Kaden Hazzard

Curriculum Vitae

MS-61 6100 Main Street
Houston, TX 77251
(607) 220 8211
kaden.hazzard@gmail.com
http://kaden.rice.edu
Rice University

Employment and other appointments

July 2021–... **Rice University**
Associate Professor of Physics and Astronomy
Director, Rice Quantum Initiative (2024–)
Chair, Graduate Program in Physics and Astronomy (2024–)

2014–2021 **Rice University**
Assistant Professor of Physics and Astronomy

2010–2014 **JILA, NIST, University of Colorado, Boulder**
JILA research associate → NRC postdoctoral fellow at JILA → JILA senior research associate (advisor Ana Maria Rey)

2004–2010 **Laboratory of Atomic and Solid-State Physics, Cornell University**
Graduate research assistant (advisor Erich Mueller)

Visiting appointments

July–August 2022 **University of California Davis**
Visiting Associate Professor in the Department of Physics and Astronomy

Education

2010 **Ph.D. physics**, *Cornell University*
Thesis title *Quantum phase transitions in cold atoms and low temperature solids*
Advisor: Erich Mueller

2009 **M.S. physics**, *Cornell University*

2004 **B.S. physics, math**, *The Ohio State University*
honors in the liberal arts; also finished all chemistry minor courses.

Awards and honors

Awards & honors (external to Rice or institution at the time)

2023 Fellow of the American Physical Society (APS)

2019 NSF CAREER Award

2018 Fellow, Institute of Quantum Science and Engineering, Texas A&M

2017 New Journal of Physics Outstanding Referee

2017 AI Grant Fellow (Fall 2017) for machine learning applied to quantum dynamics

2010 Springer thesis prize: thesis selected to be published as a book

Awards from Rice

2024 Charles W. Duncan, Jr. Achievement Award, for outstanding performance in the areas of both teaching and scholarship. (One of two across the university)

2019, 2022, & 2023 Career Champion Award, Rice Center for Career Development (Award for Impacting Graduating Students' Careers)

2022 Faculty Teaching and Mentoring Award, Rice Graduate Student Association (one of two across the university)

2018 & 2021 Finalist for Sophia Meyer Farb Prize for Teaching at Rice University (one of about 5 across entire university)

Professional service (outside Rice)

APS DAMOP Quantum Information Program Committee (member), 2026–present

Steering committee, workshop co-organizer: Texas Quantum Summit, Fall 2026

Workshop co-organizer: Rice Defense Research Advancement Quantum Frontiers Summit, Fall 2026

Red team member, NSF Quantum Leap Challenge Institute site visit rehearsal, 2026

Site Visit Panelist: National Science Foundation Virtual Site Visit, 2025

Steering committee, workshop co-organizer: Texas Quantum Summit, Fall 2025

Workshop co-organizer: C60 @ 40: Celebrating Nanoscience and Quantum Frontiers, 2025

Workshop organizer: The Future of Atomic, Molecular, and Optical Theory, Harvard ITAMP. (co-organizers: H. Sadeghpour), 2024

Workshop organizer: Quantum Materials and Entanglement, Rice University. (co-organizers: Q. Si, G. Aeppli, M. Yi, P. Dai, Y. Xie), 2024

Theoretical AMO Community (TAMOC) co-chair, May 2022–2024

Site Visit Panelist: National Science Foundation site visit to an NSF-funded Center, 2024

Workshop Organizer: International Conference on Quantum Vacuum in Matter, Rice University. (co-organizers J. Kono, H. Zhu), 2023

Workshop Organizer: Quantum Information Processing Systems (QuantIPS), Rice University. (co-organizers: A. Kyrillidis, N.-H. Chia, L. Duenas-Osorio, G. Pagano), 2023

Faculty Promotion & Tenure letter writer, since 2023

Virtual AMO Seminar (VAMOS) DAMOP committee, July 2021–2023

APS DAMOP education committee, 2020–2023

APS DAMOP program committee, 2019–2022
Subcommittee chair: DAMOP March Meeting 2020 program
Subcommittee chair: DAMOP March Meeting 2021 program

APS DAMOP Deborah Jin Doctoral Thesis Award Committee, 2022

Workshop session organizer: "Optimization in Quantum Computing and vice-versa" session at INFORMS workshop (co-organizers: A. Kyrillidis, A. Kalev, L. Duenas-Osorio, G. Pagano), October 2021

Conference organizer: Kavli Institute for Theoretical Physics (KITP) conference on "Non-Equilibrium Universality in Many-Body Physics," (co-organizers: P. Calabrese, L. F. Cugliandolo, M Maghrebi, and J. Schmiedmayer), September 2021

Organizer of 2021 Boulder Summer School on Condensed Matter Physics. Summer school topic: "Ultracold Matter" A month-long, NSF-sponsored summer school for advanced graduate students and postdocs, bringing in roughly 25 lecturers at Univ. of Colorado-Boulder (co-organizers I. Spielman, A. M. Rey, and L. Radzihovsky), July 2021.

Site Visit Panelist: National Science Foundation site visit to an NSF-funded quantum information Center, Nov. 2020

APS Group for Few-body Physics and Multiparticle Dynamics (GFB) nominating committee, 2020–2021

Hacking for Defense scientific contact. 2020-present. Scientific contact for University of Alabama-Huntsville's *Hacking for Defense* program.

Workshop steering committee member: Kavli-Rice workshop on quantum sensing, part of "Sensing the Future: The Future of Sensing" series, Dec. 2019.

Site Visit Panelist: National Science Foundation site visit to an NSF-funded atomic, molecular, and optical physics (AMO) Center, Oct. 2019

National Science Foundation workshop on quantum simulators for an NSF Convergence Accelerator Program, Sep. 2019

Workshop organizer: Harvard ITAMP workshop on "Quantum Phases of Fermions in Optical Lattices: The Low-Temperature Frontiers," Oct. 2018 (co-organizers: H. Sadeghpour, D. Greif, R. Hulet, M. Greiner)

Editorial board member PLOS ONE, Academic Editor on Quantum Physics team (2017–2020)

Workshop organizer: Rice Center for Quantum Materials "Interacting Quantum Systems Out of Equilibrium," May 2016 (co-organizers: D. Natelson, J. Kono, and M. Foster)

Consulting:
- *Council member:* Gerson Lehrman Group (2018–present)
- *Scientific consultant*: QWidgetCo, quantum technology startup (2017–19)
- *The Implementation Group:* external grant reviewer (starting 2018)

Grant proposal referee and/or panel member:

- National Science Foundation (NSF)
- Department of Energy (DOE)
- Air Force Office of Scientific Research (AFOSR)
- Army Research Office (ARO)
- W. M. Keck Foundation
- Deutsche Forschungsgemeinschaft (German Research Foundation)
- Austrian Science Fund (FWF)
- Japan Society for the Promotion of Science (JSPS)
- ETH Zurich Research Commission
- European Commission's Future and Emerging Technologies Programme
- Research Grant Council (RGC) of Hong Kong
- Czech Science Foundation

Book proposal referee: Oxford University Press, Cambridge University Press, Springer, Taylor and Francis

Journal referee: Nature, Science, Nature Physics, Nature Materials, Nature Communications, Science Advances, Proceedings of National Academy of Sciences (PNAS), Physical Review X, Physical Review Letters, Physical Review A, Physical Review B, New Journal of Physics, Scientific Reports, SciPost, Advanced Quantum Technologies, Accounts in Chemical Research, Frontiers of Physics, Quantum Information Processing, Annals of Physics, Journal of Physics B, Physics Letters A, Physica A

External PhD thesis examiner for researchers outside of Rice, for written thesis and oral exams.

Teaching

Spring 2027	**Electricity and Magnetism**, Physics 104 (undergraduate course)
Fall 2026	**Intermediate Mechanics**, Physics 301 (undergraduate course)
Spring 2026	**Electricity and Magnetism**, Physics 104 (undergraduate course)
Fall 2025	**Intermediate Mechanics**, Physics 301 (undergraduate course)
Fall 2024	**Classical Dynamics**, Physics 515 (graduate course)
Fall 2024	**Intermediate Mechanics**, Physics 301 (undergraduate course)
Spring 2024	**Mathematical Methods**, Physics 516 (graduate course)
Fall 2023	**Intermediate Mechanics**, Physics 301 (undergraduate course)
Fall 2022	**Intermediate Mechanics**, Physics 301 (undergraduate course)
Spring 2022	**Statistical Mechanics**, Physics 526 (graduate course)
Fall 2021	**Intermediate Mechanics**, Physics 301 (undergraduate course)
Spring 2021	**Statistical Mechanics**, Physics 526 (graduate course)
Fall 2020	**Intermediate Mechanics**, Physics 301 (undergraduate course)
Spring 2020	**Statistical Mechanics**, Physics 526 (graduate course)
Spring 2019	**Statistical Mechanics**, Physics 526 (graduate course)

Spring 2018 **Statistical Mechanics**, Physics 526 (graduate course)
Fall 2017 **Intermediate Mechanics**, Physics 301 (undergraduate course)
Spring 2017 **Fundamentals of Quantum Optics**, Physics 572 (graduate course)
Fall 2016 **Intermediate Mechanics**, Physics 301 (undergraduate course)
Spring 2016 **Engineering quantum matter in AMO systems**, Physics 600 (graduate course)
Fall 2015 **Intermediate Mechanics**, Physics 301 (undergraduate course)
Spring 2015 **Fundamentals of Quantum Optics**, Physics 572 (graduate course)

Created and filmed guest lessons on ultracold matter and quantum computing for a "flipped" sophomore Rice electrical engineering course; presented or filmed several guest lectures at Rice, some broadcast elsewhere. Before joining Rice, privately tutored, and substitute lectured, TA'ed, and graded 10 courses.

