

Name, position and department

Kemp Plumb
Associate Professor
Department of Physics
Brown University

Work address

182 Hope Street, Box 1843
Providence, RI 02912 (401) 863-5815
kemp_plumb@brown.edu

Education

Queen's University, Kingston, Canada.	Engineering Physics	B.Sc. 2007
McGill University, Montréal, Canada.	Physics	M.Sc. 2009
University of Toronto, Toronto, Canada.	Physics	Ph.D. 2014
The Johns Hopkins University, Baltimore, MD.	Physics	Postdoc 2014–2017

Professional appointments

2025 – Current	Associate Professor of Physics, Brown University, Providence, RI
2024 – 2025	Christopher M. Barter Assistant Professor of Physics, Brown University, Providence, RI
2017– 2024	Assistant Professor, Brown University, Providence, RI

Publications

1. Prajwal M. Laxmeesha, Rajesh Dutta, Rajeev Kumar Rai, Sharup Sheikh, Michael F. DiScala, Uditha M. Jayathilake, Alexander Velic, Tarush Tandon, Tessa D. Tucker, Christoph Klewe, Haile Ambaye, Timothy Charlton, Tien-Lin Lee, Eric A. Stach, **Kemp W. Plumb**, Alexander X. Gray, Steven J. May *Evolution of electronic and magnetic properties in Mn- and Co-alloyed ferromagnetic kagome metal Fe_3Sn_2* . APL Materials **14** 011114 (2026).
2. A. de la Torre, Q. Wang, J. V. Riffle, J. Ruff, Shawna Hollen, **K. W. Plumb** *Dynamic phase transition in $1T-TaS_2$ via a thermal quench*. Nature Physics **21** 1267 (2025).
3. M. DiScala, V. Hseih, Y. Gu, D. J. Rizzo, J.M. Amontree, X. Yan, Q. Wang, M. Kapfer, T. Kim, M. Geiwitz, G. Natale, J. Pellicciari, J. C. Hone, K. S. Burch, D .N. Basov, C. R. Dean, V. Bisogni, **K. W. Plumb**, *Characterizing sample degradation from*

synchrotron based X-ray measurements of ultra-thin exfoliated flakes., Fron. Electron. Mater **5** (2025).

4. Piyush Sakrikar, Bin Shen, Eduardo De Toledo Poldi, Faranak Bahrami, Xiaodong Hu, Eric M. Kenney, Qiaochu Wang, Kyle W. Fruhling, Chennan Wang, Ritu Gupta, Rustem Khasanov, Hubertus Luetkens, Stuart A. Calder, Adam A. Aczel, Gilberto Fabbris, Russell J. Hemley, **Kemp W. Plumb**, Ying Ran, Philipp Gegenwart, Alexander A. Tsirlin, Daniel Haskel, Michael J. Graf, Fazel Tafti, *Pressure tuning of competing interactions on a honeycomb lattice*. Nature Communications, **16** 4712 (2025).
5. Thomas Halloran, Yishu Wang, **K. W. Plumb**, M.B. Stone, Barry Winn, M. K. Graves-Brook, J.A. Rodriguez-Rivera, Yiming Qui, Prashant Chauhan, Johannes Knolle, Roderich Moessner, N.P. Armitage, Tomohiro Takayama, Hidenori Takagi, Collin Broholm, *Continuum of magnetic excitations in the Kitaev honeycomb iridate $D_3LiIr_2O_6$* . npj Quantum Materials, **10** 35 (2025).
6. Q. Wang, Alberto de la Torre, J. A. Rodriguez-Rivera, Andrey Podlesnyak, Wei Tian, Masaaki Matsuda, Philip J. Ryan, Jong-Woo Kim, Jeffrey G. Rau, **Kemp W. Plumb**, *Pulling order back from the brink of disorder: Observation of a nodal line spin liquid and fluctuation stabilized order in K_2IrCl_6* . Physical Review X, **15** 021021 (2025).
7. J. V. Riffle, A. de la Torre, **K. W. Plumb**, Shawna M. Hollen *Cooling rate dependence of charge density wave phases in $1T-TaS_2$ studied by scanning tunnelling microscopy and X-ray diffraction.*, AIP Advances **14** 105303 (2024).[†][Editors Suggestion](#).
8. Haozhe Wang, Alberto de la Torre, Joseph T. Race, Qiaochu Wang, Jacob P. C. Ruff, Patrick M. Woodward, **Kemp W. Plumb**, David Walker, Weiwei Xie, *Pseudosymmetry in tetragonal perovskite $SrIrO_3$ synthesized under high pressure*. ACS Applied Electronic Materials **6** 6820 (2024).
9. Ifeanyi John Onurah, Jonathan Frassinetti, Qiaochu Wang, Muhammad Maikudi Isah, Pietro Bonfá, Jeffrey G. Rau, Jose A. Rodriguez-Rivera, A. I. Kolesnikov, Vesna F. Mitrovic, Samuele Sanna, **Kemp W. Plumb**, *Unraveling the magnetic ground-state in the alkali-metal lanthanide oxide Na_2PrO_3* , Phys. Rev. B **110** 064425 (2024).[†][Editors Suggestion](#).
10. Tsung-Han Yang, Tieyan Chang, Yu-Sheng Chen, **K. W. Plumb**, *Jahn-Teller driven quadrupolar ordering and spin orbital dimer formation in $GaNb_4Se_8$* , Phys. Rev. B **109**, 144101 (2024).
11. B. Cambell, J. V. Riffle, A. de la Torre, Q. Wang, **K. W. Plumb**, Shawna Hollen *Nanoscale electronic inhomogeneities in $1T-TaS_2$* , Phys. Rev. Matter. **8**, 034002 (2024).[†][Editors Suggestion](#).
12. M. DiScala, D. Staros, A. de la Torre, A. Lopez, M. Bartkowiak, C. Schulz, D. Wong, V. Bisogni, J. Pellicciari, B. Rubenstein, **K. W. Plumb**, *Elucidating the role of dimensionality on the electronic structure of the van der Waals antiferromagnet $NiPS_3$* , Adv. Physics Res. **2024**, 202300096 (2024).

