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Degrees Earned

Harvard University, Ph.D., Theoretical particle physics, 1998

Harvard University, A.B., Summa cum laude in physics, 1992

Professional Experience

Theoretical Nuclear Science Head, Facility for Rare Isotope Beams, Michigan State University, 2020-present

Professor, Facility for Rare Isotope Beams, Michigan State University, 2017-present

Professor, North Carolina State University, 2012-2017

Associate Professor, North Carolina State University, 2007-2012

Assistant Professor, North Carolina State University, 2001-2007

Postdoctoral Researcher, University of Massachusetts, 1998-2001

Awards, Honors, and Offices Held

Outstanding Faculty Award, Michigan State University College of Natural Science, 2024

Chair Line for the Division of Nuclear Physics (Vice Chair, Chair Elect, Chair, Past Chair), American Physical Society, 2022-present

Network for Neutrinos, Nuclear Astrophysics, and Symmetries Advisory Committee, 2021-present

Theoretical Nuclear Science Head, Facility for Rare Isotope Beams, Michigan State University, 2020-present

Executive Producer of "Rare Connections", a documentary film about the science, people, and stories connected with the Facility for Rare Isotope Beams that was produced and directed by Ágnes Mócsy, 2021-2025.

Coordinator of the Director's Research Scholar Program designed to broaden participation in STEM fields by providing scholarships for undergraduate research, Facility for Rare Isotope Beams, Michigan State University, 2018-present

Founder and organizer of the Advanced Studies Gateway at FRIB, Facility for Rare Isotope Beams, Michigan State University, 2018-present

Nuclear Science Advisory Committee Long Range Plan Writing Committee, 2022-2023

Institute for Nuclear Theory National Advisory Committee, 2019-2023

Facility for Rare Isotope Beams (FRIB) Theory Alliance Executive Board, 2018-2021

Chair Line for Topical Group on Few-Body Systems and Multiparticle Dynamics (Vice Chair, Chair Elect, Chair, Past Chair), American Physical Society, 2016-2020

American Physical Society Fellow, 2014

Alumni Distinguished Undergraduate Professor Award, North Carolina State University, 2012-2013

Outstanding Teaching Award, North Carolina State University, 2006-2007

Fannie and John Hertz Foundation Graduate Fellowship, 1992-1997

Robbins Prize, Harvard University, 1996

Deturs Prize, Gross Scholar, Hoopes Prize, John Harvard Scholarship, Phi Beta Kappa, Harvard University, 1988-1992

Apker Award, National Co-Winner, American Physical Society, 1991

Citations

According to Google Scholar, 7352 citations, h-index = 46, recorded on March 25, 2025.

Research Highlights and News Media

Wavefunction Matching for the Quantum Many-Body Problem (2024):
https://science.osti.gov/np/Highlights/2024/9d
https://frib.msu.edu/news/2024/wavefunction-matching
https://www.uni-bonn.de/en/news/109-2024
https://www.youtube.com/watch?v=bItNVHZe7-8

Improved Spin and Density Correlation Simulations Give Insights on Neutron Stars (2024):
https://science.osti.gov/np/Highlights/2024/10e

Exciting the Alpha Particle (2024):
https://science.osti.gov/np/Highlights/2024/7a

"Mirror" Nuclei Help Connect Nuclear Theory and Neutron Stars (2024):
https://science.osti.gov/np/Highlights/2024/7d

Charged Bound States in Boxes (2024):
https://science.osti.gov/np/Highlights/2024/2c

Computing How Quantum States Overlap (2024):
https://science.osti.gov/np/Highlights/2024/2b

Connecting Nuclear Theory and Quantum Computing (2023):
https://innovationcenter.msu.edu/frib-receives-doe-sc-grant-connecting-nuclear-theory-and-quantum-computing/

Accelerating Nuclear Science with Machine Learning (2023):
https://msutoday.msu.edu/news/2023/accelerating-nuclear-science-with-machine-learning

Emergent Geometry and Duality (2023):
https://www.energy.gov/science/np/articles/scientists-probe-emergent-structure-carbon-nucleus
https://www.youtube.com/watch?v=s2wUQ0tFE10
https://frib.msu.edu/news/2023/nature-emergent-structure.html

High School Student Finalist in Regeneron Talent Search Competition (2022):
https://frib.msu.edu/news/2022/high-school-talent-search.html
https://3ten.org/news/2022/03/01/senior-max-bee-lindgren-named-finalist-for-national-sports-competition/
https://www.quantinuum.com/news/quantinuum-helps-award-winning-high-schooler-test-algorithm

The Quantum Rodeo (2021):
https://science.osti.gov/np/Highlights/2021/NP-2021-12-c

Hot Nuclear Matter (2020):
https://nscl.msu.edu/news/science/news-hotnuclear.html

MSU Today (2018) - Answering Philosophical Questions:
https://msutoday.msu.edu/news/2018/dean-lee-answering-philosophical-questions

Eigenvector Continuation (2018):
https://physics.aps.org/articles/v11/s81
https://news.ncsu.edu/2018/07/ipsen-eigenvector/

Alpha-Alpha Scattering (2015):
https://www.nature.com/articles/528042a
https://phys.org/news/2015-12-insights-creation-heavy-elements-simulate.html

Hoyle State Calculated (2013):
https://physicsworld.com/a/carbons-hoyle-state-calculated-at-long-last/

A Primordial Nucleus Behind the Elements of Life (2012):
https://www.quantamagazine.org/the-physics-behind-the-elements-of-life-20121204/

Peer-Reviewed Publications

The standard author name ordering convention is alphabetical order, but junior investigators who carry out major parts of the work are listed first.

1. Y. H. Song, M. Kim, Y. Kim, K. Cho, S. Elhatisari, D. Lee, Y. Z. Ma and U. G. Meißner, "Ab Initio Calculations of the Carbon and Oxygen Isotopes: Energies, Correlations, and Superfluid Pairing," [arXiv:2502.18722 [nucl-th]].

2. S. Shen, S. Elhatisari, D. Lee, U. G. Meißner and Z. Ren, "Ab initio study of the beryllium isotopes ^{7}Be to ^{12}Be," Phys. Rev. Lett. **134**, 163503 (2025) doi.org/10.1103/PhysRevLett.134.162503 [arXiv:2411.14935 [nucl-th]].

3. D. Lee, "Lattice Effective Field Theory Simulations of Nuclei," Annu. Rev. Nucl. Part. S. in press [arXiv:2501.03303 [nucl-th]].

4. A. Bazavov, B. Henke, L. Hostetler, D. Lee, H. W. Lin, G. Pederiva and A. Shindler, "Efficient state preparation for the Schwinger model with a theta term," Phys. Rev. D **111**, no.7, 074515 (2025) doi:10.1103/PhysRevD.111.074515 [arXiv:2411.00243 [hep-lat]].

5. G. Giacalone, W. Zhao, B. Bally, S. Shen, T. Duguet, J. P. Ebran, S. Elhatisari, M. Frosini, T. A. Lähde and D. Lee, *et al.* "Anisotropic Flow in Fixed-Target Pb208+Ne20 Collisions as a Probe of Quark-Gluon Plasma," Phys. Rev. Lett. **134**, no.8, 082301 (2025) doi:10.1103/PhysRevLett.134.082301 [arXiv:2405.20210 [nucl-th]].