Press on research

A selection of press coverage of the group's research. For other press coverage (on grants, quoted in news, interviews, etc.), see my website.

Science **394**, 665 (2026)
- "European XFEL's Quantum Gas Microscope Observes 3-Component Hubbard System," Quantum Zeitgeist
- "Quantum gas microscope: Interactions in a three-component Hubbard system can be precisely controlled," U. of Hamburg
- Quantum gas microscope: Interactions in a 3-component Hubbard system can be precisely controlled, Rice News

arxiv:2602.06108 (2026)
- "Quantum Material's Dynamics Remotely Controlled, Bridging Simulator and Computer Worlds," Quantum Zeitgeist

PRX Quantum **7**, 033011 (2026)
- "A Blueprint for a Quantum Simulator Made of Helium Atoms," Synopsis inAPS *Physics* **19**, s79 (2026)
- "Helium-3 Atoms Could Enable 3× Faster Quantum Simulations," Quantum Zeitgeist
- "Helium lifts new quantum computing concept," University of Chicago, Pritzker School of Molecular Engineering, September 8, 2026.
- "Helium-3 lifts new quantum computing concept with faster tunneling rates," Phys.org, September 8, 2026 (reprint of the University of Chicago story).
- "Helium-3 Enters a Different Quantum-Computer Design," *The Brook Report*, issue 11, item 6, September 28, 2026.

Phys. Rev. Lett. **136**, 250402 (2026)

- "Rice-led team reveals how trios of quantum particles form checkerboard patterns," Rice News
- "Study Reveals How Trios of Quantum Particles Form Checkerboard Patterns," UC Davis, Letters & Science
- "Harvey Mudd Physicist Helps Develop New Theory of Quantum Particle Behavior," Harvey Mudd College News
- "Trios of quantum particles form checkerboard layouts when particle density hits sweet spot," phys.org

Science Advances **11**, eadt1691 (2025)

- "Scientists observe exotic quantum phase once thought impossible," Rice News
- "Exotic quantum phase, once thought impossible, was just observed in the lab," earth.com
- "Scientists Discover Exotic Quantum Phase Once Considered Impossible," Bioengineer.org

Nature **637**, 314 (2025)

- " 'Paraparticles' Would Be a Third Kingdom of Quantum Particle," Quanta Magazine
- "The Quest to Prove the Existence of a New Type of Quantum Particle," Wired
- "Reality's missing piece," New Scientist cover feature article (July 2026)
- "Physicists discover that 'impossible' particles could actually be real," New Scientist (news item, 2025)
- "Physicists describe exotic 'paraparticles' that defy categorization," Nature News
- "Theorists propose a completely new class of quantum particles," Physics World
- "Scientists Just Discovered an Impossible Particle," Popular Mechanics
- "Exotic 'Paraparticles' That Defy Categorization May Exist in Many Dimensions," Scientific American
- "Strange Swapping Behavior Defines New Particle Candidate," Physics **18**, 11
- "Physics Said These Quantum Particles Couldn't Exist. Now, Math Has Proven They Can," IFLScience
- "Funky maths suggests a new type of particle unknown to physics," Cosmos Magazine
- YouTube: Sabine Hossenfelder, Tech AI connect channel, . . . , The Knowmads Podcast, reddit (e.g. r/science, r/ParticlePhysics, r/HotScienceNews, . . .), Quantum Insider, Max Planck Institute of Quantum Optics, le Scienze, Real Clear Science, Gadgets360, Rice News, Rice Thresher, Rice Research Review, jomfruland, Earth.com, BGR News, MSN, AOL, yahoo! Social Bites, Prevention, LNG in Northern BC, der Standard, Spektrum.de, ZME Science, ZAP, Descopera, La Republica, Inovacao Tecnologica, Notizie In, gre-wi, AB-News, ScienMag, MirageNews, Wolfram Community Blog, phys.org, EurekAlert!, . . .

Physical Review Letters **132**, 083401 (2024) *[Editor's Suggestion]*

- "A General Equation of State for a Quantum Simulator," *Synopsis* in Physics **17**, s27 (2024)
- "Physicists Expand Equation of State for Fermi-Hubbard Model," UC Davis College of Letters and Science

Nature Physics **20**, 415 (2024)
- " 'Magic trap' preserves quantum coherence in ultracold molecules longer than expected," Rice News
- "Magic Lasers Trap Quantum Mystery for Record-Breaking Time," MSN
- "Magic Lasers Trap Quantum Mystery for Record-Breaking Time," AZO Quantum
- "'Magic Trap' Captures Quantum Effects for Longer Time," Inside Quantum Technology News
- reddit, newswise, Innovation News Network, ScienMag, Mirage News, phys.org, EurekAlert!, ...

Rice *Characterizing Quantum Architecture* team supported by $1.2M from the Department of Energy (2023)
- "Rice helps lead national quantum computing research efforts", Rice News

Intrinsic, robust quantum squeezing team supported by $2.5M from Keck and Rice (2023)
- "Keck, Rice back Zhu's quantum project", Rice MSNE News

Phys. Rev. Lett. **129**, 123201 (2022) *[Editor's Suggestion]*
- "Strobing Light Shapes Atomic Array", *Synopsis* in Physics **15**, s120 (2022)

Nature Physics **18**, 1356 (2022)
- "A cool quantum simulator", Nature Physics News and Views
- "Quantum magnet is billions of times colder than interstellar space", New Scientist
- "Scientists used lasers to make the coldest matter in the universe", Popular Science
- "Scientists create coldest matter in the universe in a lab", space.com
- "Physicists cool particles to less than a billionth of a degree above absolute zero to probe quantum magnetism", Cosmos Magazine
- "SU(N) matter is about 3 billion times colder than deep space", Rice News
- phys.org, reddit (r/physics, r/space, and r/science), SpaceToday youtube channel, Ciência News youtube channel, Principia Physics, UC Davis News, ...

Nature Communications **13**, 972 (2022)
- "Physicists harness electrons to make 'synthetic dimensions'", Rice News
- "Physicists harness electrons to make 'synthetic dimensions'", phys.org
- ScienceDaily, SciTechDaily, The Science Monitor, iFeng, ...

PRX Quantum **1**, 010303 (2020)
- "Quantum leap for speed limit bounds," Rice News
- "Quantum leap for speed limit bounds," phys.org
- EurekAlert!, ScienceDaily, bioengineer.com, ...

NSF CAREER award (2019)
- Rice News
- EurekAlert!
- Coshocton County Beacon

Science **345**, 306 (2014)
- "Quantum systems under control", Science perspective
- "Little shop of atoms", JILA research highlight (web and magazine)

Phys. Rev. Lett. **112**, 070404 (2014) ["Editor's Suggestion"]
- "Dealing with Loss", JILA research highlight (web and magazine)

Nature **501**, 521 (2013)
- "Molecules line up in laser grid", Physics World
- "Rotating molecules as quantum magnets", Nature News and Views
- "Spins swapped at a distance", Overclocker's club
- "The great spin swap", JILA research highlight (web and magazine)
- "Beyond quantum simulation: JILA physicists create 'crystal' of spin-swapping ultracold gas molecules", NIST Newsletter
- Also featured on phys.org, ScienceDaily, Nanotechnology News, pro-physik.de, ...

Phys. Rev. Lett. **110**, 075301 (2013)
- "Model Behavior", JILA research highlight (web and magazine)

Phys. Rev. A **85**, 041604 (2012)
- "New Flavors of Quantum Magnetism", JILA research highlight (web and magazine)

Phys. Rev. Lett. **92**, 045501 (2004)
- NCSA News article "Salted Away Silicon"

Publications

Preprints (submitted)

113. *Hubbard Models with Ultracold Shielded Molecules in Optical Lattices*
K. Pérez, J. W. Desroches, **K. R. A. Hazzard**, T. Karman
arxiv:2609.20286

112. *Engineering SU(N)-Symmetric Hubbard Models with Microwave-Shielded* Dipolar Molecules
J.-L. Li, R. Alhyder, A. Schindewolf, **K. R. A. Hazzard**, M. Lemeshko, G. M. Koutentakis
arxiv:2607.27107

111. *On R-parastatistics I: Foundation*
Z. Wang and **K. R. A. Hazzard**
arxiv:2607.26351

110. *Interaction-enabled topological pumping of Rydberg electrons*
C. Huang, T. Chen, **K. R. A. Hazzard**, J. P. Covey, and B. Gadway
arxiv:2606.15126

109. *A universal and efficient hybrid digital-analog fermionic quantum simulator*
Hao-Tian Wei and **K. R. A. Hazzard**
arxiv:2606.05517

108. *Graduate Training in Quantum Information Science and Engineering: Lessons, Challenges, and a Roadmap from the NSF Research Traineeship Programs*
Y. Abate et al. (**K. R. A. Hazzard** and 33 others)
arxiv:2605.08510

107. *Probing topological edge states in a molecular synthetic dimension*
A. P. Raghuram, F. M. Blondell, J. M. Mortlock, B. P. Maddox, S. Dasgupta, H. A. J. Middleton-Spencer, **K. R. A. Hazzard**, H. M. Price, P. D. Gregory, S. L. Cornish
arxiv:2604.00745

106. *Dicke materials as a resource for quantum squeezing*
V. Sharma, S.-A. Koh, J. Stepp, D. Kim, T. Obata, Y. Saito, M. Bamba, H. Pu, H. Zhu, J. Kono, **K. R. A. Hazzard**
arxiv:2603.22416

105. *Quantum-controlled synthetic materials*
A. Vrajitoarea, G. Roberts, **K. R. A. Hazzard**, J. Simon, and D. I. Schuster
arxiv:2602.06108