13. A. de la Torre, B. Zager, F. Bahrami, M. H. Upton, J.-H. Kim, G. Fabbri, G.-H. Lee, W. Yang, D. Haskel, F. Tafti, **K. W. Plumb**, *Momentum-independent magnetic excitation continuum in the honeycomb iridate $H_3LiIr_2O_6$* , Nature Communications **4**, 518 (2023).
14. Haozhe Wang, Madalynn Marshall, Zhen Wang, **Kemp W. Plumb**, Martha Greenblatt, Yimei Zhu, David Walker, Weiwei Xie, *Non-centrosymmetric Sr_2IrO_4 obtained under high pressure*, Inorg. Chem. **62**, 2161 (2023)
15. Tsung-Han Yang, S. Kawamoto, T. Higo, SuYin Grass Wang, M. B. Stone, Jeorg Neufeind, Jacob P. C. Ruff, Milinda Abeykoon, Yu-Sheng Chen, S. Nakatsuji, **K. W. Plumb**, *Bond ordering and molecular spin-orbital fluctuations in the cluster Mott insulator $GaTa_4Se_8$* , Phys. Rev. Research **4**, 033123 (2022).
16. A. de la Torre, B. Zager, J. R. Chamorro, M. H. Upton, G. Fabbri, D. Haskel, D. Casa, T. M. McQueen, and **K. W. Plumb**, *On the electronic ground state of two non-magnetic honeycomb iridates*, Phys. Rev. Matter. **6**, 084406 (2022).
17. B. Zager, J. R. Chamorro, T. M. McQueen, Valentina Bisogni, J. Li, G. Fabbri, M. Mourigal, **K. W. Plumb**, *Electronic structure of the frustrated diamond lattice antiferromagnet $NiRh_2O_4$* , Phys. Rev. B **106**, 045134 (2022).
18. A. de la Torre, B. Zager, F. Bahrami, M. DiScala, J. R. Chamorro, M. H. Upton, G. Fabbri, D. Haskel, D. Casa, T. M. McQueen, F. Tafti, **K. W. Plumb**, *Enhanced hybridization in the electronic ground state of the intercalated honeycomb iridate $Ag_3LiIr_2O_6$* , Phys. Rev. B **104**, L100416 (2021).
19. Shu Zhang, Hitesh J. Changlani, **K. W. Plumb**, Oleg Tchernyshyov, Roderich Moessner, *Dynamical structure factor of the three-dimensional quantum spin liquid candidate $NaCaNi_2F_7$* , Phys. Rev. Lett. **122**, 167203 (2019).
20. **K. W. Plumb**, Hitesh J. Changlani, A. Scheie, Shu Zhang, J. W. Krizan, J. A. Rodriguez-Rivera, Yiming Qiu, B. Winn, R. J. Cava, C. L. Broholm, *Continuum of quantum fluctuations in a three dimensional $S = 1$ Heisenberg magnet*, Nature Physics **15**, 54 (2019).
21. **K. W. Plumb**, C. Stock, J. A. Rodriguez Rivera, J.-P. Castellan, J.-W. Taylor, W. Wu, S. R. Julian, and Y. J. Kim, *From mean-field localized magnetism to itinerant spin fluctuations in the “nonmetal-metal”- $FeCrAs$* , Phys. Rev. B **97**, 184431 (2018)
22. J. P. Sheckelton, **K. W. Plumb**, B. A. Trump, C. L. Broholm, T. M. McQueen, *Rearrangement of Van-der-Waals Stacking and Formation of a Singlet State at $T = 90$ K in a Cluster Magnet*. Inorg. Chem. Front. **4**, 481-490 (2017).
23. **K. W. Plumb**, Jennifer Morey, J. A. Rodriguez-Rivera, Hui Wu, A. A. Podlesnyak, T. M. McQueen, C. L. Broholm, *Antiferromagnetic and orbital ordering on a diamond lattice near quantum criticality*. Phys. Rev. X **6**, 041055 (2016).