6. D. M. Roh, D. Lee, P. Maris, E. Ng, J. P. Vary and C. Yang, "Accelerating eigenvalue computation for nuclear structure calculations via perturbative corrections," J. Comput. Phys. **531**, 113921 (2025) doi:10.1016/j.jcp.2025.113921 [arXiv:2407.08901 [physics.comp-ph]].

7. D. B. Reinhardt, D. Lee, W. P. Schleich and M. Meister, "Conformal duality of the nonlinear Schrödinger equation: Theory and applications to parameter estimation," Phys. Rev. Res. **7**, no.1, 013078 (2025) doi:10.1103/PhysRevResearch.7.013078 [arXiv:2306.17720 [cond-mat.quant-gas]].

8. J. Jia, G. Giacalone, B. Bally, J. D. Brandenburg, U. Heinz, S. Huang, D. Lee, Y. J. Lee, W. Li and C. Loizides, *et al.* "Imaging the initial condition of heavy-ion collisions and nuclear structure across the nuclide chart," Nucl. Sci. Tech. **35**, 220 (2024) doi:10.1007/s41365-024-01589-w [arXiv:2209.11042 [nucl-ex]].

9. T. Duguet, A. Ekström, R. J. Furnstahl, S. König and D. Lee, "Colloquium: Eigenvector continuation and projection-based emulators," Rev. Mod. Phys. **96**, no.3, 031002 (2024) doi:10.1103/RevModPhys.96.031002 [arXiv:2310.19419 [nucl-th]].

10. Y. Z. Ma, Z. Lin, B. N. Lu, S. Elhatisari, D. Lee, N. Li, U. G. Meißner, A. W. Steiner and Q. Wang, "Structure Factors for Hot Neutron Matter from Ab Initio Lattice Simulations with High-Fidelity Chiral Interactions," Phys. Rev. Lett. **132**, no.23, 232502 (2024) doi:10.1103/PhysRevLett.132.232502 [arXiv:2306.04500 [nucl-th]].
11. S. Elhatisari, L. Bovermann, Y. Ma, E. Epelbaum, D. Frame, F. Hildenbrand, M. Kim, Y. Kim, H. Krebs, T. A. Lähde and D. Lee, *et al.* "Wavefunction matching for solving quantum many-body problems," Nature **630**, no.8015, 59-63 (2024) doi:10.1038/s41586-024-07422-z [arXiv:2210.17488 [nucl-th]].
12. K. König, J. C. Berengut, A. Borschevsky, A. Brinson, B. A. Brown, A. Dockery, S. Elhatisari, E. Eliav, R. F. Garcia Ruiz and J. D. Holt, *et al.* "Nuclear charge radii of silicon isotopes," Phys. Rev. Lett. 132, 162502 (2024).
13. U. G. Meißner, S. Shen, S. Elhatisari and D. Lee, "Ab Initio Calculation of the Alpha-Particle Monopole Transition Form Factor," Phys. Rev. Lett. **132**, no.6, 062501 (2024) doi:10.1103/PhysRevLett.132.062501 [arXiv:2309.01558 [nucl-th]].
14. Z. Qian, J. Watkins, G. Given, J. Bonitati, K. Choi and D. Lee, "Demonstration of the rodeo algorithm on a quantum computer," Eur. Phys. J. A **60**, no.7, 151 (2024) doi:10.1140/epja/s10050-024-01373-9 [arXiv:2110.07747 [quant-ph]].
15. Z. Ren, S. Elhatisari, T. A. Lähde, D. Lee and U. G. Meißner, "Ab initio study of nuclear clustering in hot dilute nuclear matter," Phys. Lett. B **850**, 138463 (2024) doi:10.1016/j.physletb.2024.138463 [arXiv:2305.15037 [nucl-th]].
16. D. Lee, "Quantum techniques for eigenvalue problems," Eur. Phys. J. A **59**, no.11, 275 (2023) [erratum: Eur. Phys. J. A **60**, no.1, 19 (2024)] doi:10.1140/epja/s10050-023-01183-5 [arXiv:2307.03889 [quant-ph]].
17. A. Sarkar, D. Lee and U. G. Meißner, "Floating Block Method for Quantum Monte Carlo Simulations," Phys. Rev. Lett. **131**, no.24, 24 (2023) doi:10.1103/PhysRevLett.131.242503 [arXiv:2306.11439 [nucl-th]].
18. S. Shen, S. Elhatisari, T. A. Lähde, D. Lee, B. N. Lu and U. G. Meißner, "Emergent geometry and duality in the carbon nucleus," Nature Commun. **14**, no.1, 2777 (2023) doi:10.1038/s41467-023-38391-y [arXiv:2202.13596 [nucl-th]].
19. H. Yu, S. König and D. Lee, "Charged-Particle Bound States in Periodic Boxes," Phys. Rev. Lett. **131**, no.21, 212502 (2023) doi:10.1103/PhysRevLett.131.212502 [arXiv:2212.14379 [nucl-th]].
20. C. Hicks and D. Lee, "Trimmed sampling algorithm for the noisy generalized eigenvalue problem," Phys. Rev. Res. **5**, no.2, L022001 (2023) doi:10.1103/PhysRevResearch.5.L022001 [arXiv:2209.02083 [nucl-th]].
21. F. Hildenbrand, S. Elhatisari, T. A. Lähde, D. Lee and U. G. Meißner, "Lattice Monte Carlo simulations with two impurity worldlines," Eur. Phys. J. A **58**, no.9, 167 (2022) doi:10.1140/epja/s10050-022-00821-8 [arXiv:2206.09459 [nucl-th]].
22. E. Bonilla, P. Giuliani, K. Godbey and D. Lee, "Training and projecting: A reduced basis method emulator for many-body physics," Phys. Rev. C **106**, no.5, 054322 (2022) doi:10.1103/PhysRevC.106.054322 [arXiv:2203.05284 [nucl-th]].
23. A. Boehnlein, M. Diefenthaler, N. Sato, M. Schram, V. Ziegler, C. Fanelli, M. Hjorth-Jensen, T. Horn, M. P. Kuchera and D. Lee, *et al.* "Colloquium: Machine learning in nuclear physics," Rev. Mod. Phys. **94**, no.3, 031003 (2022) doi:10.1103/RevModPhys.94.031003 [arXiv:2112.02309 [nucl-th]].
24. B. N. Lu, N. Li, S. Elhatisari, Y. Z. Ma, D. Lee and U. G. Meißner, "Perturbative Quantum Monte Carlo Method for Nuclear Physics," Phys. Rev. Lett. **128**, no.24, 242501 (2022) doi:10.1103/PhysRevLett.128.242501 [arXiv:2111.14191 [nucl-th]].

25. S. Elhatisari, T. A. Lähde, D. Lee, U. G. Meißner and T. Vonk, "Alpha-alpha scattering in the Multiverse," JHEP **02**, 001 (2022) [arXiv:2112.09409 [hep-th]].