104. *A quantum algorithm to count weighted ground states of classical spin Hamiltonians*
B. Sundar, R. Paredes, D. T. Damanik, L. Dueñas-Osorio, and **K. R. A. Hazzard**
arxiv:1908.01745

103. *Quantum dynamics from a numerical linked cluster expansion*
Ian G. White, Bhuvanesh Sundar, and **Kaden R. A. Hazzard**
arxiv:1710.07696

Journal articles

102. Quantum gas microscopy of three-flavor Hubbard systems
J. Mongkolkiattichai, L. Liu, S. Dasgupta, **K. R. A. Hazzard**, P. Schauss
Science **394**, 665-669 (2026)

101. Repulsively Bound Hadrons in a Z_2 Lattice Gauge Theory
S. G. Roy, V. Sharma, K. Xu, U. Borla, J. C. Halimeh, **K. R. A. Hazzard**
Communications Physics (accepted, 2026) (arxiv:2510.23618)

100. Interaction-Assisted Topological Pumping in Few- and Many-Atom Rydberg Arrays
C. Huang, T. Chen, Q. Liang, M. A. Krebs, E. Springhorn, R. Li, M. Tian, **K. R. A. Hazzard**, J. P. Covey, B. Gadway
Physical Review X **16**, 031075 (2026)

99. *Quantum science with arrays of metastable helium-3 atoms*
Z. Li, R. De, R. Sivakumar, W. Huie, H.-T. Wei, J. D. Piel, C. H. Greene, **K. R. A. Hazzard**, Z. Z. Yan, and J. P. Covey
PRX Quantum **7**, 033011 (2026)

98. *Trion formation and ordering in the attractive SU(3) Fermi-Hubbard model*
Jonathan Stepp, Eduardo Ibarra-García-Padilla, Richard T. Scalettar, and **K. R. A. Hazzard**
Phys. Rev. Lett. **136**, 250402 (2026)

97. *Meson dynamics from locally exciting a particle-conserving Z_2 lattice gauge theory*
Vaibhav Sharma and **Kaden R. A. Hazzard**
Quantum **9**, 1872 (2025)

96. *Unit-density SU(3) Fermi-Hubbard Model with Spin Flavor Imbalance*
Z. Zhang, Q. Zheng, E. Ibarra-García-Padilla, R. T. Scalettar, and **K. R. A. Hazzard**
Physical Review A **112**, 033313 (2025)

95. *Quantum Vacuum in Matter*
A. Baydin, H. Zhu, M. Bamba, **K. R. A. Hazzard**, J. Kono
Optical Materials Express **15**, 1833 (2025)

94. *Observation of the Magnonic Dicke Superradiant Phase Transition*
D. Kim, S. Dasgupta, X. Ma, J.-M. Park, H.-T. Wei, L. Luo, J. Doumani, X. Li, H. O. Everitt, S. Kimura, H. Nojiri, J. Wang, S. Cao, M. Bamba, **K. R. A. Hazzard**, J. Kono
Science Advances **11**, eadt1691 (2025)

93. *SU(N) magnetism with ultracold molecules*
B. Mukherjee, J. M. Hutson, and **K. R. A. Hazzard**
New Journal of Physics **27**, 013013 (2025)

92. *Particle exchange statistics beyond fermions and bosons*
Z. Wang and **K. R. A. Hazzard**
Nature **637**, 314 (2025)

91. *Grover-QAOA for 3-SAT: Quadratic Speedup, Fair-Sampling, and Parameter Clustering*
Z. Zhang, R. Paredes, B. Sundar, D. Quiroga, A. Kyrillidis, L. Duenas-Osorio, G. Pagano, **K. R. A. Hazzard**
Quantum Science and Technology, **10**, 015022 (2025)

90. *Motional decoherence in ultracold Rydberg atom quantum simulators of spin models*
Zewen Zhang, Ming Yuan, Bhuvanesh Sundar, and **K. R. A. Hazzard**
Phys. Rev. A **110**, 053321 (2024)

89. *Sub-dimensional magnetic polarons in the one-hole doped SU(3) t-J model*
Henning Schlömer, Fabian Grusdt, Ulrich Schollwöck, **Kaden R. A. Hazzard**, and Annabelle Bohrdt
Phys. Rev. B **110**, 125134 (2024)

88. *Finite Temperature Quantum Matter with Rydberg or Molecule Synthetic Dimensions*
S. Dasgupta, C. Feng, B. Gadway, R. T. Scalettar, and **K. R. A. Hazzard**
Phys. Rev. A **109**, 063322 (2024)

87. *Quantum Computation and Quantum Simulation with Ultracold Molecules*
S. L. Cornish, M. R. Tarbutt, and **K. R. A. Hazzard**
Nature Physics **20**, 730 (2024)

86. *Strongly interacting Rydberg atoms in synthetic dimensions with a magnetic flux*
T. Chen, C. Huang, I. Velkovsky, **K. R. A. Hazzard**, J. P. Covey, and B. Gadway
Nature Communications **15**, 2675 (2024)

85. *Equation of State and Thermometry of the 2D SU(N) Fermi-Hubbard Model*
G. Pasqualetti, O. Bettermann, N. Darkwah Oppong, E. Ibarra-García-Padilla, S. Dasgupta, R. T. Scalettar, **K. R. A. Hazzard**, I. Bloch, and S. Fölling
Phys. Rev. Lett. **132**, 083401 (2024) [*Editor's Selection*]

84. *Second-scale rotational coherence and dipolar interactions in a gas of ultracold polar molecules*
P. D. Gregory, L. M. Fernley, A. L. Tao, S. L. Bromley, J. Stepp, Z. Zhang, S. Kotochigova, **K. R. A. Hazzard**, S. L. Cornish
Nature Physics **20**, 415 (2024)

83. *Hubbard parameters for programmable tweezer arrays*
H.-T. Wei, E. Ibarra-García-Padilla, M. L. Wall, and **K. R. A. Hazzard**
Phys. Rev. A **109**, 013318 (2024) *[Editor's Suggestion]*

82. *Classical Analog of Quantum Models in Synthetic Dimensions*
M. Cohen, M. Casebolt, Y. Zhang, **K. R. A. Hazzard**, and R. Scalettar
Phys. Rev. A **109**, 013303 (2024) *[Editor's Suggestion]*

81. *Metal-insulator transition and quantum magnetism in the SU(3) Fermi-Hubbard model*
C. Feng, E. Ibarra-García-Padilla, **K. R. A. Hazzard**, R. Scalettar, S. Zhang, and E. Vitali
Phys. Rev. Research **5**, 043267 (2023)

80. *Metal-insulator transition and magnetism of SU(3) fermions in the square lattice*
E. Ibarra-García-Padilla, C. Feng, Giulio Pasqualetti, Simon Fölling, R. T. Scalettar, E. Khatami, and **K. R. A. Hazzard**
Phys. Rev. A **108**, 053312 (2023)

79. *Locality of gapped ground states in systems with power-law decaying interactions*
Zhiyuan Wang and **Kaden R. A. Hazzard**
PRX Quantum **4**, 020348 (2023)

78. *Quick Study: Synthetic Dimensions*
Kaden R. A. Hazzard and Bryce Gadway
Physics Today **76**(4), 62 (2023)

77. *Topological correlations in three dimensional classical Ising models: an exact solution with a continuous phase transition*
Zhiyuan Wang and **Kaden R. A. Hazzard**
Phys. Rev. Research **5**, 013086 (2023)

76. *Multi-round QAOA and advanced mixers on a trapped-ion quantum computer*
Yingyue Zhu, Zewen Zhang, Bhuvanesh Sundar, Alaina M. Green, C. Huerta Alderete, Nhung H. Nguyen, **Kaden R. A. Hazzard**, and Norbert M. Linke
Quantum Sci. Technol. **8**, 015007 (2023)

75. *A two-dimensional programmable tweezer array of fermions*
Zoe Z. Yan, Benjamin M. Spar, Max L. Prichard, Sungjae Chi, Hao-Tian Wei, Eduardo Ibarra-García-Padilla, **Kaden R. A. Hazzard**, and Waseem S. Bakr
Phys. Rev. Lett. **129**, 123201 (2022) *[Editor's Suggestion]*

74. *Observation of antiferromagnetic correlations in an ultracold SU(N) Hubbard model*
S. Taie, E. Ibarra-García-Padilla, N. Nishizawa, Y. Takasu, Y. Kuno, H.-T. Wei, R. T. Scalettar, **K. R. A. Hazzard**, and Y. Takahashi
Nature Physics **18**, 1356 (2022)

73. *A tensor network discriminator architecture for classification of quantum data on quantum computers*
Michael L. Wall, Paraj Titum, Gregory Quiroz, Michael Foss-Feig, and **Kaden R. A. Hazzard**
Phys. Rev A **105**, 062439 (2022)

72. *Quantum Membrane Phases in Synthetic Lattices of Cold Molecules or Rydberg Atoms*
Chunhan Feng, Hannah Manetsch, Valery G. Rousseau, **Kaden R. A. Hazzard**, and Richard Scalettar
Phys. Rev A **105**, 063320 (2022)

71. *Realizing Su-Schrieffer-Heeger topological edge states in Rydberg-atom synthetic dimensions*
S. K. Kanungo, J. D. Whalen, Y. Lu, M. Yuan, S. Dasgupta, F. B. Dunning, **K. R. A. Hazzard**, and T. C. Killian
Nature Communications **13**, 972 (2022)

70. *Complex collisions of ultracold molecules: a toy model*
J. K. Yao, C. A. Johnson, N. P. Mehta, and **Kaden R. A. Hazzard**
Phys. Rev. A **104**, 053311 (2021)