24. M. B Sanders, J. W. Krizan, **K. W. Plumb**, T. M. McQueen, R. J. Cava, *NaSrMn₂F₇, NaCaFe₂F₇, and NaSrFe₂F₇: novel single crystal pyrochlore antiferromagnets*. J. Phys. Cond. Mat. **29**, 045801 (2016).
25. J. R. Morey, **K. W. Plumb**, C. M. Pasco, B. A. Trump, T. M. McQueen, S. M. Koopayeh, *Growth and characterization of iron scandium sulfide*. Journal of Crystal Growth (2016).
26. L. J. Sandilands, Y. Tian, A. A. Rejinders, H. S. Kim, **K. W. Plumb**, Young-June Kim, Hae-Young Kee, Kenneth S. Burch, *Spin-orbit excitations and electronic structure of the putative Kitaev magnet α -RuCl₃*. Phys. Rev. B **7**, 075144 (2016).
27. **K. W. Plumb**, Kyusung Hwang, Y. Qiu, Leland W. Harriger, G. E. Granroth, Alexander I. Kolesnikov, G. J. Shu, F. C. Chou, Ch. Rüegg, Yong Baek Kim, Young-June Kim, *Quasiparticle-continuum level repulsion in a quantum magnet*. Nature Physics **12**, 224 (2016).
28. J. A. Sears, M. Songvilay, **K. W. Plumb**, J. P. Clancy, Y. Qiu, Y. Zhao, D. Parsharll, Young-June Kim, *Magnetic order in α -RuCl₃: a honeycomb lattice quantum magnet with strong spin-orbit coupling*. Phys. Rev. B **91**, 144420 (2015).
29. Luke J. Sandilands, Yao Tian, **Kemp W. Plumb**, Young-June Kim, Kenneth S. Burch, *Scattering continuum and possible fractionalized excitations in α -RuCl₃*. Phys. Rev. Lett. **114**, 147201 (2015).
30. **K. W. Plumb**, J. P. Clancy, L. J. Sandilands, V. Vijay Shankar, Y. F. Hu, K. S. Burch, Hae-Young Kee, Young-June Kim, *α -RuCl₃: A spin-orbit assisted Mott insulator on a honeycomb lattice*. Phys. Rev. B **90**, 041112 (2014).
31. **K. W. Plumb**, A. T. Savici, G. E. Granroth, F. C. Chou, Young-June Kim, *High-energy continuum of magnetic excitations in the two-dimensional quantum antiferromagnet Sr₂CuO₂Cl₂*. Phys. Rev. B **89**, 180410 (2014).
32. **K. W. Plumb**, Zahra Yamani, M. Matsuda, G. J. Shu, B. Koteswararao, F. C. Chou, Young-June Kim, *Incommensurate dynamic correlations in the quasi-two-dimensional spin liquid BiCu₂PO₆*. Phys. Rev. B **88**, 024402 (2013).
33. **K. W. Plumb**, A. M. Cook, J. P. Clancy, A. I. Kolesnikov, B. C. Jeon, T. W. Noh, A. Paramakanti, Young-June Kim, *Neutron scattering study of spin-orbital locked magnetic excitations in a 5d-based double perovskite Ba₂FeReO₆*. Phys. Rev. B **87**, 184412 (2013).
34. J. P. Clancy, N. Chen, C. Y. Kim, W. F. Chen, **K. W. Plumb**, B. C. Jeon, T. W. Noh, Young-June Kim, *Spin-orbit coupling in iridium-based 5d compounds probed by x-ray absorption spectroscopy*. Phys. Rev. B **86**, 195131 (2012).

