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PERSONAL INFORMATION

Born: 1979
Citizenship: United States

EDUCATION

| | |
|-----------|--|
| Dec 2006 | Ph.D. Physics, University of Colorado, Boulder, CO |
| June 2001 | B.A. Physics, Summa Cum Laude, Lawrence University, Appleton, WI |
| June 1997 | Duluth East High School, Duluth, MN |

APPOINTMENTS

| | |
|---------------------|--|
| Sept 2016 - Present | Associate Professor of Physics, University of Colorado, Boulder |
| June 2015 - Present | JILA Fellow |
| Jan 2010 - Aug 2016 | Assistant Professor of Physics, University of Colorado, Boulder |
| Jan 2010 - May 2015 | Associate JILA Fellow |
| 2007 - 2009 | Millikan Postdoctoral Fellow, California Institute of Technology |
| 2006 - 2007 | Postdoctoral Researcher, JILA, Boulder, CO |
| 2001 - 2006 | Graduate Research Assistant, JILA, Boulder |

AWARDS

Alexander Cruickshank Lecturer Quantum Sciences GRC, 2018
Outstanding Referee of American Physical Society Journals, 2017
Fellow, American Physical Society, 2017
CO-Labs Colorado Governor's Award for high-impact Research, 2016
University of Colorado Provost's Faculty achievement award, 2014
Cottrell Scholars Award, Research Corporation, 2014
Presidential Early Career Award for Scientists and Engineers (PECASE), 2012
Packard Fellowship in Science and Engineering, 2011
Clare Boothe Luce Assistant Professorship in Physics, University of Colorado, 2010-Present
Millikan Prize Postdoctoral Fellowship, California Institute of Technology, 2007-2009
Hertz Foundation doctoral thesis prize winner, 2007
APS Division of AMO Physics (DAMOP) thesis prize winner, 2007
JILA scientific achievement award, 2005
Hertz Foundation Fellowship for graduate studies in the physical sciences, 2001-2006
National Science Foundation Graduate Fellowship, declined 2001
Barry M. Goldwater scholarship in science and mathematics, 2000-2001
Clare Boothe Luce scholarship, 1998-2000

PUBLICATIONS

Refereed articles:

48. T. Thiele, Y. Lin, M.O. Brown, C.A. Regal, Self-Calibrating Vector Atomic Magnetometry through Microwave Polarization Reconstruction, *Phys. Rev. Lett.* **121**, 153202 (2018).
47. E. Munro, A. Asenjo-Garcia, Y. Lin, L.C. Kwek, C.A. Regal, D.E. Chang, Population mixing due to dipole-dipole interactions in a one-dimensional array of multilevel atoms, *Physical Review A* **98**, 033815 (2018).
46. A.P. Higginbotham, P.S. Burns, M.D. Urmev, R.W. Peterson, N.S. Kampel, B.M. Brubaker, G. Smith, K.W. Lehnert, C.A. Regal, Harnessing electro-optic correlations in an efficient mechanical converter, *Nature Physics* **14**, 1038 (2018).
45. B.J. Lester, Y. Lin, M.O. Brown, A.M. Kaufman, R.J. Ball, E. Knill, A.M. Rey, C.A. Regal, Measurement-Based Entanglement of Noninteracting Bosonic Atoms, *Phys. Rev. Lett.* **120**, 193602 (2018).
44. A.M. Kaufman, M.C. Tichy, F. Mintert, A.M. Rey, C.A. Regal, *The Hong–Ou–Mandel Effect With Atoms*, *Advances In Atomic, Molecular, and Optical Physics* **67**, 377 (2018).
43. T. Menke, P.S. Burns, A.P. Higginbotham, N.S. Kampel, R.W. Peterson, K. Cicak, R.W. Simmonds, C.A. Regal, K.W. Lehnert, Reconfigurable re-entrant cavity for wireless coupling to an electro-optomechanical device, *Rev. Sci. Instrum.* **88**, 094701 (2017).
42. N. S. Kampel, R. W. Peterson, R. Fischer, K. Cicak, R. W. Simmonds, K. W. Lehnert, and C. A. Regal, Improving broadband displacement detection with quantum correlations, *Phys. Rev. X* **7**, 021008 (2017).
41. R. W. Peterson, T. P. Purdy, N. S. Kampel, R. W. Andrew, K. W. Lehnert, and C. A. Regal, Laser cooling of a micromechanical membrane to the quantum backaction limit, *Phys. Rev. Lett.* **116**, 063601 (2016).
39. A.M. Kaufman, B.J. Lester, M. Foss-Feig, M.L. Wall, A.M. Rey, C.A. Regal, Entangling two transportable neutral atoms via local spin exchange. *Nature* **527**, 208 (2015).
38. T.P. Purdy, P.L. Yu, N.S. Kampel, R.W. Peterson, K. Cicak, R.W. Simmonds, C.A. Regal, Optomechanical Raman-ratio thermometry. *Phys. Rev. A* **92**, 031802(R) (2015).
37. B. J. Lester, N. Luick, A. M. Kaufman, C. M. Reynolds, and C. A. Regal, Rapid production of uniform arrays of neutral atoms. *Phys. Rev. Lett.* **115**, 073003 (2015).
36. B. J. Lester, A. M. Kaufman, and C. A. Regal, Raman cooling imaging: Detecting single atoms near their ground state of motion. *Phys. Rev. A* **90**, 011804(R) (2014).
35. A. M. Kaufman, B. J. Lester, C. M. Reynolds, M. L. Wall, M. Foss-Feig, K. R. A. Hazzard, A. M. Rey, C. A. Regal, Two-particle quantum interference in tunnel-coupled optical tweezers. *Science* **345**, 306 (2014). [Featured in Science Perspective article]
34. G. D. Cole, P.-L. Yu, C. Gartner, K. Siquans, R. Moghadas Nia, J. Schmole, J. Hoelscher-Obermaier, T. P. Purdy, W. Wieczorek, C. A. Regal, and M. Aspelmeyer, Tensile strained $\text{In}_x\text{Ga}_{1-x}\text{P}$, *Appl. Phys. Lett.* **104**, 201908 (2014).
33. P.-L. Yu, K. Cicak, N. S. Kampel, Y. Tsaturyan, T. P. Purdy, R. W. Simmonds, and C. A. Regal, A phononic bandgap shield for high-Q membrane microresonators, *Appl. Phys. Lett.* **104**, 023510 (2014).