69. *Universal thermodynamics of an SU(N) Fermi-Hubbard Model*
Eduardo Ibarría-García-Padilla, Sohail Dasgupta, Hao-Tian Wei, Shintaro Taie, Yoshiro Takahashi, Richard T. Scalettar, and **K. R. A. Hazzard**
Phys. Rev. A **104**, 043316 (2021)
Editor's Suggestion

68. *Viewpoint: Photons Get Slippery*
Kaden R. A. Hazzard
Physics **14**, 139 (2021)

67. *Nonlinear Dynamics in a Synthetic Momentum-State Lattice*
F. A. An, B. Sundar, J. Hou, X.-W. Luo, E. J. Meier, C. Zhang, **K. R. A. Hazzard**, and B. Gadway
Phys. Rev. Lett. **127**, 130401 (2021) *[Editor's Suggestion]*

66. *Bounding the finite-size error of quantum many-body dynamics simulations*
Z. Wang, M. Foss-Feig, and **K. R. A. Hazzard**
Phys. Rev. Research **3**, L032047 (2021)

65. *Quantum Simulators: Architectures and Opportunities*
E. Altman *et al.* (**K. R. A. Hazzard** and 36 others)
PRX Quantum **2**, 017003 (2021)

64. *Thermodynamics and magnetism in the 2D-3D crossover of the Hubbard model*
Eduardo Ibarra-García-Padilla, Rick Mukherjee, Randall G. Hulet, **Kaden R. A. Hazzard**, Thereza Paiva, and Richard T. Scalettar
Phys. Rev. A **102**, 033340 (2020)

63. *Spin-imbalanced ultracold Fermi gases in a two-dimensional array of tubes*
Bhuvanesh Sundar, Jacob A. Fry, Melissa C. Revelle, Randall G. Hulet, and **Kaden R. A. Hazzard**
Phys. Rev. A **102**, 033311 (2020)

62. *Tightening the Lieb-Robinson bound in locally interacting systems*
Z. Wang and **K. R. A. Hazzard**
PRX Quantum **1**, 010303 (2020)

61. *Numerical linked cluster expansions for inhomogeneous systems*
Johann Gan and **Kaden R. A. Hazzard**
Phys. Rev. A **102**, 013318 (2020)

60. *Collective modes of ultracold fermionic alkaline-earth gases with SU(N) symmetry*
Sayan Choudhury, Kazi R. Islam, Yanhua Hou, Jim A. Aman, Thomas C. Killian, and **Kaden R. A. Hazzard**
Phys. Rev. A **101**, 053612 (2020)

59. *Correlations generated from high-temperature states: Nonequilibrium dynamics in the Fermi-Hubbard model*
Ian G. White, Randall G. Hulet, and **Kaden R. A. Hazzard**
Phys. Rev. A **100**, 033612 (2019)

58. *High-intensity two-frequency photoassociation spectroscopy of a weakly bound molecular state: theory and experiment*
W. Y. Kon, J. A. Aman, J. C. Hill, T. C. Killian, and **Kaden R. A. Hazzard**
Phys. Rev. A **100**, 013408 (2019)

57. *Cold atoms in optical lattices*
Kaden R. A. Hazzard and Bhuvanesh Sundar
Invited review; Chapter in "2D Quantum Mechanics: Proceedings of the 2018 NIST Workshop" on two-dimensional meta-materials, ed. Wiley P. Kirk, John N. Randall, and James H. G. Owen (2019).

56. *Analysis of continuous and discrete Wigner approximations for spin dynamics*
Bhuvanesh Sundar, Kenneth C. Wang, and **Kaden R. A. Hazzard**
Phys. Rev. A **99**, 043627 (2019)

55. *A traffic jam of light*
Kaden R. A. Hazzard
Nature **566**, 45 (2019)
invited News & Views article

54. *Strings of ultracold molecules in a synthetic dimension*
Bhuvanesh Sundar, Matthew Thibodeau, Zhiyuan Wang, Bryce Gadway, and **Kaden R. A. Hazzard**
Phys. Rev. A **99**, 013624 (2019).

53. *A Model for Scattering with Proliferating Resonances: Many Coupled Square Wells*
Nirav P. Mehta, **Kaden R. A. Hazzard**, and Christopher Ticknor
Phys. Rev. A **98**, 062703 (2018).

52. *Photoassociative Spectroscopy of a Halo Molecule in ^{86}Sr*
J. A. Aman, J. C. Hill, R. Ding, **Kaden R. A. Hazzard**, T. C. Killian, and W. Y. Kon,
Phys. Rev. A **98**, 053441 (2018).
selected as "Editor's suggestion"

51. *Cooling Fermions in an Optical Lattice by Adiabatic Demagnetization*
Anthony E. Mirasola, Michael L. Wall, and **Kaden R. A. Hazzard**
Phys. Rev. A **98**, 033607 (2018).

50. *Bosonic molecules in a lattice: Unusual fluid phase from multichannel interactions*
Erin D. Ewart, Michael L. Wall, and **Kaden R. A. Hazzard**
Phys. Rev. A **98**, 013611 (2018)

49. *Viewpoint: Watching a quantum magnet grow in ultracold atoms*
Kaden R. A Hazzard
Physics **11**, 63 (2018)

48. *Complex-network description of thermal quantum states in the Ising spin chain*
Bhuvanesh Sundar, Marc Andrew Valdez, Lincoln D. Carr, and **Kaden R. A. Hazzard**
Phys. Rev. A **97**, 052320 (2018)

47. *Geometric representation of spin correlations and applications to ultracold systems*
Rick Mukherjee, Anthony E. Mirasola, Jacob Hollingsworth, Ian G. White, and **Kaden R. A. Hazzard**
Phys. Rev. A **97**, 043606 (2018)

46. *Analytic ground state wave functions of mean-field $p_x + ip_y$ superconductors with vortices and boundaries*
Zhiyuan Wang and **Kaden R. A. Hazzard**
Phys. Rev. B **97**, 104501 (2018)

45. *Synthetic dimensions in ultracold polar molecules*
Bhuvanesh Sundar, Bryce Gadway, and **Kaden R. A. Hazzard**
Scientific Reports **8**, 3422 (2018)

44. *Correlations and enlarged superconducting phase of t-$J_\perp$ chains of ultracold molecules on optical lattices*
Salvatore R. Manmana, Marcel Möller, Riccardo Gezzi, and **Kaden R. A. Hazzard**
Phys. Rev. A **96**, 043618 (2017)

43. *Number-conserving interacting fermion models with exact topological superconducting ground states*
Zhiyuan Wang, Youjiang Xu, Han Pu, and **Kaden R. A. Hazzard**
Phys. Rev. B **96**, 115110 (2017)

42. *Lattice model parameters for ultracold nonreactive molecules: chaotic scattering and its limitations*
Michael L. Wall, Rick Mukherjee, Shah Saad Alam, Nirav P. Mehta, and **Kaden R. A. Hazzard**
Phys. Rev. A **95**, 043636 (2017)

41. *Microscopic derivation of multi-channel Hubbard models for ultracold nonreactive molecules in an optical lattice*
Michael L. Wall, Nirav P. Mehta, Rick Mukherjee, Shah Saad Alam, and **Kaden R. A. Hazzard**
Phys. Rev. A **95**, 043635 (2017)

40. *A solid more fluid than a fluid*
Kaden R. A. Hazzard
Nature **543**, 47 (2017)
invited News & Views article

39. *Accessing Rydberg-dressed interactions using many-body Ramsey dynamics*
Rick Mukherjee, Thomas C. Killian, and **Kaden R. A. Hazzard**
Phys. Rev. A **94**, 053422 (2016)

38. *Synthetic-gauge-field stabilization of the chiral-spin-liquid phase*
Gang Chen, **Kaden R. A. Hazzard**, Ana Maria Rey, and Michael Hermele
Phys. Rev. A **93**, 061601(R) (2016)

37. *Ultracold Nonreactive Molecules in an optical lattice: Connecting Chemistry to Many-Body Physics*
Andris Doçaj, Michael L. Wall, Rick Mukherjee, and **Kaden R. A. Hazzard**
Phys. Rev. Lett. **116** 135301 (2016)

36. *Rydberg-blockade effects in Autler-Townes spectra of ultracold strontium*
B. J. DeSalvo, J. A. Aman, C. Gaul, T. Pohl, S. Yoshida, J. Burgdörfer, **K. R. A. Hazzard**, F. B. Dunning, and T. C. Killian
Phys. Rev. A **93**, 022709 (2016)

35. *Effective many-body parameters for atoms in non-separable Gaussian optical potential*
Michael L. Wall, **Kaden R. A. Hazzard**, and Ana Maria Rey
Phys. Rev. A **92**, 013610 (2015).
selected as "Editor's suggestion"

34. *Quantum magnetism with ultracold molecules*
Michael L. Wall, **Kaden R. A. Hazzard**, and Ana Maria Rey
Chapter in "From atomic to mesoscale: The Role of Quantum Coherence in Systems of Various Complexities" ed. S. Malinovskaya and I. Novikova World Scientific (2015) [Review article]

33. *Quantum correlations and entanglement in far-from-equilibrium spin systems*
Kaden R. A. Hazzard, Mauritz van den Worm, Michael Foss-Feig, Salvatore R. Manmana, Emanuele G. Dalla Torre, Tilman Pfau, Michael Kastner, and Ana Maria Rey
Phys. Rev. A **90**, 063622 (2014)

32. *Many-body dynamics of dipolar molecules in an optical lattice*
Kaden R. A. Hazzard, Bryce Gadway, Michael Foss-Feig, Bo Yan, Steven A. Moses, Jacob P. Covey, Norman Y. Yao, Mikhail D. Lukin, Jun Ye, Deborah S. Jin, and Ana Maria Rey
Phys. Rev. Lett. **113**, 195302 (2014)