Invited scholarly presentations and lectures

1. *Exploring classical spin liquids in frustrated magnets*. Condensed Matter Seminar, Yale University (US). April 2026.
2. *Nodal line spin liquid and fluctuation stabilized order on the face centered cubic antiferromagnet $K_2\text{IrCl}_6$* . Julich Center for Neutron Science, Trends and Perspectives In Neutron Scattering. Quantum Materials. Theory and Experiment (De). Oct. 2025.
3. *Exploring classical spin liquids in frustrated magnets*. Condensed Matter Seminar, Rutgers University (US). Sept. 2025.
4. *A journey in quantum magnets nodal line spin liquids and fluctuation protected order*. Physics Colloquium, Clark University (US). Feb 2025.
5. *A journey in quantum magnets nodal line spin liquids and fluctuation protected order*. Condensed Matter Seminar, University of Illinois Urbana Champaign (US). Nov 2024.
6. *Explorations of frustrated magnets: from nodal lines to chiral stripes*. Physics Colloquium, Boston College (US). Nov 2024.
7. *Scalar chiral stripe order and time reversal symmetry breaking in a frustrated itinerant magnet*. Northeast Quantum Forum (US). Oct 2024.
8. *Pulling order from the brink of disorder: Observation of a nodal line spin liquid and fluctuation stabilized order in the FCC lattice $K_2\text{IrCl}_6$* Erwin Schrödinger International Institute, Workshop, Spin-Orbit Entangled Quantum Magnetism (AUST). Sept 2024.
9. *Momentum-independent magnetic excitation continuum the $\text{H}_3\text{LiIr}_2\text{O}_6$: evidence for a disordered quantum spin liquid.* *Unable to attend for personal reasons. International Conference on Inelastic x-ray scattering (JPN). Sept 2024.
10. *Deciphering the mysteries of quantum materials through scattering: synergies between neutron and x-ray science*. Plenary speaker at DOE Facility directors 6-way meeting, Oak Ridge National Lab (US). July 2024.
11. *Stripes of scalar spin chirality and origin of the anomalous Hall effect in CoNb_3S_6* . Dynamics of quantum materials, Los Alamos (US). June 2024.
12. *Order on the brink of disorder and observation of a nodal line spin liquid in $K_2\text{IrCl}_6$* . New insights into quantum materials: Scattering, other probes, and theory workshop, Minneapolis (US) (could not attend due to illness). May 2024.
13. *Stripes of scalar spin chirality and nanoscale chiral domains in an itinerant triangular lattice magnet*. NSLS-II users meeting, Brookhaven National Lab (US). May 2024.
14. *Momentum independent excitation continuum in the honeycomb irridate $\text{H}_3\text{LiIr}_2\text{O}_6$* . APS March Meeting, Minneapolis (US). March 2024.
15. *Order from-and-by-disorder: spin and orbital dynamics on the highly frustrated FCC lattice*. Condensed matter seminar, Duke University (US). Nov 2023.