32. R. W. Andrews, R. W. Peterson, T. P. Purdy, K. Cicak, R. W. Simmonds, C. A. Regal, and K. W. Lehnert, Bidirectional and efficient conversion between microwave and optical light, *Nature Phys.* **10**, 321 (2014).
31. T. P. Purdy, P.-L. Yu, R. W. Peterson, N. S. Kampel, and C. A. Regal, Strong optomechanical squeezing of light, *Phys. Rev. X* **3**, 031012 (2013). [Featured as APS Physics Viewpoint]
30. T. P. Purdy, R. W. Peterson, and C. A. Regal, Observation of radiation pressure shot noise on a macroscopic object, *Science* **339**, 801 (2013). [Featured in Science Perspective article]
29. S. A. McGee, D. Meiser, C. A. Regal, K. W. Lehnert, and M. J. Holland, Mechanical resonators for storage and transfer of electrical and optical quantum states, *Phys. Rev. A* **87**, 053818 (2013).
28. A. M. Kaufman, B. J. Lester, and C. A. Regal, Cooling a single atom in an optical tweezer to its quantum ground state, *Phys. Rev. X* **2**, 041014 (2012). [Featured as an APS Physics Synopsis, a Nature Research Highlight, and a Science Magazine Editors' Choice]
27. T. P. Purdy, R. W. Peterson, P.-L. Yu, and C. A. Regal, Cavity optomechanics with Si₃N₄ membranes at cryogenic temperatures, *New J. Phys.* **14**, 115021 (2012).
26. P.-L. Yu, T. P. Purdy, and C. A. Regal, Control of material damping in high-Q membrane microresonators, *Phys. Rev. Lett.* **108**, 083603 (2012).
25. C. A. Regal and K. W. Lehnert, From cavity electromechanics to cavity optomechanics, *J. Phys.: Conf. Ser.* **264**, 012025 (2010).
24. D. E. Chang, C. A. Regal, S. B. Papp, D. J. Wilson, J. Ye, O. Painter, H. J. Kimble, and P. Zoller, Cavity optomechanics using an optically levitated nanosphere, *Proc. Natl. Acad. Sci. USA* **107**, 1005 (2010).
23. D. J. Wilson, C. A. Regal, S. B. Papp, and H. J. Kimble, Cavity optomechanics with stoichiometric SiN films, *Phys. Rev. Lett.* **103**, 207204 (2009).
22. Takao Aoki, A. S. Parkins, D. J. Alton, C. A. Regal, Barak Dayan, E. Ostby, K. J. Vahala, and H. J. Kimble, Efficient routing of single photons by one atom and a microtoroidal cavity, *Phys. Rev. Lett.* **102**, 083601 (2009).
21. J. D. Teufel, J. W. Harlow, C. A. Regal, and K. W. Lehnert, Dynamical backaction of microwave fields on a nanomechanical oscillator, *Phys. Rev. Lett.* **101**, 197203 (2008).
20. J. D. Teufel, C. A. Regal, and K. W. Lehnert, Prospects for cooling nanomechanical motion by coupling to a superconducting microwave resonator, *New J. Phys.* **10**, 095002 (2008).
19. C. A. Regal, J. D. Teufel, and K. W. Lehnert, Measuring nanomechanical motion with a microwave cavity interferometer, *Nature Physics* **4**, 555 (2008).
18. J. T. Stewart, J. P. Gaebler, C. A. Regal, and D. S. Jin, The potential energy of a ⁴⁰K Fermi gas in the BCS-BEC crossover, *Phys. Rev. Lett.* **97**, 220406 (2006).
17. Q. Chen, C. A. Regal, D. S. Jin, and K. Levin, Finite-temperature momentum distribution of a trapped Fermi gas, *Phys. Rev. A* **74**, 011601 (2006).
16. Q. Chen, C. A. Regal, M. Greiner, D. S. Jin, and K. Levin, Understanding the superfluid phase diagram in trapped Fermi gases, *Phys. Rev. A* **73**, 041601 (2006).
15. C. A. Regal, M. Greiner, S. Giorgini, M. Holland, and D. S. Jin, Momentum distribution of a Fermi gas of atoms in the BCS-BEC crossover, *Phys. Rev. Lett.* **95**, 250404 (2005).
14. M. Greiner, C. A. Regal, J. T. Stewart, and D. S. Jin, Probing pair-correlated fermionic atoms through correlations in atom shot noise, *Phys. Rev. Lett.* **94**, 110401 (2005).
13. E. Hodby, S. T. Thompson, C. A. Regal, M. Greiner, A. C. Wilson, D. S. Jin, E. A. Cornell, and C. E. Wieman, Production efficiency of ultracold Feshbach molecules in bosonic and fermionic systems, *Phys. Rev. Lett.* **94**, 120402 (2005).