31. *Two-particle quantum interference in tunnel-coupled optical tweezers*
Adam M. Kaufman, Brian J. Lester, Collin M. Reynolds, Michael L. Wall, Michael Foss-Feig, **Kaden R. A. Hazzard**, Ana Maria Rey, and Cindy A. Regal
Science **345**, 306 (2014)

30. *Suppressing the loss of ultracold molecules via the continuous quantum Zeno effect*
Bihui Zhu, Bryce Gadway, Michael Foss-Feig, Johannes Schachenmayer, Michael Wall, **Kaden R. A. Hazzard**, Bo Yan, Steven A. Moses, Jacob P. Covey, Deborah S. Jin, Jun Ye, Murray Holland, and Ana Maria Rey
Phys. Rev. Lett. **112**, 070404 (2014) (selected as "Editor's Choice")

29. *Quenching to unitarity: Quantum dynamics in a 3D Bose gas*
Andrew G. Sykes, John P. Corson, Jose P. D'Incao, Andrew P. Koller, Chris H. Greene, Ana Maria Rey, **Kaden R. A. Hazzard**, and John L. Bohn
Phys. Rev. A **89**, 021601(R) (2014)

28. *Dynamical quantum correlations of Ising models on an arbitrary lattice and their resilience to decoherence*
Michael Foss-Feig, **Kaden R. A. Hazzard**, John J. Bollinger, Ana Maria Rey, and Charles W. Clark
New J. Phys. **15**, 113008 (2013) (chosen as "IOP Select" article)

27. *Observation of dipolar spin-exchange interactions with lattice-confined polar molecules*
Bo Yan, Steven A. Moses, Bryce Gadway, Jacob P. Covey, **Kaden R. A. Hazzard**, Ana Maria Rey, Deborah S. Jin, and Jun Ye
Nature **501**, 521 (2013)

26. *Kitaev honeycomb and other exotic spin models with polar molecules*
Alexey V. Gorshkov, **Kaden R. A. Hazzard**, and Ana Maria Rey
Molecular Physics **111**, 1908 (2013), Invited article for Bretislav Friedrich special issue.

25. *Nonequilibrium dynamics of arbitrary-range Ising models with decoherence: An exact analytic solution*
Michael Foss-Feig, **Kaden R. A. Hazzard**, John J. Bollinger, and Ana Maria Rey
Phys. Rev. A **87**, 042101 (2013)

24. *Topological phases in ultracold polar-molecule quantum magnets*
Salvatore R. Manmana, E. M. Stoudenmire, **Kaden R. A. Hazzard**, Ana Maria Rey, and Alexey V. Gorshkov
Phys. Rev. B **87**, 081106(R) (2013)

23. *Far-from-Equilibrium Quantum Magnetism with Ultracold Polar Molecules*
Kaden R. A. Hazzard, Salvatore R. Manmana, Michael Foss-Feig, and Ana Maria Rey
Phys. Rev. Lett. **110**, 075301 (2013)

22. *Universality class of quantum criticality in the two-dimensional Hubbard model at intermediate temperatures ($t^2/U \ll T \ll t$)*
Kaden R. A. Hazzard, Ana Maria Rey, and Richard T. Scalettar
Phys. Rev. B **87**, 035110 (2013)

21. *Adiabatic loading of one-dimensional SU(N) alkaline-earth-atom fermions in optical lattices*
Lars Bonnes, **Kaden R. A. Hazzard**, Salvatore R. Manmana, Ana Maria Rey, and Stefan Wessel
Phys. Rev. Lett. **109**, 205305 (2012)

20. *High-temperature properties of fermionic alkaline-earth-metal atoms in optical lattices*
Kaden R. A. Hazzard, Victor Gurarie, Michael Hermele, and Ana Maria Rey
Phys. Rev. A **85**, 041604 (2012)

19. *SU(N) magnetism in chains of ultracold alkaline earth atoms: Mott transitions and quantum correlations*
Salvatore R. Manmana, **Kaden R. A. Hazzard**, Gang Chen, Adrian E. Feiguin, and Ana Maria Rey
Phys. Rev. A **84**, 043601 (2011)

18. *Spectroscopy of dipolar fermions in layered two-dimensional and three-dimensional lattices*
Kaden R. A. Hazzard, Alexey V. Gorshkov, and Ana Maria Rey
Phys. Rev. A **84**, 033608 (2011)

17. *Techniques to measure quantum criticality in cold atoms*
Kaden R. A. Hazzard and Erich J. Mueller
Phys. Rev. A **84**, 013604 (2011)

16. *Local versus global equilibration near the bosonic Mott-superfluid transition*
Stefan S. Natu, **Kaden R. A. Hazzard** and Erich J. Mueller
Phys. Rev. Lett. **106**, 125301 (2011)

15. *Atomic H in molecular H_2 crystals: constraints on candidate theories of experimental anomalies*
Kaden R. A. Hazzard and Erich J. Mueller
Phys. Rev. B **82** 014303 (2010) (selected as "Editor's Choice")

14. *Radio-frequency spectra of bosons in optical lattices: bimodality due to many body correlations*
Kaden R. A. Hazzard and Erich J. Mueller
Phys. Rev. A **81**, 033404 (2010)

13. *On-site correlations in optical lattices: band mixing to coupled quantum Hall puddles*
Kaden R. A. Hazzard and Erich J. Mueller
Phys. Rev. A **81**, 031602(R) (2010)

12. *Stirring trapped atoms into Fractional Quantum Hall puddles*
Stefan K. Baur, **Kaden R. A. Hazzard** and Erich J. Mueller
(KRAH and SKB co-first authors)
Phys. Rev. A **78** 061608(R) (2008)

11. *Influence of film-mediated interactions on the microwave and radio spectrum of spin-polarized hydrogen on helium films*
Kaden R. A. Hazzard and Erich J. Mueller
Phys. Rev. Lett. **101**, 165301 (2008)

10. *Hyperfine spectra of trapped bosons in optical lattices*
Kaden R. A. Hazzard and Erich J. Mueller
Phys. Rev. A **76**, 063612 (2007)

9. *Fast Diffusion Mechanism of Silicon Tri-interstitial Defects*
Yaojun A. Du, Stephen A. Barr, **Kaden R. A. Hazzard**, Thomas J. Lenosky, Richard G. Hennig and John W. Wilkins
Phys. Rev. B **72**, 241306(R) (2005)

8. *A Novel Dielectric Anomaly in Cuprates and Nickelates: Signature of an Electronic Glassy State*
Tuson Park, Z. Nussinov, **Kaden R. A. Hazzard**, V.A. Sidorov, A.V. Balatsky, J.L. Sarrao, S.-W. Cheong, M.F. Hundley, J.-S. Lee, Q. Jia, and J.D. Thompson
Phys. Rev. Lett. **94**, 017002 (2005)

7. *Complexity of Small Silicon Self-interstitial Clusters*
D. A. Richie, Jeongnim Kim, Stephen A. Barr, **Kaden R. A. Hazzard**, Richard Hennig, and John W. Wilkins
Phys. Rev. Lett. **92**, 045501 (2004)

Conference proceedings and other refereed papers

6. *Detection and Visualization of Anomalous Structures in Molecular Dynamics Data*
Sameep Mehta, Raghu Machiraju, Srini Parthasarathy, **Kaden R. A. Hazzard**, and John Wilkins
IEEE Visualization, Proceedings of the conference on Visualization '04, 465-472 (2004)

5. *Mining Temporally-Varying Phenomena in Scientific Datasets*
R. Machiraju, S. Parthasarathy, J. Wilkins, D. Thompson, B. Gatlin, D. Richie, T. Choy, M. Jiang, S. Mehta, M. Coatney, S. Barr, and **Kaden R. A. Hazzard**
In *Advances in Knowledge Discovery,* 2003, eds. H. Kargupta *et al.*

4. *Molecular dynamics as a bridge: fundamentals, methods, and current research*
Kaden R. A. Hazzard
Reviews in Undergraduate Research, **2**, 19–26 (2003)

3. *Feature Mining Algorithms for Scientific Data*
   M. Jiang, T.-S. Choy, S. Mehta, M. Coatney, S. Barr, **Kaden R. A. Hazzard**, D. Richie, S. Parthasarathy, R. Machiraju, David Thompson, J. Wilkins, and Boyd Gaytlin
   In *Proceedings of SIAM Data Mining Conference*, edited by D. Barbara and C. Kamath, 13-24 (2003)
2. *Large-scale molecular dynamics simulations of interstitial defect diffusion in silicon*
   David A. Richie, Jeongnim Kim, Richard Hennig, **Kaden R. A. Hazzard**, Steven Barr, and John W. Wilkins
   Materials Research Symposium Proceedings, **731**, p. W9. 10-5 (2002)

Book

1. *Quantum phase transitions in cold atoms and low temperature solids*
   Kaden R. A. Hazzard
   Selected for publication in "Springer Theses" book series, an edited version of my thesis (2011)

Invited talks

196. Quantum Computing in Light–Matter Platforms, ICTP-SAIFR in São Paulo, Brazil
   Title TBD
   August 2027
195. International Workshop on Laser Physics (LPHYS27), Montecatini Terme, Italy
   Title TBD
   July 2027
194. Summer Conference on Atomic and Molecular Physics (Summer CAMP), Santa Cruz, California
   Title TBD
   June 2027
193. 2027 APS DAMOP Graduate Student Symposium: AMO answers to other people's questions Chicago, Illinois
   Title TBD
   May 2027
192. Precision Many-Body Focus Session, 2027 APS March Meeting/Global Summit, Atlanta, Georgia
   What can ultracold SU(N) systems teach us about strongly correlated matter?
   April 2027
191. Locality in quantum many-body systems: Lieb—Robinson bounds and related methods, University of Tuebingen, Tuebingen, Germany
   Title TBD
   March 2027
190. Institute of Physics Colloquium, University of Amsterdam, Amsterdam, Netherlands
   Title TBD
   March 2027