26. D. Lee, "Chiral Effective Field Theory after Thirty Years: Nuclear Lattice Simulations," Few Body Syst. **62**, no.4, 115 (2021) [arXiv:2109.09582 [nucl-th]].

27. J. Watkins, N. Wiebe, A. Roggero and D. Lee, "Time-Dependent Hamiltonian Simulation Using Discrete-Clock Constructions," PRX Quantum **5**, no.4, 040316 (2024) doi:10.1103/PRXQuantum.5.040316 [arXiv:2203.11353 [quant-ph]].

28. E. A. Coello Pérez, J. Bonitati, D. Lee, S. Quaglioni and K. A. Wendt, "Quantum state preparation by adiabatic evolution with custom gates," Phys. Rev. A **105**, no.3, 032403 (2022) [arXiv:2111.12207 [quant-ph]].

29. A. Sarkar and D. Lee, "Self-learning Emulators and Eigenvector Continuation," Phys. Rev. Research 4, 023214 (2022) [arXiv:2107.13449 [nucl-th]].

30. Y. H. Song, Y. Kim, N. Li, B. N. Lu, R. He and D. Lee, "Quantum many-body calculations using body-centered cubic lattices," Phys. Rev. C **104**, no.4, 044304 (2021) [arXiv:2107.03626 [cond-mat.quant-gas]].

31. S. Shen, T. A. Lähde, D. Lee and U. G. Meißner, "Wigner SU(4) symmetry, clustering, and the spectrum of ^{12}C," Eur. Phys. J. A **57**, no.9, 276 (2021) [arXiv:2106.04834 [nucl-th]].

32. N. Summerfield, B. N. Lu, C. Plumberg, D. Lee, J. Noronha-Hostler and A. Timmins, "^{16}O ^{16}O collisions at energies available at the BNL Relativistic Heavy Ion Collider and at the CERN Large Hadron Collider comparing α clustering versus substructure," Phys. Rev. C **104**, no.4, L041901 (2021) [arXiv:2103.03345 [nucl-th]].

33. D. Lee, S. Bogner, B. A. Brown, S. Elhatisari, E. Epelbaum, H. Hergert, M. Hjorth-Jensen, H. Krebs, N. Li and B. N. Lu, *et al.* "Hidden Spin-Isospin Exchange Symmetry," Phys. Rev. Lett. **127**, no.6, 062501 (2021) [arXiv:2010.09420 [nucl-th]].

34. K. Choi, D. Lee, J. Bonitati, Z. Qian and J. Watkins, "Rodeo Algorithm for Quantum Computing," Phys. Rev. Lett. **127**, no.4, 040505 (2021) [arXiv:2009.04092 [quant-ph]].

35. Y. Kanada-En'yo and D. Lee, "Effective interactions between nuclear clusters," Phys. Rev. C **103**, no.2, 024318 (2021) [arXiv:2008.01867 [nucl-th]].

36. D. Frame, T. A. Lähde, D. Lee and U. G. Meißner, "Impurity Lattice Monte Carlo for Hypernuclei," Eur. Phys. J. A **56**, no.10, 248 (2020), [arXiv:2007.06335 [nucl-th]].

37. D. Lee, U. G. Meißner, K. A. Olive, M. Shifman and T. Vonk, "θ-dependence of light nuclei and nucleosynthesis," Phys. Rev. Res. **2**, no.3, 033392 (2020) [arXiv:2006.12321 [hep-ph]].

38. P. Bedaque, A. Boehnlein, M. Cromaz, M. Diefenthaler, L. Elouadrhiri, T. Horn, M. Kuchera, D. Lawrence, D. Lee and S. Lidia, *et al.* "A.I. for nuclear physics," Eur. Phys. J. A **57**, no.3, 100 (2021)

39. D. Lee, "Recent Progress in Nuclear Lattice Simulations," Front. in Phys. **8**, 174 (2020)

40. A. Sarkar and D. Lee, "Convergence of Eigenvector Continuation," Phys. Rev. Lett. **126**, no.3, 032501 (2021) [arXiv:2004.07651 [nucl-th]].

41. B. N. Lu, N. Li, S. Elhatisari, D. Lee, J. E. Drut, T. A. Lähde, E. Epelbaum and U. G. Meißner, "*Ab Initio* Nuclear Thermodynamics," Phys. Rev. Lett. **125**, no.19, 192502 (2020) [arXiv:1912.05105 [nucl-th]].

42. S. König, A. Ekström, K. Hebeler, D. Lee and A. Schwenk, "Eigenvector Continuation as an Efficient and Accurate Emulator for Uncertainty Quantification," Phys. Lett. B **810**, 135814 (2020) [arXiv:1909.08446 [nucl-th]].

43. C. W. Johnson, K. D. Launey, N. Auerbach, S. Bacca, B. R. Barrett, C. R. Brune, M. A. Caprio, P. Descouvemont, W. H. Dickhoff and C. Elster, *et al.* "White paper: from bound states to the continuum," J. Phys. G **47**, no.12, 123001 (2020) [arXiv:1912.00451 [nucl-th]].

44. D. Lee, J. Bonitati, G. Given, C. Hicks, N. Li, B. N. Lu, A. Rai, A. Sarkar and J. Watkins, "Projected Cooling Algorithm for Quantum Computation," Phys. Lett. B **807**, 135536 (2020) [arXiv:1910.07708 [quant-ph]].

45. R. He, N. Li, B. N. Lu and D. Lee, "Superfluid Condensate Fraction and Pairing Wave Function of the Unitary Fermi Gas," Phys. Rev. A **101**, 063615 (2020) [arXiv:1910.01257 [cond-mat.quant-gas]].

46. D. Lee, "Recent Progress in Nuclear Lattice Simulations," Front. Phys. **8**, 174 (2020).

47. P. Demol, T. Duguet, A. Ekström, M. Frosini, K. Hebeler, S. König, D. Lee, A. Schwenk, V. Somá, A. Tichai, "Improved many-body expansions from eigenvector continuation," Phys. Rev. C **101**, 041302(R) (2020) [arXiv:1911.12578 [nucl-th]].

48. L. Bovermann, E. Epelbaum, H. Krebs and D. Lee, "Scattering phase shifts and mixing angles for an arbitrary number of coupled channels on the lattice," Phys. Rev. C **100**, no. 6, 064001 (2019) [arXiv:1905.02492 [nucl-th]].

49. B.-N. Lu, N. Li, S. Elhatisari, D. Lee, E. Epelbaum and U.-G. Meißner, "Essential elements for nuclear binding," Phys. Lett. B **797**, 134863 (2019) arXiv:1812.10928 [nucl-th].

50. N. Li, S. Elhatisari, E. Epelbaum, D. Lee, B. Lu and U.-G. Meißner, "Galilean invariance restoration on the lattice," Phys. Rev. C **99**, no. 6, 064001 (2019) [arXiv:1902.01295 [nucl-th]].

51. D. Lee, J. Watkins, D. Frame, G. Given, R. He, N. Li, B. N. Lu and A. Sarkar, "Time fractals and discrete scale invariance with trapped ions," Phys. Rev. A **100**, no. 1, 011403(R) (2019) [arXiv:1901.01661 [cond-mat.quant-gas]].

