biological Tissue", Applied Physics seminar, University of Michigan, November 17, 2004.
75. "Variational Multiscale Methods in Solid Mechanics", at Universita di Bologna, May 27, 2004.
76. "Continuum Treatment of Growth and Remodelling of Biological Tissue", at Universita di Bologna, May 25, 2004.
77. "A continuum treatment of growth in soft biological tissue: Coupling of mass transport and mechanics", keynote address at the Proceedings of the Seventh US National Congress of Computational Mechanics, Albuquerque, July 27—31, 2003.
78. "Variational Multiscale Methods in Solid Mechanics", at Universitaat Stuttgart, May 26, 2003.
79. "Material Forces in Remodelling of Soft Biological Tissue", at the Euromech Colloquium on Material Forces in Mechanics held at Universität Kaiserslautern, Germany, May 21—24, 2003.
80. "Couple stresses in crystalline solids: Origins from plastic slip gradients, dislocation core distortions and three-body interatomic potentials", Universität Kaiserslautern, July 17, 2002.
81. "Stabilized continuous/discontinuous Galerkin methods for fourth-order elliptic problems: Formulations for thin bending elements and strain gradient theory without derivative degrees of freedom", Ecole Polytechnique Federale de Lausanne, July 16,

2002.

82. “Recent Advances in Models for Thermal Oxidation of Silicon”, Department of Mechanical and Industrial Engineering, University of Illinois, Urbana-Champaign, Feb. 26, 2002.
83. “Atomically-based Field Formulations for Coupled Diffusion and Mechanics in Crystalline Materials”, Department of Materials Science and Engineering Colloquium, University of Michigan, Ann Arbor, March 9, 2001.
84. “A Variational Multiscale Method for Solid Mechanics”, Division of Mechanics and Computation, Stanford University, Dec. 2, 1999.
85. “On Strong Discontinuities in a Mixed Mode Damage Model”, University of Cambridge, UK, Department of Engineering, May 1, 1997.
86. “On Strong Discontinuities in a Mixed Mode Damage Model”, Stanford University, Division of Scientific Computation and Computational Mathematics, April 21, 1997.
87. “On Strong Discontinuities in Inelastic Solids and their Numerical Simulation”, U. C. Berkeley, Dept. of Civil Engineering, SEMM Division, April 25, 1996.
88. “On Strain Localization in Inelastic Solids”, Lawrence Livermore National Laboratory, September 20, 1995.

Currently funded projects

Department of Energy SciDAC program: “MIRAGE: Microstructure insights through reliable/interpretable AI and guided experiments”, Co-PI 9/2025-8/2029

Defense Advanced Research Projects Agency COMPASS program: “Learning the reward structure of heterogeneous agent agent dynamics”, PI 7/2025-6/2026

National Science Foundation: “EAGER: Generative AI for learning emergent complexity in mechanics-driven coupled physics problems”, PI 9/2024-8/2026.

Los Alamos National Laboratories: “Predictive damage and failure modeling using validated theory and machine learning”, PI 6/2024-9/2026.

Department of Energy: “Fast and Rigorous Methods for Multiphysics SPn Transport in Advanced Reactors”, co-PI, 1/2023-12/2025.

Prior funding sources have included NSF, DARPA, Sandia Laboratories and DOE.

Doctoral students

- Lori Bassman, Stanford University, 1999
- Steven Creighton, University of Michigan, 2003
- Hashem Mourad, University of Michigan, 2004
- Luisa Molari, University of Michigan, 2004
- Parag Dixit, University of Michigan, 2006
- Harish Narayanan, University of Michigan, 2008

- Aravind Baskaran, University of Michigan, 2009
- Brian Puchala, University of Michigan, 2009
- Jakob Ostien, University of Michigan, 2009
- Joseph Olberding, University of Michigan, 2010
- Sungick Kim, University of Michigan, 2011
- Shiva Rudraraju, University of Michigan, 2011
- Gregory Teichert, University of Michigan, 2017
- Zhenlin Wang, University of Michigan, 2018
- Alexander Zaitseff, University of Michigan, 2020
- Elizabeth Livingston, University of Michigan, 2024
- Jamie Holber, University of Michigan, 2025
- Saem Han, University of Michigan, 2025
- Chu Wang, University of Southern California, 2030

Post-doctoral scholars

- Shiva Rudraraju, University of Michigan, 2011-12
- Mirko Maraldi, University of Michigan, 2013-15
- Koki Sagiyama, University of Michigan, 2015-17
- Gregory Teichert, University of Michigan, 2017
- Zhenlin Wang, University of Michigan, 2018-21
- Xiaoxuan Zhang, University of Michigan, 2018-22
- Siddhartha Srivastava, University of Michigan, 2020-22
- Mostafa Faghih Shojaei, University of Michigan, 2022
- Haizhou Yang, University of Michigan, 2022-
- Rahul Gulati, University of Southern California, 2024-2025
- Benjamin Jasperson, University of Southern California, 2024-2026

Research Scientists

- Shiva Rudraraju, University of Michigan, 2012-16
- Koki Sagiyama, University of Michigan, 2017-18
- Gregory Teichert, University of Michigan, 2017-22
- Mariana Carrascco-Teja, University of Michigan, 2018-22
- Siddhartha Srivastava, University of Michigan, 2022-
- Mostafa Faghih Shojaei, University of Michigan, 2022-

Masters students

- Ryan Vignes, University of Michigan, 2008

- Devin O’Connor, University of Michigan, 2008
- Farooq Al Jahwari, University of Michigan, 2012
- Jiahao Jiang, University of Michigan, 2018
- Matthew Duschenes, University of Michigan, 2021
- Tryaksh Gupta, University of Michigan, 2023
- Dangli Cao, University of Southern California, 2025