16. *Order-by-quantum disorder and magnetic phase competition in K_2IrCl_6* . ORNL users meeting, ORNL (US). June 2023.
17. *Order from-and-by-disorder*. Condensed matter seminar, University of Tennessee Knoxville (US). April 2023.
18. *Prospects for investigation frustrated magnets with coherent x-rays*. NSLS-II users meeting, Brookhaven National Lab (US). April 2023.
19. *Exploring quantum magnets with neutrons and x-rays*. Physics colloquium, Northeastern University (US). May 2023.
20. *Prospects for coherent x-rays to access intrinsic dynamical heterogeneity in frustrated magnets*. Fluctuation and excitations of orders in the nanoscale workshop 1, spatio-temporal characterization of quantum Materials, Lawrence Berkeley National Lab ALS (US). Jan 2023.
21. *Momentum resolved spectroscopies of quantum materials*. Quantum materials young investigator workshop, Oak Ridge National Lab (US). August 2022.
22. *Orbital dimer singlets and fluctuations in a cluster Mott insulator*. University of California Santa Barbara (US). May 2022.
23. *Evidence for delocalized magnetism in $Ag_3LiIr_2O_6$* . Oak Ridge National Lab workshop on quantum materials across multiple length Scales (remote). August 2021.
24. *Spin orbital dimer singlets and fluctuations in a cluster Mott insulator*. Oak Ridge National Lab joint nanoscience and neutron science users meeting (remote). August 2021.
25. *Spin orbital dimer singlets and vibronic fluctuations in a cluster Mott insulator*. University of California Los Angeles (US). May 2021.
26. *Evidence for delocalized magnetism in $Ag_3LiIr_2O_6$* . APS March Meeting (remote). March 2021.
27. *Spin orbital dimer singlets and vibronic fluctuations in a cluster Mott insulator*. Condensed matter physics and materials science seminar, Brookhaven National Laboratory (US). Nov 2020.
28. *Continuum of magnetic excitations in the Heisenberg $S=1$ pyrochlore antiferromagnet $NaCaNi_2F_7$* . *Cancelled due to COVID 19 Travel Restrictions. JCNS workshop trends and perspectives in neutron scattering: Quantum materials from bulk to nano, Evangelische Akademie (Ge). Oct 2020.
29. *Continuum of magnetic excitations in the Heisenberg $S=1$ pyrochlore antiferromagnet $NaCaNi_2F_7$* . *Cancelled due to COVID 19 Travel Restrictions. Polarized neutrons for condensed matter investigations, Annapolis (US). July 2020.

30. *Perspectives on x-ray spectroscopies for frustrated magnets*. Exploring new science frontiers at NSLS-II, Brookhaven National Laboratory (US). Oct 2019.
31. *X-ray and neutron science of quantum materials*. NIST center for neutron research summer school on fundamentals of neutron scattering and spectroscopy, Gaithersburg (US). July 2019.
32. *X-ray and neutron science of quantum materials*. CalFront19: Frontiers of correlated and topological matter, UC Irvine (US). June 2019.
33. *Emergent states in frustrated magnets, investigations of a Coulomb spin liquid*. Canadian Association of Physicists Congress, Burnaby (CA) . June 2019.
34. *Emergent states in frustrated magnets, investigations of a Coulomb spin liquid*. McMaster University, Hamilton (CA). Nov. 2018.
35. *Continuum of magnetic excitations in the Heisenberg $S=1$ pyrochlore antiferromagnet $\text{NaCaNi}_2\text{F}_7$* . Cosener's house, Abingdon (UK). July 2018.
36. *Continuum of magnetic excitations in the Heisenberg $S=1$ pyrochlore antiferromagnet $\text{NaCaNi}_2\text{F}_7$* . American conference on Neutron Scattering, College Park, Maryland (US). June 2018.
37. *$\text{NaCaNi}_2\text{F}_7$: A kinetically arrested spin liquid on a pyrochlore lattice*. The Institute for Solid State Physics, Tokyo (JP).. May 2017.
38. *Experimental signatures of a spin-liquid in a three dimensional frustrated magnet*. Notre Dame University, South Bend (US). March 2017.
39. *Experimental evidence for a spin liquid in a three dimensional Heisenberg magnet*. Brown University, Providence (US). February 2017.
40. *Giant anisotropic interactions in the frustrated quantum magnet BiCu_2PO_6* . APS March Meeting, San Antonio (US). March 2015.
41. *Novel spin excitations in the frustrated quantum magnet BiCu_2PO_6* . Paul Scherrer Institut, Villigen (CH). May 2014.
42. *Novel spin excitations in the frustrated quantum magnet BiCu_2PO_6* . Johns Hopkins University, Baltimore (US). April 2014.
43. *Novel spin excitations in the frustrated quantum magnet BiCu_2PO_6* . Oak Ridge National Laboratory, Oak Ridge (US). February 2014.

Contributed presentations

1. *Nodal line spin liquid and fluctuation stabilized order on the face centered cubic antiferromagnet K_2IrCl_6* International Conference on Highly Frustrated Magnetism, Hamilton, (CA). April 2025. .