52. N. Klein, D. Lee and U.-G. Meißner, "Lattice Improvement in Lattice Effective Field Theory," Eur. Phys. J. A **54**, no. 12, 233 (2018) [arXiv:1807.04234 [hep-lat]].

53. N. Li, S. Elhatisari, E. Epelbaum, D. Lee, B. N. Lu and U.-G. Meißner, "Neutron-proton scattering with lattice chiral effective field theory at next-to-next-to-next-to-leading order," Phys. Rev. C **98**, no. 4, 044002 (2018) [arXiv:1806.07994 [nucl-th]].

54. M. Freer, H. Horiuchi, Y. Kanada-En'yo, D. Lee and U.-G. Meißner, "Microscopic Clustering in Light Nuclei," Rev. Mod. Phys. **90**, no. 3, 035004 (2018) [arXiv:1705.06192 [nucl-th]].

55. N. Klein, S. Elhatisari, T. A. Lähde, D. Lee and U. G. Meißner, "The Tjon Band in Nuclear Lattice Effective Field Theory," Eur. Phys. J. A **54**, no. 7, 121 (2018) [arXiv:1803.04231 [nucl-th]].

56. D. Frame, R. He, I. Ipsen, D. Lee, D. Lee and E. Rrapaj, "Eigenvector continuation with subspace learning," Phys. Rev. Lett. **121**, 032501 (2018) [arXiv:1711.07090 [nucl-th]].

57. S. Elhatisari *et al.*, "Ab initio Calculations of the Isotopic Dependence of Nuclear Clustering," Phys. Rev. Lett. **119**, no. 22, 222505 (2017) [arXiv:1702.05177 [nucl-th]].

58. J. M. Alarcón *et al.*, "Neutron-proton scattering at next-to-next-to-leading order in Nuclear Lattice Effective Field Theory," Eur. Phys. J. A **53**, no. 5, 83 (2017) [arXiv:1702.05319 [nucl-th]].

59. S. König and D. Lee, "Volume Dependence of N-Body Bound States," Phys. Lett. B **779**, 9 (2018) [arXiv:1701.00279 [hep-lat]].

60. A. Rokash, E. Epelbaum, H. Krebs and D. Lee, "Effective forces between quantum bound states," Phys. Rev. Lett. **118** 232502 (2017) [arXiv:1612.08004 [nucl-th]].

61. S. Elhatisari, K. Katterjohn, D. Lee, U.-G. Meißner and G. Rupak, "Universal dimer–dimer scattering in lattice effective field theory," Phys. Lett. B **768**, 337 (2017) [arXiv:1610.09095 [nucl-th]].

62. D. Lee, "Lattice methods and the nuclear few- and many-body problem," Lect. Notes Phys. **936**, 237 (2017) [arXiv:1609.00421 [nucl-th]].

63. S. Elhatisari, D. Lee, U.-G. Meißner and G. Rupak, "Nucleon-deuteron scattering using the adiabatic projection method," Eur. Phys. J. A **52**, no. 6, 174 (2016) [arXiv:1603.02333 [nucl-th]].

64. S. Elhatisari *et al.*, "Nuclear binding near a quantum phase transition," Phys. Rev. Lett. **117**, no. 13, 132501 (2016) [arXiv:1602.04539 [nucl-th]].

65. D. Lee, "Nuclear lattice simulations and SU(4) symmetry," Int. J. Mod. Phys. E **25**, no. 05, 1641010 (2016).

66. B. N. Lu, T. A. Lähde, D. Lee and U.-G. Meißner, "Precise determination of lattice phase shifts and mixing angles," Phys. Lett. B **760**, 309 (2016), [arXiv:1506.05652 [nucl-th]].

67. S. Elhatisari, D. Lee, G. Rupak, E. Epelbaum, H. Krebs, T. A. Lähde, T. Luu and U.-G. Meißner, "Ab initio alpha-alpha scattering," Nature **528**, 111 (2015) [arXiv:1506.03513 [nucl-th]].

68. N. Klein, D. Lee, W. Liu and U.-G. Meißner, "Regularization Methods for Nuclear Lattice Effective Field Theory," Phys. Lett. B **747**, 511 (2015) [arXiv:1505.07000 [nucl-th]].

69. A. Rokash, M. Pine, S. Elhatisari, D. Lee, E. Epelbaum and H. Krebs, "Scattering cluster wave functions on the lattice using the adiabatic projection method," Phys. Rev. C **92**, no. 5, 054612 (2015) [arXiv:1505.02967 [nucl-th]].

70. B. N. Lu, T. A. Lähde, D. Lee and U.-G. Meißner, "Breaking and restoration of rotational symmetry for irreducible tensor operators on the lattice," Phys. Rev. D **92**, no. 1, 014506 (2015) [arXiv:1504.01685 [nucl-th]].

71. T. A. Lähde, T. Luu, D. Lee, U.-G. Meißner, E. Epelbaum, H. Krebs and G. Rupak, "Nuclear Lattice Simulations using Symmetry-Sign Extrapolation," Eur. Phys. J. A **51**, no. 7, 92 (2015) [arXiv:1502.06787 [nucl-th]].

72. S. Bour, D. Lee, H.-W. Hammer and U.-G. Meißner, "Ab initio Lattice Results for Fermi Polarons in Two Dimensions," Phys. Rev. Lett. **115**, no. 18, 185301 (2015) [arXiv:1412.8175 [cond-mat.quant-gas]].

73. T. A. Lähde, E. Epelbaum, H. Krebs, D. Lee, U.-G. Meißner and G. Rupak, "Uncertainties of Euclidean Time Extrapolation in Lattice Effective Field Theory," J. Phys. G **42**, no. 3, 034012 (2015) [arXiv:1409.7538 [nucl-th]].

74. S. Elhatisari and D. Lee, "Fermion-dimer scattering using an impurity lattice Monte Carlo approach and the adiabatic projection method," Phys. Rev. C **90**, no. 6, 064001 (2014) [arXiv:1407.2784 [nucl-th]].

75. B. N. Lu, T. A. Lähde, D. Lee and U.-G. Meißner, "Breaking and restoration of rotational symmetry on the lattice for bound state multiplets," Phys. Rev. D **90**, no. 3, 034507 (2014) [arXiv:1403.8056 [nucl-th]].

76. E. Epelbaum, H. Krebs, T. A. Lähde, D. Lee, U.-G. Meißner and G. Rupak, "Ab Initio Calculation of the Spectrum and Structure of ^{16}O," Phys. Rev. Lett. **112**, no. 10, 102501 (2014) [arXiv:1312.7703 [nucl-th]].

77. T. A. Lähde, E. Epelbaum, H. Krebs, D. Lee, U.-G. Meißner and G. Rupak, "Lattice Effective Field Theory for Medium-Mass Nuclei," Phys. Lett. B **732**, 110 (2014) [arXiv:1311.0477 [nucl-th]].

78. M. Pine, D. Lee and G. Rupak, "Adiabatic projection method for scattering and reactions on the lattice," Eur. Phys. J. A **49**, 151 (2013) [arXiv:1309.2616 [nucl-th]].