189. Annual QSMol EPSRC Programme Grant meeting, University of Birmingham, UK
Title TBD
January 2027

188. Tufts University Quantum Retreat, Tufts University, Somerville, Massachusetts
Title TBD
December 2026

187. Colloquium, Harvey Mudd College, Claremont, California
Title TBD
November 2026

186. KITP Blackboard Lunch Talk, Kavli Institute for Theoretical Physics, UC Santa Barbara, Santa Barbara, California
Very Cold Molecules: Chemistry, Quantum Matter, and the Laws of Nature
November 2026

185. Conference on Quantum Science and Technology with Ultracold Molecules, Kavli Institute for Theoretical Physics, UC Santa Barbara, Santa Barbara, California
Shielded molecules in optical lattices: Hubbard physics and SU(N) symmetry
November 2026

184. Hybrid systems of Rydberg atoms and polar molecules, Harvard ITAMP workshop, Cambridge, Massachusetts
Beyond particles: extended quantum objects in synthetic dimensions
October 2026

183. Colloquium, Department of Physics and Astronomy, Rice University, Houston, Texas
How to Make an Impossible Particle
September 2026

182. Quantum Seminar Series, University of Houston, Houston, Texas
Programmable Ultracold Quantum Matter
September 2026

181. Rice Quantum Frontiers Summit, Defense Research Advancement & Smalley-Curl Institute, Rice University, Houston, Texas
The Impossible Particle
September 2026

180. Cold and Controlled Molecules and Ions (CCMI) conference, Stony Brook University, Long Island
Ultracold Shielded Molecules in Optical Lattices
August 2026

179. Texas Quantum Summit 2026
Quantum information and materials science and engineering at Rice University
August 2026

178. Public Talk, After 5 Society, Houston, Texas
The Impossible Particle
July 2026

177. IQSE Summer School and Workshop on Quantum Physics, Casper, Wyoming
Observing paraparticles in ultracold atoms and solid-state materials
July 2026

176. International Workshop on Laser Physics (LPHYS26), Belén, Costa Rica
What Is a Phase of Matter in a Cavity?
July 2026

175. Simons Center for Geometry and Physics Program: Complexity, information, and tractable simulations of quantum many-body dynamics, Stony Brook, New York
Limits of locality: interplay of short-range and nonlocal interactions in dynamics
June 2026

174. QuarkNet Summer Workshop for High School Teachers, Houston, Texas.
Quantum technologies: the hype, the substance, and how to tell the difference
June 2026

173. APS DAMOP 2026, "Hot Topics" session, Providence, Rhode Island.
Observing paraparticles in ultracold matter
June 2026

172. Public Talk, Pint of Science, Houston, Texas.
Einstein's nightmare, our quantum future
May 2026

171. UT San Antonio Quantum Cyber Resilience Workshop, San Antonio.
Quantum algorithms and platforms for physical resiliency
April 2026

170. Center for Advanced Space Sensing Technologies (CASST) Program Kick-Off meeting, Houston, TX
Quantum enhanced sensing: a computational toolbox and new sensing paradigms ,
April 2026.

169. Physics and Astronomy Colloquium, University of Tennessee, Knoxville, Tennessee
A strange exchange: paraparticles and where to find them
April 2026

168. Workshop on Frontiers of Cavity Quantum Electrodynamics (cQED), Rice Global Center, Paris, France
What is a phase of matter in a cavity or a "Dicke material"?
April 2026

167. Physics Colloquium, Penn State University, State College, Pennsylvania
A strange exchange: paraparticles and where to find them
February 2026

166. Physics Colloquium, New York University, New York, New York.
A strange exchange: paraparticles and where to find them
January 2026

165. Rice-Max Planck Q-RaMP meeting, Rice Global Center, Paris, France
Programmable Ultracold Quantum Matter
January 2026

164. PQE (Physics of Quantum Electronics) Workshop, Snowbird, Utah
Observing paraparticles in ultracold Rydberg atoms
January 2026

163. Inaugural Workshop on Scalable Analog Quantum Simulations Using 2D Moiré Superlattices, Pittsburgh Quantum Institute, Pittsburgh, Pennsylvania
What can ultracold SU(N) systems teach us about strongly correlated matter?
December 2025

162. Many-body theory group meeting (virtual), Oxford University, UK
Paraparticles: a new window into correlated matter
December 2025

161. Physics Colloquium, University of Houston, Houston, Texas
A strange exchange: paraparticles and where to find them
November 2025

160. Science Colloquium, Texas A&M-Texarkana, Texarkana, Texas
A strange exchange: paraparticles and where to find them
October 2025

159. Physics Colloquium, Iowa State University/Ames National Lab, Ames, Iowa
A strange exchange: paraparticles and where to find them
October 2025

158. Lecture, NRT-CQED Lecture Series, Rice University, Houston, Texas.
What is a phase of matter when a cavity is involved?
November 2025

157. Theory and Computation in the Physical Sciences Seminar, Rice University
Paraparticles: a new window into correlated matter
October 2025

156. Quantum Optics Seminar, University of Strathclyde, Glasgow, Scotland
Programmable ultracold matter: from correlated fermions to synthetic dimensions
September 2025

155. QuAMP 2025 (Quantum, Atomic and Molecular Physics) Conference, Newcastle, UK
Molecule and Rydberg atoms: from synthetic dimensions to paraparticles
September 2025

154. Quantum Lunch Seminar, Rice University, Houston, TX
Paraparticles: Quasiparticles with exchange statistics beyond fermions and bosons
September 2025

153. Aspen Center for Physics Workshop on Cold and Ultracold Molecules for Fundamental Physics and Many-Body Quantum Science, Aspen, Colorado
SU(N) symmetry in ultracold molecules
July 2025

152. Workshop on Quantum Technology, University of Tennessee-Chattanooga, Chattanooga, Tennessee
Programmable ultracold quantum matter: from correlated fermions to paraparticles
June 2025

147–151. Lecture series & seminar, ICFO – The Institute of Photonic Sciences, Barcelona, Spain
Fermions in lattices and SU(N) Hubbard models (4 lectures) + seminar on paraparticles
June 2025

146. Colloquium, Institute for Quantum Physics, University of Hamburg, Hamburg, Germany
A strange exchange: paraparticles and where to find them
June 2025

145. Google Quantum AI seminar (virtual).
A Strange Exchange: Paraparticles and Where to Find Them
May 2025.

144. Quantum Information Processing Systems (QuantIPS) 2025, Rice University, Houston, TX
A fermionic quantum computer,
April 2025

143. Workshop on Controlled Quantum Magnetism, Indiana University Bloomington, Bloomington, Indiana.
SU(N) magnets, synthetic dimensions, and paraparticles with ultracold molecules,
April 2025

142. Plenary Talk, Texas Section of the American Physical Society, University of Houston, Houston, Texas.
A strange exchange: paraparticles and where to find them
April 2025

141. Colloquium, College of Science, Engineering, and Technology, Texas Southern University, Houston, Texas.
Programmable quantum matter at ultracold temperatures
April 2025

140. Joint Quantum Institute Seminar, University of Maryland, College Park, Maryland
Programmable real and synthetic dimensions: from correlated matter to paraparticles
March 2025

139. Quantum Simulation and Quantum Computation Workshop, EQUATE: Emergent Quantum Materials and Technologies, Omaha, Nebraska
Programmable real and synthetic dimensions: from correlated matter to paraparticles
March 2025

138. Theoretical Physics Seminar, Ludwig-Maximilians-Universität Munich, Munich, Germany
Lies, damn lies, and parastatistics
March 2025

137. Theoretical Physics Seminar, Indian Institute of Technology-Bombay, Mumbai, India
A Strange Exchange: Paraparticles and Where to Find Them
March 2025

136. Theoretical Physics Seminar, Indian Institute of Science-Bangalore, Bangalore, India
A Strange Exchange: Paraparticles and Where to Find Them
March 2025

135. Theoretical Physics Seminar, Raman Research Institute, Bangalore, India
A Strange Exchange: Paraparticles and Where to Find Them
March 2025

129–134. Lectures, Harish-Chandra Institute, Allahabad, India
Programmable Ultracold Quantum Matter (Lecs. 1-4)
Paraparticles (Colloquium and Lec. 6)
February 2025

128. Ankara Condensed Matter Colloquium, Turkey (virtual).
A Strange Exchange: Paraparticles and Where to Find Them
February 2025

127. Physics Seminar, University of Houston Clear-Lake, Houston, Texas.
Programmable Quantum Matter
February 2025.

126. Australian Institute of Physics Online Theoretical Physics seminar (virtual)
A Strange Exchange: Paraparticles and Where to Find Them
February 2025

125. New Developments with Synthetic Quantum Matter, Thouless Institute of Quantum Matter, University of Washington, Seattle, Washington
Programmable Quantum Matter: From Quantum Simulation to Paraparticles
January 2025

124. PQE (Physics of Quantum Electronics) Workshop, Snowbird, Utah
Paraparticles: Fantastic Particles and Where to Find Them
January 2025