2. *Continuum of Magnetic Excitations in the Heisenberg $S=1$ Pyrochlore Antiferromagnet $\text{NaCaNi}_2\text{F}_7$* International Conference on Frustrated magnetism, UC Davis (US). June 2018. .
3. *Spin and lattice dynamics in $\text{NaCaNi}_2\text{F}_7$ and GaTa_4Se_8* . Quantum Condensed Matter Division's Young Investigators Workshop, Oak Ridge National Laboratory (US). June 2017.
4. *Magnetic excitations in a pyrochlore Heisenberg antiferromagnet: $\text{NaCaNi}_2\text{F}_7$* . APS March Meeting, New Orleans (US). March 2017.
5. *Antiferromagnetic and orbital ordering on a diamond lattice near quantum criticality (poster)*. Gordon Conference on Strongly Correlated Electron Systems, South Hadley (US).. June 2016.
6. *Magnetic Ordering in FeSc_2S_4* . APS March Meeting, Baltimore (US). March 2016.
7. *Incommensurate dynamic correlations and continuum scattering in BiCu_2PO_6* . APS March Meeting, Denver (US). March 2015.
8. *Incommensurate dynamic correlations and continuum scattering in quantum-disordered BiCu_2PO_6 (poster)*. Canadian Institute for Neutron Scattering Annual General Meeting, Hamilton, (CA). October 2013. *Award for best student poster.
9. *Incommensurate dynamic correlations and continuum scattering in quantum-disordered BiCu_2PO_6 (poster)*. International Conference on Neutron Scattering, Edinburgh, (UK). July 2013.
10. *Spin-orbital locked magnetic excitations in $\text{Ba}_2\text{FeReO}_6$* . Canadian Association of Physics Congress, Montréal, (CA).. April 2013.
11. *Incommensurate spin excitations in BiCu_2PO_6 (poster)*. American Conference on Neutron Scattering, Washington, (US). June 2012. *ACNS Outstanding student poster award
12. *Incommensurate spin excitations in BiCu_2PO_6 (poster)*. International Conference on Highly Frustrated Magnetism, Hamilton, (CA). June 2012.
13. *Multi-parameter analysis of spindle and cell cycle dynamics in asymmetric cell division*. Biophysical Society Annual Meeting, Boston, (US). February 2009.

Research Grants

Proposals funded

1. NSF, *CAREER: Deciphering emergent orders in frustrated magnets across multiple length and energy scales*. 09/2025 - 08/2030, PI, \$1, 128, 656.
2. NSF, *EPSCoR Research Fellows: Resonant X-ray Studies of Magnetic Structures and Excitations in the Two-Dimensional Limit*. 02/25 - 01/2026, PI, \$295, 495.
3. Brown University SEED Award, *Controlling magnetic ground states in frustrated magnets*. 03/2023 - 07/2024, PI, \$49, 100.
4. DOE, Building EPSCoR-State/National Laboratory Partnerships, *Deciphering Low Energy Spin and Orbital Dynamics in Frustrated Quantum Magnets*. 09/2020 - 09/2023, PI, \$700, 000.
5. DOE, Early Career, *Deciphering Spin and Orbital Dynamics in Quantum Materials through Neutron Scattering*. 09/2020 - 02/2026, PI, \$750, 000 + \$75,00 supplement.
6. Brown University SEED Award, *A new direction in building quantum computers: 2D material 'lego'*. 01/2020 - 06/2021, Co-PI, \$45, 000.
7. NSF, *QII-TAQS: Spatially and temporally resolved ultrasensitive magnetic sensing of quantum materials*. 08/2019 - 08/2021, Co-PI, \$2, 000, 000.
8. NSF, EPSCoRE, *Harnessing the data revolution for the quantum leap: From quantum control to quantum materials*. 01/2019, Co-PI, \$3, 888, 854.
9. Brown University Salomon Award, *Investigating a new class of spin-orbit entangled quantum materials.*, 01/2018 - 06/2019, PI, \$15, 000.