12. M. Greiner, C. A. Regal, and D. S. Jin, Probing the excitation spectrum of a Fermi gas in the BCS-BEC crossover regime, *Phys. Rev. Lett.* **94**, 070403 (2005).
11. C. A. Regal, M. Greiner, and D. S. Jin, Observation of resonance condensation of fermionic atom pairs, *Phys. Rev. Lett.* **92**, 040403 (2004).
10. M. Greiner, C. A. Regal, C. Ticknor, J. L. Bohn, and D. S. Jin, Detection of spatial correlations in an ultracold gas of fermions, *Phys. Rev. Lett.* **92**, 150405 (2004).
9. M. Greiner, C. A. Regal, and D. S. Jin, Emergence of a molecular Bose-Einstein condensate from a Fermi gas, *Nature* **426**, 537 (2003).
8. C. A. Regal, M. Greiner, and D. S. Jin, Lifetime of molecule-atom mixtures near Feshbach resonance in ^{40}K , *Phys. Rev. Lett.* **92**, 083201 (2004).
7. C. Ticknor, C. A. Regal, D. S. Jin, and J. L. Bohn, Multiplet structure of Feshbach resonances in nonzero partial waves, *Phys. Rev. A* **69**, 042712 (2004).
6. C. A. Regal, C. Ticknor, J. L. Bohn, and D. S. Jin, Creation of ultracold molecules from a Fermi gas of atoms, *Nature* **424**, 47 (2003).
5. C. A. Regal and D. S. Jin, Measurement of positive and negative scattering lengths in a Fermi gas of atoms, *Phys. Rev. Lett.* **90**, 230404 (2003).
4. C. A. Regal, C. Ticknor, J. L. Bohn, and D. S. Jin, Tuning p -wave interactions in an ultracold Fermi gas of atoms, *Phys. Rev. Lett.* **90**, 053201 (2003).
3. T. Loftus, C. A. Regal, C. Ticknor, J. L. Bohn, and D. S. Jin, Resonant control of elastic collisions in an optically trapped Fermi gas of atoms, *Phys. Rev. Lett.* **88**, 173201 (2002).
2. B. P. Anderson, P. C. Haljan, C. A. Regal, D. L. Feder, L. A. Collins, C. W. Clark, and E. A. Cornell, Watching dark solitons decay into vortex rings in a Bose-Einstein condensate, *Phys. Rev. Lett.* **86**, 2926 (2001).
1. J. R. Brandenberger, C. A. Regal, R. O. Jung, and M. C. Yakes, Fine-structure splittings in ^2F states of rubidium via three-step laser spectroscopy, *Phys. Rev. A* **65**, 042510 (2002).

Invited articles:

1. C. A. Regal, Perspective: Bringing order to trapped neutral atom arrays, *Science* **354**, 972 (2016).
2. A. M. Kaufman and C. A. Regal, Viewpoint: Electron model captured by atom pair, *Physics* **8**, 16 (2015).

Non-refereed publications and proceedings:

7. R. W. Andrews, R. W. Peterson, T. P. Purdy, K. Cicak, R. W. Simmonds, C. A. Regal, and K. W. Lehnert, Laser resonators, microresonators, and beam control XVII, *Proceedings of SPIE*, 934309 (2015).
6. P.-L. Yu, T. P. Purdy, G. D. Cole, C. A. Regal, New directions in high-Q optomechanical membrane resonators, *CLEO: Science and Innovations (OSA Technical Digest)*, No. CW3F.8 (2013).
5. T. P. Purdy, R. W. Peterson, P.-L. Yu, and C. A. Regal, A cryogenic cavity optomechanics system for membrane microresonators, *CLEO: Science and Innovations (OSA Technical Digest)*, No. CW3M.5 (2012).
4. Takao Aoki, A. S. Parkins, D. J. Alton, C. A. Regal, Barak Dayan, E. Ostby, K. J. Vahala, H. J. Kimble, Efficient routing of single photons with one atom and a microtoroidal cavity, *CLEO: Science and Innovations (OSA Technical Digest)*, No. IMF1 (2009).

3. D. S. Jin and C. A. Regal, Fermi gas experiments, *Proceedings of the International School of Physics "Enrico Fermi"* (2006).
2. C. A. Regal and D. S. Jin, Realization of the BCS-BEC crossover with a Fermi gas of atoms, *Advances in Atomic, Molecular, and Optical Physics*, Elsevier, London, Vol. 54, Chpt. 1 (2006).
1. M. Greiner, C. A. Regal, and D. S. Jin, Fermionic condensates, *Atomic Physics 19: XIX International Conference on Atomic Physics*, Vol. 770 (2005).