123. Physics Colloquium, Miami University, Ohio
Programmable Quantum Matter
October 2024

122. Sam Houston State Colloquium
Programmable Quantum Matter
October 2024

120–121. Arnold Sommerfeld School on “Modeling strongly correlated electrons: Numerics, analytics, and quantum simulations", Ludwig Maximilian University of Munich, Munich, Germany
Theory of SU(N) systems: fundamentals and cold atoms (two lectures)
September 2024

119. Workshop: Cold and Controlled Molecules and Ions (CCMI) 2024, Institute for Science and Technology, Vienna, Austria
Shielded molecules: a new frontier of SU(N) physics
September 2024

118. Texas Defense Research Workshop, Washington, D.C.
Panelist on panel discussion
August 2024

117. American Chemical Society Fall Meeting, Symposium: The Mutual Chair-Lift of Chemistry and Quantum Computing, Denver, Colorado
Shielded molecules: a new frontier of SU(N) physic
August 2024

116. Dipolar Quantum Matter (ICAP Satellite Meeting), Durham, UK.
Shielded molecules: a new frontier of SU(N) physic
July 2024

115. International Workshop on SU(N) physics in quantum many-body systems: theory, experiment, and numerics, Sendai, Japan
What can the ultracold SU(N) Hubbard model teach us about correlated matter?
July 2024

114. Seminar, Department of Physics of Kyoto University, Kyoto, Japan
Programmable Quantum Matter
July 2024

113. Flatiron Center for Computational Quantum Physics Ultra Cold Fermionic Atoms Workshop, New York City,
Panelist for panel discussion
April 2024

112. School on “Frontiers at the Intersection of Quantum Simulation and Machine Learning", International Center for Theoretical Physics, Trieste, Italy
Programmable Quantum Matter
April 2024

111. Workshop on Ultracold Molecules, University of Warsaw, Warsaw, Poland
Programmable Quantum Matter
September 2023

110. Institute for Quantum Science and Engineering (IQSE) Summer Conference, Casper, Wyoming
Programmable quantum matter
July 2023

109. Seminar, Ludwig Maximilian University of Munich, Munich, Germany.
Programmable quantum matter
June 2023

108. Institute of Theoretical Physics Seminar, University of Goettingen, Germany
Programmable quantum matter
June 2023

107. Physics Seminar, King's College, London, UK
Programmable quantum matter
June 2023

106. Quantum Science with Ultracold Molecules workshop, Hertfordshire, UK
Programmable quantum matter
June 2023

105. Workshop on optical tweezers, University of Oklahoma, Norman, OK
Programming quantum matter: real space geometry and synthetic dimensions
June 2023

104. Rice-Europe Workshop on Future Directions in Spintronics and Quantum Materials, Paris, France
Programmable Quantum Matter,
May 2023

103. IQUIST (Illinois Quantum Institute of Science and Technology) seminar, University of Illinois, Urbana-Champaign, IL
Programmable Quantum Matter,
April 2023

102. Physics Colloquium, University of Houston, Houston, TX
Programmable Quantum Matter
March 2023

101. Physics Colloquium, Texas A&M University, College Station, TX
Programmable Quantum Matter
March 2023

100. AMO/QIS Seminar, Columbia University, New York City, NY
Programmable quantum matter with real and synthetic dimensions
March 2023

99. Theory Seminar, Fudan University, Fudan, China (virtual)
Programmable quantum matter with real and synthetic dimensions
March 2023

98. Public Talk on the 2022 Nobel Prize, The Ion, Houston, TX
Quantum nonlocality and the 2022 Nobel Prize: from Einstein's disbelief to quantum technology
January 2023

97. Quantum Simulation of the Doped Hubbard model, Harvard ITAMP workshop, Cambridge, Massachusetts
What can the SU(N) Hubbard model teach us about correlated matter?
November 2022

96. Physics Department Colloquium, CUNY, New York City, NY
Programmable quantum matter with real and synthetic dimensions
October 2022

95. Seminar, Flatiron Institute, New York City, NY
Quantum matter: from consequences of locality to parastatistical particles
October 2022

94. Physics Colloquium, George Mason University, Fairfax, Virginia (virtual)
Programmable quantum matter with real and synthetic dimensions
October 2022

93. Keynote talk at Gulf Coast Undergraduate Research Symposium (GCURS), Rice University, Houston, Texas.
Synthetic ultracold quantum matter
October 2022

92. Theory Seminar, Washington University, St. Louis
Quantum matter: from consequences of locality to parastatistical particles
September 2022

91. Programmable Quantum Matter workshop, Aspen Center for Physics, Aspen, Colorado
Synthetic Dipolar Matter
June 2022

90. APS March Meeting 2022 "Non-Equilibrium Physics with Cold Atoms and Molecules, Rydberg Gases, and Trapped Ions" session, Chicago, Illinois.
Exact results for nonequilibrium ultracold matter
March 2022

89. University of British Columbia-Rice Workshop on Topological Quantum Matter (virtual)
Topological synthetic dimensions with programmable ultracold matter
December 2021

88. UT Austin Quantum Collective-IBM Quantum Hackathon (virtual)
Variational quantum algorithms: from traditional to novel hardware
October 2021

87. Center for Quantum Research and Technology Seminar, University of Oklahoma, Norman, Oklahoma (virtual)
Synthetic dimensions in ultracold matter
August 2021

86. Condensed Matter in the City, London, UK (virtual)
Synthetic dimensions in ultracold matter
July 2021

85. Boulder Summer School on Ultracold Matter seminar, Boulder, Colorado (virtual)
Synthetic dimensions: ultracold molecules, Rydberg atoms, and momentum-space lattices
July 2021

84. International physics and astronomy webinar, Pabna University of Science and Technology, Pabna Bangladesh (virtual)
Ultracold quantum matter: science to technology
June 2021

83. DAMOP 2021 "Cold Gases: Frontiers of SU(N) Physics" session (virtual)
Correlations and Universality in Ultracold Alkaline Earth Atoms
June 2021

82. Rice Science Cafe & Salon, Houston, TX
Science for the Quantum Revolution
April 2021

81. Durham University Quantum Light and Matter Group (virtual) Seminar, Durham, United Kingdom
Synthetic dimensions: ultracold molecules, Rydberg atoms, and momentum-space lattices
October 2020

80. Rice University Physics and Astronomy Colloquium, Houston, TX
Ultracold Matter: How cold can it get? How fast can it move?
September 2020

79. Virtual seminar on quantum fluids in isolation, Boston College, Boston, Massachusetts
Ultracold SU(N) quantum magnetism and structure of correlations in many-body systems
June 2020

78. University of Goettingen Institute of Theoretical Physics virtual seminar, Goettingen, Germany
Ultracold SU(N) quantum magnetism and structure of correlations in many-body systems
June 2020

77. Texas Quantum Institute planning workshop on Quantum Algorithms, Austin, Texas
Connecting Quantum Algorithms to Analog Quantum Simulation
March 2020

76. Minerva-Gentner Symposium on "Quantum Simulations With Atoms, Molecules and Photons", Tze'elim, Israel
Harnessing internal states for quantum simulation
February 2020

75. Texas Quantum Institute workshop on Quantum Advantage with Quantum Simulation, Houston, Texas
Tutorial on Quantum simulation
February 2020

74. Michigan State University CM seminar, East Lansing, Michigan
The power within: Quantum magnetism in alkaline earth atoms & synthetic dimensions in molecules
February 2020

73. Imperial College London AMO seminar, London, United Kingdom
Synthetic dimensions in ultracold molecules (and elsewhere)
November 2019

72. "Exploring new regimes of dipolar physics with ultracold molecules," Durham University workshop, Durham, United Kingdom
Synthetic dimensions in ultracold molecules (and elsewhere)
November 2019

71. Keynote talk at Gulf Coast Undergraduate Research Symposium (GCURS), Houston, Texas
Quantum Simulation and Computation
November 2019

70. Texas Quantum Institute Kickoff Workshop, College Station, Texas
Quantum algorithms and computation in the TQI
October 2019

69. Georgia Tech condensed matter & AMO seminar, Atlanta, Georgia
Ultracold molecules: from topology to quantum strings
August 2019

68. "Emergent phenomena in ultracold atoms: merging topology, interaction, and dynamics" workshop, Kavli Institute for Theoretical Sciences (KITS), Beijing, China.
Synthetic dimensions and sticky collisions in ultracold molecules
June 2019

67. "Few-body Physics in Cold Atomic Gases conference", Zhuhai, China.
Sticky collisions and synthetic dimensions in ultracold molecules
June 2019

66. "New frontiers in cold molecules" workshop, Harvard ITAMP, Cambridge, Massachusetts.
Synthetic dimensions and sticky collisions in ultracold molecules
May 2019

65. University of Houston Physics Colloquium, Houston, Texas
Ultracold molecules as a new form of matter: from topology to quantum strings
Feb 2019

64. Advances on Quantum Simulation with Ultracold Atoms, International Institute of Physics (IIP), Natal, Brazil.
Synthetic dimensions in ultracold molecules: strings and topology
October-November 2018

63. Zyvexlabs Workshop on Designed 2D Quantum Metamaterials, Gaithersburg, Maryland.
Ultracold matter for quantum simulations: achievements, challenges, and opportunities
April 2018

62. American Chemical Society Spring Meeting, "Cold Molecules for Chemistry" symposium, New Orleans, Louisiana.
Synthetic dimensions in ultracold molecules: from strings to chemical synthesis
March 2018

61. APS March Meeting 2018, "Synthetic Physics: Synthetic Dimensions, Gauge Fields, and Spin-Orbit Coupling" session, Los Angeles, California
Synthetic dimensions in ultracold molecules: strings, membranes, topology
March 2018

60. Physics of Quantum Electronics workshop, Snowbird, Utah
Synthetic dimensions in ultracold molecules
January 2018

59. Brazilian Physical Society Meeting, XL ENFMC, Buzios, Brazil
Synthetic dimensions and chaotic collisions in ultracold molecules
August 2017.