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82. G. Rupak and D. Lee, "Radiative capture reactions in lattice effective field theory," Phys. Rev. Lett. **111**, no. 3, 032502 (2013) [arXiv:1302.4158 [nucl-th]].

83. E. Epelbaum, H. Krebs, T. A. Lähde, D. Lee and U.-G. Meißner, "Viability of Carbon-Based Life as a Function of the Light Quark Mass," Phys. Rev. Lett. **110**, no. 11, 112502 (2013) [arXiv:1212.4181 [nucl-th]].

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85. E. Epelbaum, H. Krebs, T. A. Lahde, D. Lee and U.-G. Meißner, "Structure and rotations of the Hoyle state," Phys. Rev. Lett. **109**, 252501 (2012) [arXiv:1208.1328 [nucl-th]].

86. M. Pine and D. Lee, "Effective Field Theory for Bound State Reflection," Annals Phys. **331**, 24 (2013) [arXiv:1206.6280 [nucl-th]].

87. S. Bour, H.-W. Hammer, D. Lee and U.-G. Meißner, "Benchmark calculations for elastic fermion-dimer scattering," Phys. Rev. C **86**, 034003 (2012) [arXiv:1206.1765 [nucl-th]].

88. S. Elhatisari and D. Lee, "Causality bounds for neutron-proton scattering," Eur. Phys. J. A **48**, 110 (2012) [arXiv:1206.1207 [nucl-th]].

89. Y. Nishida and D. Lee, "Weakly bound molecules trapped with discrete scaling symmetries," Phys. Rev. A **86**, 032706 (2012) [arXiv:1202.3414 [cond-mat.quant-gas]].

90. S. König, D. Lee and H.-W. Hammer, "Non-relativistic bound states in a finite volume," Annals Phys. **327**, 1450 (2012) [arXiv:1109.4577 [hep-lat]].

91. S. Bour, S. König, D. Lee, H.-W. Hammer and U.-G. Meißner, "Topological phases for bound states moving in a finite volume," Phys. Rev. D **84**, 091503(R) (2011) [arXiv:1107.1272 [nucl-th]].

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93. S. König, D. Lee and H.-W. Hammer, "Volume Dependence of Bound States with Angular Momentum," Phys. Rev. Lett. **107**, 112001 (2011) [arXiv:1103.4468 [hep-lat]].

94. E. Epelbaum, H. Krebs, D. Lee and U.-G. Meißner, "Ab initio calculation of the Hoyle state," Phys. Rev. Lett. **106**, 192501 (2011) [arXiv:1101.2547 [nucl-th]].

95. D. Lee and M. Pine, "How quantum bound states bounce and the structure it reveals," Eur. Phys. J. A **47**, 41 (2011) [arXiv:1008.5187 [nucl-th]].

96. E. Epelbaum, H. Krebs, D. Lee and U.-G. Meißner, "Lattice calculations for A=3,4,6,12 nuclei using chiral effective field theory," Eur. Phys. J. A **45**, 335 (2010) [arXiv:1003.5697 [nucl-th]].

97. H.-W. Hammer and D. Lee, "Causality and the effective range expansion," Annals Phys. **325**, 2212 (2010) [arXiv:1002.4603 [nucl-th]].

98. E. Epelbaum, H. Krebs, D. Lee and U.-G. Meißner, "Lattice effective field theory calculations for A = 3,4,6,12 nuclei," Phys. Rev. Lett. **104**, 142501 (2010) [arXiv:0912.4195 [nucl-th]].

99. H.-W. Hammer and D. Lee, "Causality and universality in low-energy quantum scattering," Phys. Lett. B **681**, 500 (2009) [arXiv:0907.1763 [nucl-th]].

100. E. Epelbaum, H. Krebs, D. Lee and U.-G. Meißner, "Lattice chiral effective field theory with three-body interactions at next-to-next-to-leading order," Eur. Phys. J. A **41**, 125 (2009) [arXiv:0903.1666 [nucl-th]].

101. E. Epelbaum, H. Krebs, D. Lee and U.-G. Meißner, "Ground state energy of dilute neutron matter at next-to-leading order in lattice chiral effective field theory," Eur. Phys. J. A **40**, 199 (2009) [arXiv:0812.3653 [nucl-th]].

102. D. Lee, "Lattice simulations for few- and many-body systems," Prog. Part. Nucl. Phys. **63**, 117 (2009) [arXiv:0804.3501 [nucl-th]].

103. D. Lee, "The Ground state energy at unitarity," Phys. Rev. C **78**, 024001 (2008) [arXiv:0803.1280 [nucl-th]].

104. D. Lee, "The Symmetric heavy-light ansatz," Eur. Phys. J. A **35**, 171 (2008) [arXiv:0704.3439 [cond-mat.supr-con]].

105. B. Borasoy, E. Epelbaum, H. Krebs, D. Lee and U.-G. Meißner, "Dilute neutron matter on the lattice at next-to-leading order in chiral effective field theory," Eur. Phys. J. A **35**, 357 (2008) [arXiv:0712.2993 [nucl-th]].

106. B. Borasoy, E. Epelbaum, H. Krebs, D. Lee and U.-G. Meißner, "Chiral effective field theory on the lattice at next-to-leading order," Eur. Phys. J. A **35**, 343 (2008) [arXiv:0712.2990 [nucl-th]].

107. B. Borasoy, E. Epelbaum, H. Krebs, D. Lee and U.-G. Meißner, "Two-particle scattering on the lattice: Phase shifts, spin-orbit coupling, and mixing angles," Eur. Phys. J. A **34**, 185 (2007) [arXiv:0708.1780 [nucl-th]].

108. D. Lee and R. Thomson, "Temperature-dependent errors in nuclear lattice simulations," Phys. Rev. C **75**, 064003 (2007) [nucl-th/0701048].

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110. B. Borasoy, E. Epelbaum, H. Krebs, D. Lee and U.-G. Meißner, "Lattice Simulations for Light Nuclei: Chiral Effective Field Theory at Leading Order," Eur. Phys. J. A **31**, 105 (2007) [nucl-th/0611087].

111. D. Lee, "Superfluidity and non-monogamous pairing at unitarity," Phys. Rev. B **75**, 134502 (2007) [cond-mat/0606706 [cond-mat.stat-mech]].

112. D. Lee, "Large-N droplets in two dimensions," Phys. Rev. A **73**, 063204 (2006) [physics/0512085].

113. D. Lee, "Ground state energy of spin-1/2 fermions in the unitary limit," Phys. Rev. B **73**, 115112 (2006) [cond-mat/0511332].

114. B. Borasoy, H. Krebs, D. Lee and U.-G. Meißner, "The triton and three-nucleon force in nuclear lattice simulations," Nucl. Phys. A **768**, 179 (2006) [nucl-th/0510047].

115. D. Lee and T. Schäfer, "Cold dilute neutron matter on the lattice. II. Results in the unitary limit," Phys. Rev. C **73**, 015202 (2006) [nucl-th/0509018].