Service

To the University

2024 – present	Director of Physics Master's program
2024 – present	Brown National Lab Day planning committee
2024	Brown – University of Puerto-Rico school on computational physics (PROBE) faculty advisor
2023 – 2024	Faculty search committee, physics department, “Condensed Matter Theory”
2022 – 2023	Physics comprehensive exam task force
2022 – 2024	Graduate advisor
2022 – 2024	Master's advisor
2019 – 2020	First year advisor
2018 – 2020	Physics department committee for computation

2017 – 2024 Physics department condensed matter seminar committee
 2017 – 2024 Physics department colloquium committee
 2017 – 2019 Physics department graduate admissions committee
 2017 – 2018 Faculty search committee, physics department, “Condensed Matter Experiment”

To the profession

2026 Spectroscopy Instrument Suite Review, Triple-axis subcommittee, Oak Ridge National Lab
 2025 Chair and organizer for American Physical Society New England Section Annual Meeting
 2024 Reviewer for the Swiss National Science Foundation
 2024 – present Physical Review B Early Career Advisory Board member
 2023 Reviewer and panelist for National Science Foundation
 2023 Reviewer for National Science and Engineering Council Canada
 2023 – present Proposal review panel, soft X-rays, photoelectrons and infrared, National Synchrotron Light Source II, Brookhaven National Lab
 2022 – 2026 **Science review committee chair**, direct geometry (low Energy) panel, neutron scattering science division, ORNL
 2022 Invited professional lecture at NIST center for neutron research school on inelastic neutron scattering
 2021 – present Scientific reviewer for DOE Basic Energy Sciences
 2021 – 2022 American Conference on Neutron Scattering, Hard Condensed Matter Program co-chair
 2021 – 2022 APS March Meeting focus session on quantum spin liquids co-organizer
 2020 – present Advanced Photon Source, proposal review panel for Condensed Matter Scattering
 2020 – 2021 APS March Meeting focus session on low dimensional magnetism co-organizer
 2020 Scientific reviewer for DOE Office of Science Graduate Student Research (SCGSR) program
 2019 – present Science review committee, Cornell High Energy Synchrotron Source
 2019 Invited professional lecture at NIST center for neutron research summer school
 2019 Invited professional lecture at NSF sponsored summer school, CalFront19: Frontiers of correlated and topological matter
 2018 – 2019 Organizing committee, National High Magnetic Field Lab winter theory school
 2018 – present Science review committee, NIST center for neutron research
 2017 – 2022 Science review committee, subject matter expert for direct Geometry (low energy), neutron scattering science division, ORNL
 2016 – present Referee: *Physical Review Letters*, *Physical Review X*, *Physical Review B*, *Physical Review Materials*, *Science Advances*, *Nature Communications*, *Nature Physics*, *Journal of Physics Condensed Matter*, *NPJ Quantum Materials*

Academic honors, fellowships, honorary societies

2018 – 2019 Sheridan Junior Faculty Teaching Fellows Program.

Teaching

Spring 2026	PHYS 2420, Solid State Physics II	<i>enrollment: 10</i>
Fall 2025	PHYS 1410, Quantum Mechanics A	<i>enrollment: 49</i>
Spring 2025	PHYS 2420, Solid State Physics II	<i>enrollment: 12</i>
Fall 2024	PHYS 1410, Quantum Mechanics A	<i>enrollment: 40</i>
Spring 2024	PHYS 2420, Solid State Physics II	<i>enrollment: 23</i>
Fall 2023	PHYS 1410, Quantum Mechanics A	<i>enrollment: 38</i>
Spring 2023	PHYS 0040, Basic Physics B	<i>enrollment: 178</i>
Spring 2022	PHYS 1990, Senior Conference Course	<i>enrollment: 1</i>
Fall 2021	PHYS 1530, Thermal Physics	<i>enrollment: 26</i>
Spring 2021	PHYS 1600/2600, Computational Physics	<i>enrollment: 16 (11/1600, 5/2600)</i>
Fall 2020	PHYS 1530, Thermal Physics	<i>enrollment: 26</i>
Spring 2020	PHYS 2711, Seminar in Research Topics - Magnetism in Condensed Matter	<i>enrollment: 1</i>
Spring 2020	PHYS 1600/2600, Computational Physics	<i>enrollment: 13 (6/1600, 7/2600)</i>
Spring 2019	PHYS 1990, Senior Conference Course	<i>enrollment: 1</i>
Spring 2019	PHYS 1980, Undergraduate Research in Physics	<i>enrollment: 1</i>
Spring 2019	PHYS 1600/2600, Computational Physics	<i>enrollment: 31 (6/1600, 5/2600)</i>
Fall 2018	PHYS 2710, Seminar in Research Topics - Magnetism in Condensed Matter	<i>enrollment: 1</i>
Fall 2018	PHYS 0050, Foundations of Mechanics	<i>enrollment: 27</i>
Spring 2018	PHYS 1600/2600, Computational Physics	<i>enrollment: 27 (12/1600, 15/2600)</i>