58. Aspen Center for Physics workshop: "Correlations and Entanglement In and Out of Equilibrium", Aspen, Colorado
Synthetic dimensions and chaotic collisions in ultracold molecules
June 2017.

57. Smalley-Curl Institute Lunch Seminar, Rice University, Houston, Texas.
Ultracold matter as analogs of quantum materials... and beyond
April 2017

56. Geometry-Analysis seminar, Rice University Department of Mathematics, Houston, Texas
Ultracold matter: a window into many-particle quantum physics
April 2017

55. Zhejiang University Physics Seminar, Hangzhou, China
Ultracold nonreactive molecules: from chaotic collisions to exotic physics
October 2016

54. Fudan University Physics Seminar, Shanghai, China
Ultracold nonreactive molecules: from chaotic collisions to exotic physics
October 2016

53. Joint ICQM-RCQM Workshop on Quantum Matters, Beijing, China.
Ultracold nonreactive molecules: from chaotic collisions to exotic physics
October 2016

52. Aspen Center for Physics workshop: "Light-matter Interaction and Quantum Control In Many-body Systems", Aspen, Colorado
Ultracold nonreactive molecules in an optical lattice: nonstandard Hubbard models from chaotic collisions
June 2016

51. Rice Center for Quantum Materials workshop: Interacting Quantum Systems Driven Out of Equilibrium, Houston, Texas.
Entanglement in "hot" (100 nK) nonequilibrium matter
May 2016

50. Trinity University Physics Seminar, San Antonio, Texas.
Novel ultracold platforms for quantum science
November 2015.

49. Aspen Center for Physics workshop: "Ultra-cold Quantum Matter with Atoms and Molecules," Aspen, Colorado.
Nonreactive ultracold molecules in a lattice: harnessing complex collisions for many-body physics
July 2015

48. DAMOP 2015, "Non-equilibrium dynamics in strongly interacting atomic systems" session, Columbus, Ohio
Spin-motion coupled dynamics in ultracold atoms and molecules
June 2015

47. Ohio State University Condensed Matter seminar, Columbus, Ohio.
Quantum magnetism with ultracold molecules far-from-equilibrium
April 2015

46. Ohio University Condensed Matter and Surface Science colloquium, Athens, Ohio.
What I create, I understand: engineering ultracold matter to decipher real materials
April 2015

45. Louisiana State University quantum science and technology seminar, Baton Rouge, Louisiana.
No democracy for entanglement: not all entanglements are created equal
March 2015

44. Louisiana State University physics colloquium, Baton Rouge, Louisiana.
The miracle of molecules: exploring quantum magnetism in ultracold matter
March 2015

43. National Institute for Theoretical Physics in Stellenbosch workshop on "Quantum Many-Body Systems Far From Equilibrium," Stellenbosch, South Africa.
Correlations and entanglement in open quantum systems
March 2015

42. Joint ICQM Peking - RCQM meeting, Houston, Texas
Atomic, Molecular, and Optical Physics at Rice University
March 2015

41. U.S.-France Workshop on Nano, Extreme Measurements, and Theory (NEXT), an RCQM International Initiative, Houston, Texas
Atomic, Molecular, and Optical Physics at Rice University
February 2015

40. Rice Center for Quantum Materials inaugural symposium, Houston, Texas
Ultracold molecules: quantum magnetism far-from-equilibrium
December 2014

39. Heidelberg Center for Quantum Dynamics colloquium, Heidelberg, Germany.
The miracle of molecules: exploring quantum magnetism in ultracold matter
November 2014.

38. Stuttgart University physics seminar, Stuttgart, Germany.
The miracle of molecules: far-from-equilibrium quantum magnetism in ultracold matter
November 2014.

37. Technical University of Munich condensed matter and many-body physics seminar, Munich, Germany.
The miracle of molecules: quantum magnetism in ultracold matter
November 2014.

36. Sam Houston State University physics colloquium, Huntsville, Texas.
The miracle of molecules: exploring quantum magnetism in ultracold matter
October 2014

35. University of Illinois Urbana-Champaign AMO/quantum information seminar, Champaign-Urbana, Illinois.
Quantum magnetism in ultracold molecules
October 2014

34. University of Texas at Austin complex quantum systems seminar, Austin, Texas.
The miracle of molecules: exploring quantum magnetism in ultracold matter
October 2014

33. ECT* workshop on "Hydrodynamics for Strongly Coupled Fluids," Trento, Italy
Quench of a Bose gas to unitarity: dynamics and novel universal singularities
May 2014

32. University of Goettingen condensed matter theory seminar, Goettingen, Germany
Observing quantum magnetism with ultracold polar molecules
May 2014

31. DARPA optical lattice emulator program workshop, Arlington, Virginia
Many-body quantum magnetism of dipolar molecules in an optical lattice
February 2014

30. University of Colorado Condensed Matter Theory seminar, Boulder, Colorado
Quantum magnetism with ultracold molecules
February 2014

29. Rice University physics colloquium, Houston, Texas.
Quantum simulation with strongly-correlated ultracold polar molecules
January 2014

28. University of Chicago James Franck Institute seminar, Chicago, Illinois
Quantum magnetism in ultracold molecules: comparing theory and experiment
November 2013

27. University of Maryland Condensed Matter Theory Center (CMTC) seminar, College Park, Maryland
Quantum magnetism in ongoing ultracold molecule and ion experiments
March 2013

26. Georgetown University physics seminar, Washington D. C.
Quantum magnetism in ongoing ultracold molecule and ion experiments
March 2013

25. FINESS-2013 (Finite-temperature Non-Equilibrium Superfluid Systems), Queenstown, New Zealand
Far-from equilibrium dynamics of frustrated spin models: polar molecules, ions, and beyond
February 2013

24. University of Queensland Quantum Science Seminar, Brisbane, Australia
Novel systems in and out of equilibrium bring ultracold quantum magnetism closer to reality
February 2013

23. Kavli Institute for Theoretical Physics (KITP), UCSB, Santa Barbara, California
Non-equilibrium many-body physics in current molecule experiments
February 2013

22. DARPA optical lattice emulator program workshop, Miami, Florida
Non-equilibrium Ising quenches with decoherence: an exact solution
November 2012

21. Harvard ITAMP AMO seminar, Boston, Massachusetts
Towards exotic physics using novel ultracold matter: polar molecules and alkaline earth atoms
March 2012

20. DARPA optical lattice emulator program workshop, Ft. Lauderdale, Florida
Quantum criticality and non-equilibrium dynamics in ultracold lattice systems
December 2011

19. Rice University AMO seminar, Houston, Texas
Towards topological phases via new ultracold matter: molecules and alkaline earths
September 2011

18. University of California, Davis condensed matter seminar, Davis, California
Spin liquids and non-quasiparticle matter in ultracold atoms,
February 2011

17. Berkeley AMO seminar, Berkeley, California
Spin liquids and non-quasiparticle matter in ultracold atoms
February 2011

16. Ludwig-Maximilians University/Max-Planck Institute for Quantum Optics seminar, Munich, Germany
Exploring the Mott/metal crossover in ultracold alkali and alkaline earth atoms in optical lattices
December 2010

15. Freiburg University FRIAS seminar, Freiburg, Germany
Exploring the Mott/metal crossover in ultracold alkali and alkaline earth atoms in optical lattices
November 2010

14. Stuttgart University seminar, Stuttgart, Germany
Exploring the Mott/metal crossover in ultracold alkali and alkaline earth atoms in optical lattices
November 2010

13. Institute for Theoretical Physics, University of Cologne seminar, Cologne, Germany
Exploring the Mott/metal crossover in ultracold alkali and alkaline earth atoms in optical lattices
November 2010.

12. IQOQI Cold Atoms Seminar, Innsbruck, Austria
Exploring the Mott/metal crossover in ultracold alkali and alkaline earth atoms in optical lattices
November 2010

11. DAMOP 2010 “Novel Probes of Ultra-Cold Atom Gases" session, Houston, Texas.
RF spectra of lattice bosons: a probe of correlations, fluctuations, and quantum criticality
May 2010

10. Ecole Normale Supérieure de Lyon colloquium, Lyon, France.
Measuring universal quantum critical behavior in ultracold gases
April 2010

9. Niels Bohr Institute Cold Atoms group meeting, Copenhagen, Denmark
Measuring universal quantum critical behavior in ultracold gases
April 2010

8. Harvard ITAMP AMO seminar, Boston, Massachusetts
Measuring universal quantum critical behavior in ultracold gases
March 2010

7. JILA/University of Colorado AMO/condensed matter seminar, Boulder, Colarado
Measuring universal quantum critical behavior in ultracold gases
March 2010

6. Princeton, Scully group Quantum Optics meeting
   Detecting many-body physics of quantum phase transitions in cold atoms
   February 2010
5. DARPA optical lattice emulator program; Phase II kickoff, Miami, Florida
   Probing quantum criticality in cold atoms
   December 2009
4. Ohio State University, Wilkins group meeting.
   Exploring many-body physics with cold atoms: achievements and challenges
   July 2009
3. Centre for Quantum Computer Technology seminar, University of New South Wales, Sydney, New South Wales, Australia
   Electrical Simulation of Quantum Algorithms
   November 2003
2. Materials Computation Center seminar, University of Illinois Urbana-Champaign, IL
   New small silicon interstitial clusters
   July 2003
1. Semiconductor Research Corporation review, Seattle, WA
   Dopant structures and their electronic properties. (Substituting for P.I.)
   May 2003

Contributed presentations

Prior to 2014, contributed over 40 talks and posters to meetings, conferences, and workshops.