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117. M. Hamilton, I. Lynch and D. Lee, "Lattice gas models derived from effective field theory," Phys. Rev. C **71**, 044005 (2005) [nucl-th/0412014].

118. D. Lee and T. Schäfer, "Neutron matter on the lattice with pionless effective field theory," Phys. Rev. C **72**, 024006 (2005) [nucl-th/0412002].

119. J. W. Chen, D. Lee and T. Schäfer, "Inequalities for light nuclei in the Wigner symmetry limit," Phys. Rev. Lett. **93**, 242302 (2004) [nucl-th/0408043].

120. D. Lee, "Pressure inequalities for nuclear and neutron matter," Phys. Rev. C **71**, 044001 (2005) [nucl-th/0407101].

121. D. Lee, "Inequalities for low-energy symmetric nuclear matter," Phys. Rev. C **70**, 064002 (2004) [nucl-th/0407088].

122. D. Lee, B. Borasoy and T. Schäfer, "Nuclear lattice simulations with chiral effective field theory," Phys. Rev. C **70**, 014007 (2004) [nucl-th/0402072].

123. D. J. Lee and I. C. F. Ipsen, "Zone determinant expansions for nuclear lattice simulations," Phys. Rev. C **68**, 064003 (2003) [nucl-th/0308052].

124. D. Lee and P. Maris, "Massless QED(3) with explicit fermions," Phys. Rev. D **67**, 076002 (2003) [hep-lat/0212033].

125. B. Borasoy and D. Lee, "Study of relativistic bound states in a scalar model using diagonalization / Monte Carlo methods," Nucl. Phys. A **696**, 537 (2001) [hep-ph/0101186].

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127. N. Salwen and D. Lee, "Modal expansions and nonperturbative quantum field theory in Minkowski space," Phys. Rev. D **62**, 025006 (2000) [hep-th/9910103].

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135. D. Lee and H. Georgi, "Sum rule for large N(c) QCD and application to heavy quarkonia," Phys. Lett. B **426**, 367 (1998) [hep-ph/9710324].

136. D. Lee, "A Simple model of two-body decays of charmed mesons into pseudoscalar mesons using the 1/N expansion," Phys. Lett. B **275**, 469 (1992) Erratum: [Phys. Lett. B **277**, 529 (1992)].

Grant Funding

(Current) "STREAMLINE Collaboration: Machine Learning for Nuclear Many-Body Systems", PI on DOE Artificial Intelligence and Machine Learning grant, September 1, 2023 - August 31, 2025. Collaboration involving Michigan State, Argonne, Fermilab, Florida State, Ohio State, Ohio, Oak Ridge, North Carolina State, and Tennessee. Total Amount: $1,210,000. Michigan State Amount: $352,000.

(Current) "Online Autonomous Tuning of the FRIB Accelerator Using Machine Learning", co-PI on DOE Artificial Intelligence and Machine Learning grant, November 1, 2023 - October 31, 2025. PI is Peter Ostroumov. Amount: $634,000.

(Current) "Effective Field Theory and Renormalization Group Studies of Quantum Algorithms", PI on DOE Quantum Horizons: QIS Research and Innovation for Nuclear Science grant, January 1, 2023 - December 31, 2025. Co-PI's are Scott Bogner, Heiko Hergert, and Morten Hjorth-Jensen. Amount: $491,000.

(Current) "Efficient Quantum State Preparation Algorithms", PI on NSF Quantum Information Science grant, August 15, 2023 - July 31, 2026. Amount: $256,000.

(Current) "Theoretical Nuclear Structure", co-PI on DOE Nuclear Theory grant, March 1, 2015 - June 1, 2024. PI is Witek Nazarewicz. DOE grants of Lee and Nazarewicz were joined on March 1, 2021. Amount: $3,601,000 for March 2015 to June 2027.

(Current) "Nuclear Computational Low Energy Initiative (NUCLEI)", co-PI on DOE Scientific Discovery Through Advanced Computing (SCIDAC): Partnership in Nuclear Physics, August 15, 2022-August 14, 2027. PI is Thomas Papenbrock at UT Knoxville. Michigan State PI is Witek Nazarewicz. Heiko Hergert is also a co-PI at Michigan State. Michigan State Amount: $1,200,000.

(Current) "FRIB Theory Alliance", co-PI on FRIB Theory Alliance grant renewal 2020-2025. Original PI was Filomena Nunes, and current PI is Scott Bogner. Amount: $5,536,000.

"From Quarks to Stars; A Quantum Computing Approach to the Nuclear Many-Body Problem", co-PI on DOE Quantum Horizons: QIS Research and Innovation for Nuclear Science grant, September 1, 2020 - August 31, 2023. PI was Morten Hjorth-Jensen. Amount: $750,000.

"Quantum Monte Carlo Simulations", PI on Los Alamos National Laboratory grant, 2019-2020. Amount: $50,000.

"Nuclear theory from first principles to forefront experiments", PI on DOE Nuclear Theory grant renewal, 2020-2021. Amount: $156,000.

"Nuclear theory from first principles to forefront experiments", PI on DOE Nuclear Theory grant, 2018-2020. Amount: $210,000.

"Large Scale Simulations of Nuclear Reactions", PI on NNSA grant 2018-2019. Amount: $100,000.

"Nuclear theory at North Carolina State University", co-PI on DOE Nuclear Theory group grant with Thomas Schäfer (PI), Chueng-Ryong Ji, and Mithat Ünsal, 2017-2020. Amount: $1,140,000.

"Nuclear theory at North Carolina State University", co-PI on DOE Nuclear Theory group grant with Thomas Schäfer (PI) and Chueng-Ryong Ji, 2015-2017. Amount: $550,000.

"Nuclear theory at North Carolina State University", co-PI on DOE Nuclear Theory group grant with Thomas Schäfer (PI), Stephen Cotanch, and Chueng-Ryong Ji, 2012-2015. Amount: $771,000.

"Nuclear theory at North Carolina State University", co-PI on DOE Nuclear Theory group grant with Thomas Schäfer (PI), Stephen Cotanch, and Chueng-Ryong Ji, 2009-2012. Amount: $745,000.

"Nuclear theory at North Carolina State University", co-PI on DOE Nuclear Theory group grant with Thomas Schäfer (PI), Stephen Cotanch, and Chueng-Ryong Ji, 2006-2019. Amount: $608,000.

"Nuclear Lattice Simulations with Chiral Effective Field Theory", PI on DOE Nuclear Theory grant, 2004-2006. Amount: $79,000.

"Infinite-dimensional Eigenvalue Problems", co-PI on NSF Computational Mathematics grant with Ilse Ipsen (PI), Stephen Cotanch, 2002-2003. Amount: $65,000.

Ph.D. Students Supervised

Zhengrong Qian (2024-present). Spring 2029 expected.

Patrick Cook (2022-present). Co-advised with Morten Hjorth-Jensen. Summer 2025 expected.

Aymeric McRae (2022-present). Co-advised with Morten Hjorth-Jensen. Spring 2026 expected.

Nick Cariello (2021-present). Co-advised with Morten Hjorth-Jensen. Spring 2026 expected.

Danny Jammooa (2020-present). Co-advised with Morten Hjorth-Jensen. Summer 2025 expected.