Mentoring

Graduate advisees

Naugle, Grace	Brown University, Department of Physics (2024 –)
Lin, Jia-Ann	Brown University, Department of Physics (2024 –)
Discala, Michael	Brown University, Department of Physics <i>Graduated Nov 2025.</i>
Wang, Qiaochu	Brown University, Department of Physics, <i>Graduated April 2025, Currently Process Engineer at Lam Research.</i>
Zager, Ben	Brown University, Department of Physics, <i>Graduated April 2024, Currently postdoc Brookhaven National Lab.</i>
Yang, Tsung-Han	Brown University, Department of Physics, <i>Graduated April 2023, Currently postdoc Oak Ridge National Lab.</i>
Tong, Mergen	Brown University, Department of Physics (2019 – 2021)
Yan, Xingchi	Brown University, Department of Chemistry (Spring 2018)

Wang, Sijia	Brown University, Department of Physics (Masters)
Yuan, Zhe	Brown University, Department of Physics (Masters)
Renjit, Sharanya	Brown University, Department of Physics (Masters)
Wei, Zongli	Brown University, Department of Physics (Masters)
Xu, Boyuan	Brown University, Department of Physics (Masters)
Tan, Weilun	Brown University, Department of Physics (Masters)

Postdoctoral fellows

de la Torre Duran, Alberto (2019 – 2023) **Currently Assistant Professor, NorthEastern University.*

International/visiting graduate students

Wouters, Jurre	Visiting Masters student from University of Twente, Netherlands (2019 – 2020)
Fassinetti, Jonathan	Università di Bologna (2021–2024)

Undergraduate advisees

Augustinov, Ivan	Brown University Senior Thesis (February 2024 – May 2026)
González Marcano, Rodrigo	PROBE summer intern, Leadership Alliance, (June 2025 – August 2025)
Ayala Fernandez, Damian	PROBE summer intern, Leadership Alliance, (June 2025 – August 2025)
Ebersman, Maxwell	Brown University Senior Thesis (August 2024 – April 2025)
Durantel, Adrien	PROBE summer intern, Leadership Alliance, (June 2024 – August 2024)
Caban, Lazaro	PROBE summer intern, Leadership Alliance, (June 2024 – August 2024)
Barios, Jeremy	New York University, Leadership Alliance Undergraduate Researcher (May 2022 – August 2022)
Gantenberg, Cullen	The Ohio State University, Leadership Alliance Undergraduate Researcher (May 2022 – August 2022)
Kinnally, Sean	Brown University, Senior Thesis (Sept 2021 – May 2022)
Seet, RuiXi	Brown University, Senior Thesis (Sept 2019 – May 2020)
Makharia, Shubham	Brown University, UTRA (May 2019 – Sept 2019)
Carmichael, Deven	Brown University, UTRA (May 2019 – May 2020)
Hess, Jonathan	Brown University UTRA (May 2018 – May 2020)
Kim, Hessoo	Brown University, Senior Thesis (Dec 2018 – April 2019)
Lawson, Alexander	Brown University UTRA (May 2018 – December 2018)

Served on PhD thesis examination committees of:

- Annette Lopez (Physics)
- Daniel Staros (Chemistry)
- Boyuan Xu (Physics)

- Rong Cong (Physics)
- Eric Garcia (Physics)
- Yasith Amarasinghe (Engineering)

Served on PhD preliminary examination committees of:

- Hongquan Liu (Physics)
- Boyuan Xu (Physics)
- Annette Lopez (Physics)
- Silverio Johnson (Physics)
- Daniel Staros (Chemistry)
- Ken Ma (Physics)
- Dong Li (Eng, Solid Mechanics)
- Yiou Zhang (Physics)

External PhD thesis referee for:

- Victor Porée, Department of Physics, University of Basel, Supervisor: Michel Kenzelmann
- Jake Riffle, Department of Physics, University of New Hampshire, Supervisor: Shawna Hollen