Ashe Hicks (2018-2024). "Algorithms for the Nuclear Many-Body Problem and Beyond". Researcher in predictive modeling at Auto-Owners Insurance.

Gabriel Given (2018-2024). "Advances in Simulating Fermions on a Quantum Computer".

Joseph Bonitati (2018-2024). "Eigenstate Preparation on Quantum Computers." Quantum computing researcher at KBR.

Jacob Watkins (2018-2024). "New Quantum Algorithms and Analyses for Hamiltonian Simulation." Quantum computing researcher at JP Morgan.

Avik Sarkar (2018-2023). "Eigenvector Continuation: Convergence and Emulators." Postdoctoral researcher in nuclear theory at Forschungszentrum Jülich.

Dillon Frame (NCSU 2014-2017, MSU 2017-2019). "*Ab Initio* Simulations of Light Nuclear Systems using Eigenvector Continuation and Auxiliary Field. Monte Carlo". Researcher at SAS Software.

Rongzheng He (NCSU 2014-2017, MSU 2017-2019). "Quantum Monte Carlo Studies of Fermi Systems in Lattice Effective Field Theory".

Serdar Elhatisari (NCSU 2010-2014). "Low Energy Continuum and Lattice Effective Field Theories". Faculty in nuclear theory at King Fahd University of Petroleum and Minerals.

Richard Thomson (NCSU 2004-2010). Co-advised with Chueng-Ryong Ji. "Application of Perturbative and Lattice Techniques to the Analysis of Nuclear Matter". Researcher at Alcatel.

Postdoctoral Researchers Supervised

Yuanzhuo Ma (2023-present).

Ning Li (2017-2020). Faculty in nuclear theory at Sun Yat-sen University.

Bing-Nan Lu (2017-2020). Faculty member in nuclear theory at Graduate School of China Academy of Engineering Physics.

Nathan Salwen (2001-2003). Financial engineer and leader of technology group at Andrew Davidson and Co.

Meetings Organized

Co-organizer of European Centre for Theoretical Studies TALENT Summer School
"Quantum Computing for Nuclear Physics", 2025

Co-organizer of European Centre for Theoretical Studies Workshop
"Nuclear and particle physics on a quantum computer: Where do we stand now?", 2023

Co-organizer of CEA-Saclay Workshop
"Eigenvector continuation and related methods in nuclear theory", 2023

Co-organizer for Institute for Nuclear Theory Program
"Intersection of nuclear structure and high-energy nuclear collisions", 2023

Co-organizer for FRIB Theory Alliance Summer School
"Quantum Computing and Nuclear Few- and Many-Body Problems", 2022

Local organizer for Division of Nuclear Physics Virtual Meeting, 2022

Co-organizer for Information and Statistics in Nuclear Experiment and Theory Scientists Workshop at Michigan State University, 2021

Faculty chair for Young Quantum Information Scientists Conference at Michigan State University, 2021

Co-convener for Low-Energy Nuclear Theory session of A.I in Nuclear Physics Workshop at Jefferson Laboratory, 2020

Co-organizer and Lecturer at Nuclear TALENT Summer School at ECT* "From Quarks and Gluons and Nuclear Forces and Structure", 2019

Co-organizer of International Conference on Proton-Emitting Nuclei at FRIB, 2019

Co-organizer of FRIB Theory Alliance Workshop at FRIB "From bound states to the continuum: Connecting bound state calculations with scattering and reaction theory", 2018

Co-Organizer of Ninth International Workshop on Chiral Dynamics, Durham, NC, 2018

Organizer of Midwest Theory Get-Together, Argonne National Laboratory, 2018

Co-organizer of Mainz Institute for Theoretical Physics Workshop
"Progress in Diagrammatic Monte Carlo Methods for Quantum Field Theories in Particle-, Nuclear-, and Condensed Matter Physics", 2017

Co-organizer of Mainz Institute for Theoretical Physics Workshop
"Progress in Diagrammatic Monte Carlo Methods for Quantum Field Theories in Particle-, Nuclear-, and Condensed Matter Physics", 2017

Co-organizer of Institute for Nuclear Theory Program
"Toward Predictive Theories of Nuclear Reactions Across the Isotopic Chart", 2017

Co-organizer of European Centre for Theoretical Studies Workshop
"Advances in Diagrammatic Monte Carlo", 2016

Scientific Co-advisor for Kavli Institute for Theoretical Physics Program
"Frontiers of Nuclear Physics", 2016

Co-organizer/Lecturer
"TALENT School on Nuclear Quantum Monte Carlo Methods" at NCSU, 2016

Co-organizer of European Centre for Theoretical Studies Workshop "Advances in Diagrammatic Monte Carlo for Quantum Field Theory Calculations in Nuclear, Particle, and Condensed Matter Physics", Trento, 2015

Organizer of Nuclear Theory Session at Southeastern Section of APS Meeting, Columbia, 2014

Co-organizer of Institute for Nuclear Theory Program on "Light Nuclei from First Principles", 2012

Organizing Committee for Hertz Foundation Summer Workshop, 2010

Co-organizer of XQCD Workshop at NCSU, 2008

Organizing Committee for Southeastern Section of APS Meeting, Raleigh, 2008

Co-organizer of 5th Interational Workshop on Chiral Dynamics, Chapel Hill, 2006

Recent Invited Talks

Physics Colloquium, Washington University in St. Louis, March 2025

Quantum Computing and Nuclear Theory Symposium, Center for Frontiers in Nuclear Science, Stony Brook University, February 2025

Workshop on Progress in Ab Initio Nuclear Theory, TRIUMF, February 2025

Nuclear Physics, AMO, Quantum Information Science Workshop, University of Massachusetts Boston, January 2025

Laboratory for Nuclear Science NPP Colloquium, Massachusetts Institute of Technology, December 2024

Lecture, Doctoral School of the Exact and Natural Sciences, Jagiellonian University, November 2024

CERN Theory Colloquium, Light Ion Collisions at the LHC Workshop, CERN, November 2024

Physics Colloquium, Temple University, October 2024

23rd International Conference on Few-Body Problems in Physics, Beijing, September 2024

45th International School of Nuclear Physics, Nuclei in the Laboratory and in Stars, Erice, September 2024

11th International Workshop on Chiral Dynamics, Ruhr-University Bochum, August 2024

Theory Seminar, Technical University of Darmstadt, July 2024

Institute of Theoretical Physics II Seminar at Ruhr-University Bochum, June 2024

HaloWeek'24 Workshop – nuclei at and beyond the driplines, Chalmers University of Technology, Gothenburg June 2024

2024 IPDPS Workshop on Quantum Computing Algorithms, Systems, and Applications, San Francisco, May 2024

NUCLEI Collaboration Meeting, Lawrence Berkeley National Laboratory, May 2024

Physics Colloquium, Argonne National Laboratory, May 2024

Workshop on Exploring Nuclear Physics across Energy Scales, Peking University, April 2024

Physics Colloquium at Michigan State University, March 2024

Colloquium at Brookhaven National Laboratory, March 2024

Physics Colloquium at University of Tennessee Knoxville, March 2024

Progress in Ab Initio Techniques in Nuclear Physics, TRIUMF, Vancouver, February 2024

CNRS-MSU International Research Laboratory on Nuclear Physics and Nuclear Astrophysics, December 2023

Cyclotron Colloquium, Texas A&M University, November 2023

ERC EXOTIC Workshop Frontiers in Nuclear Physics, Bethe Center for Theoretical Physics, University of Bonn, November 2023

Mathematical Physics Seminar, Purdue University, September 2023

Midwest Quantum Collaboratory Entanglement 2023, Purdue University, August 2023

SFB Colloquium, Institute for Nuclear Physics, Technische Universität Darmstadt, July 2023

Nuclear Theory Seminar, Forschungszentrum Jülich, June 2023

Theoretical Justifications and Motivations for Early High-Profile FRIB Experiments, FRIB Theory Alliance Topical Program, May 2023

RHIC-BES Online Seminar, May 2023

Progress in Ab Initio Techniques in Nuclear Physics, TRIUMF, Vancouver, February 2023

Hirschegg 2023 – Effective field theories for nuclei and nuclear matter EMMI Workshop and International Workshop XLIX on Gross Properties of Nuclei and Nuclear Excitations, January 2023

Physics Colloquium, University of Idaho, November 2022

Quantum Computing Overview Talk at NSAC Long Range Plan Town Hall Meeting on Nuclear Structure, Reactions, and Astrophysics, November 2022

Quarks, Hadrons, and Nuclei Seminar, University of Maryland, November 2022

Quantum Computing for Many-Body Problems: Atomic Nuclei, Neutrinos, and Other Strongly Correlated Fermi Systems IJCLab, November 2022

International Conference on Recent Progress in Many-Body Theories XXI University of North Carolina, September 2022

European Centre for Theoretical Studies Workshop "Nuclear physics at the edge of stability", July 2022

Halo Week 2022 Workshop, Bergen, July 2022

European Centre for Theoretical Studies Workshop "Connections between cold atoms and nuclear matter: From low to high energies", June 2022

EMMI Rapid Reaction Task Force, University of Heidelberg, "Nuclear physics confronts relativistic collisions of isobars", May 2022

Kavli Institute for Theoretical Physics Program, UC Santa Barbara, "Living Near Unitarity", May 2022

Nuclear Physics Seminar, University of Kentucky, March 2022

Tangram Nuclear Theory Collaboration, Tongji University, February 2022

Riken Brookhaven National Laboratory Research Center Workshop, "Physics Opportunities from the RHIC Isobar Run", January 2022

Quantum Journal Club, Brookhaven National Laboratory, December 2021

XXXIII International Workshop on High Energy Physics, November 2021

10th International Workshop on Chiral Dynamics, Institute for High Energy Physics, CAS, November 2021

Physics and Astronomy Colloquium, Iowa State University, October 2021

Theoretical Physics Colloquium, Arizona State University, September 2021

Nuclear Theory Seminar, University of California Los Angeles, August 2021

NUCLEI Collaboration Meeting, June 2021

European Centre for Theoretical Studies Workshop "Nuclear physics at the edge of stability", June 2021

American Physical Society April Meeting 2021, April 2021

Institute for Nuclear Theory Series on "Quantum Simulations for Nuclear Physics", April 2021

Institute for Nuclear Theory Series on "Frontiers in Nuclear Theory Colloquium", March 2021

Quarks, Hadrons and Nuclei Seminar, University of Maryland, March 2021

Seminar at the Center for Exotic Nuclear Studies, Institute for Basic Science, Daejeon, March 2021

Physics Colloquium, University of Illinois at Urbana-Champaign, February 2021

Lectures on Nuclear Lattice Simulations, Tohoku University, December 2020

Xth Tests of Nuclear Physics, University of Western Cape, December 2020

Physics Colloquium, Argonne National Laboratory, October 2020

Division of Nuclear Physics Meeting 2020, October 2020

ACPTP Nuclear Physics School 2020, Pohang, Korea, June 2020

Co-ordinated Mini-Lecture Series on Quantum Computing and Quantum Information Science for Nuclear Physics, Jefferson Laboratory, March 2020

Artificial Intelligence for Nuclear Physics Workshop, Jefferson Laboratory, March 2020

Nuclear Theory/RIKEN Seminar, Brookhaven National Laboratory, February 2020

Theoretical Division Seminar, Los Alamos National Laboratory, January 2020

Service Commitments for Michigan State University (2017-present)

Theoretical Nuclear Science Head, Facility for Rare Isotope Beams, Michigan State University, 2020-present

Executive Producer of "Rare Connections", a full-length documentary film about the science, people, and stories connected with the Facility for Rare Isotope Beams that is produced and directed by Ágnes Mócsy. Production started in 2021 and completed March 2025.
https://rareconnectionsfilm.com

Coordinator of the Director's Research Scholar Program designed to broaden participation in STEM fields by providing scholarships for undergraduate research, Facility for Rare Isotope Beams, Michigan State University, 2018-present

Founder and organizer of the Advanced Studies Gateway at FRIB, Facility for Rare Isotope Beams, Michigan State University, 2018-present. Brings together researchers, innovators, creative thinkers, artists, and performers from all fields and strengthens ties between Michigan State University and the community. Activities include public talks, concerts, and special events that are free and open to the public.
https://frib.msu.edu/gateway/index.html
https://www.youtube.com/@advancedstudiesgatewayatfr2471/videos

Featured panelist at the Michigan State University Green and White alumni and donor events at the St. Regis Hotel in Houston and the Four Seasons in Austin, 2022.

Faculty search committees at Michigan State University: high-energy experiment, 2018-2019; nuclear reaction theory, 2021-2022 (committee head); condensed matter theory, 2022-2023; condensed matter theory, 2023-2024; high-energy theory, 2023-2024

Other committees at Michigan State University: FRIB graduate admissions committee 2018-present; FRIB diversity committee, 2018-2021; FRIB outreach committee, 2019-present; FRIB Countdown committee, 2022; FRIB tenure and promotion committees, 2018-2019, 2021, 2024; FRIB space committee, 2020-present

Service Commitments for Academic Field

Chair Line for the Division of Nuclear Physics (Vice Chair, Chair Elect, Chair, Past Chair), American Physical Society, 2022-present. As Chair in 2024-2025, initiated a membership drive that increased membership by 15%.

Network for Neutrinos, Nuclear Astrophysics, and Symmetries Advisory Committee, 2021-present

Associate Editor for Frontiers in Physics, 2018-present

Nuclear Science Advisory Committee Long Range Plan Writing Committee, 2022-2023

Institute for Nuclear Theory National Advisory Committee, 2019-2023

Faculty search committees: senior fellow search at the Institute for Nuclear Theory 2022-2023, senior fellow search at the Institute for Nuclear Theory 2023-2024

Facility for Rare Isotope Beams (FRIB) Theory Alliance Executive Board, 2018-2021

Chair Line for Topical Group on Few-Body Systems and Multiparticle Dynamics (Vice Chair, Chair Elect, Chair, Past Chair), American Physical Society, 2016-2020