TEACHING

Courses:

- Electronics for the physical sciences, PHYS 3330, Spring 2010
- Electronics for the physical sciences, PHYS 3330, Spring 2011
- Physics II: Electricity and magnetism (2nd position), PHYS 1120, Fall 2011
- Quantum mechanics and atomic physics I, PHYS 3220, Spring 2012
- Physics II: Electricity and magnetism (2nd position), PHYS 1120, Fall 2012
- Quantum mechanics and atomic physics I, PHYS 3220, Spring 2013
- Experimental modern physics, PHYS 2150, Fall 2013
- Experimental modern physics, PHYS 2150, Fall 2014
- Light and Color, PHYS 1230, Spring 2015
- Electronics for the physical sciences, PHYS 3330, Fall 2015
- Light and Color, PHYS 1230, Spring 2016
- Quantum mechanics and atomic physics II, PHYS 4410, Spring 2017
- Physics I: Classical mechanics, PHYS 1110, Spring 2018
- Physics II: Electricity and magnetism, PHYS 1120, Fall 2018

Advising:

Current Research group members:

- Mark Brown, graduate student
- Ting-Wei Hsu, graduate student
- Maxwell Urmey, graduate student
- Christopher Kiehl, graduate student
- Christopher Reetz, graduate student

- Tobias Thiele, postdoctoral researcher
- Benjamin Brubaker, postdoctoral researcher (joint supervised)

- Dylan McNally, CU undergraduate student
- Remi Ruyle, CU undergraduate student
- Daniel Wagner, CU undergraduate student

Past Research group members:

- Adam Kaufman, graduate student (PhD 2015)
- Pen-Li Yu, graduate student (PhD 2015)
- Brian Lester, graduate student (PhD 2016)
- Robert Peterson, graduate student (PhD 2017)

- Kai-Nicholas Schymik, visiting student (University of Heidelberg)
- Kathrin Kleinbach, visiting student (University of Stuttgart)
- Niclas Luick, visiting student (University of Hamburg)
- Oliver Wipfli, visiting master's student (ETH Zurich)

- Thomas Purdy, postdoctoral researcher
- Nir Kampel, postdoctoral researcher
- Ran Fischer, postdoctoral researcher
- Andrew Higginbotham, postdoctoral researcher
- Yiheng Lin, postdoctoral researcher

- Ian Caldwell, CU undergraduate student
- Christine Alvarez, CU undergraduate student
- Alec Jenkins, CU undergraduate student
- Yeghishe Tsaturyan, visiting undergraduate student
- Gustaf Downs, NSF REU student
- Alex Wilke, CU undergraduate student
- Joshua Karpel, CU undergraduate student
- Cooper Sinai-Yunker, summer visiting undergraduate
- Michael Winterfeld, CU undergraduate student
- Benjamin Miller, CU undergraduate student
- Rachel Lindley, summer visiting undergraduate
- Mika Chmielewski, NSF REU student
- Randall Ball, CU undergraduate student
- Gabriel Assumpcao, CU undergraduate student

SERVICE

- *Journal reviewer for:* Physical Review Letters, Physical Review A, Physical Review B, Physical Review X, Applied Physics Letters, Journal of Applied Physics, Entropy, Journal of Physics B, Nano Letters, Nature, Nature Physics, Nature Photonics, Science, Science Advances
- *Editorial Board Member for:* Physical Review X
- *Advisory Board Member for:* Journal of Physics B: Atomic, Molecular and Optical Physics
- Member of JILA Physics Frontier Center Executive Committee
- Member of APS DAMOP AMO Thesis Jin Prize Committee (2017 – 2018)

- International Conference on Atomic Physics (ICAP) Program Committee (2016 – 2017)
- CU physics department committees in past 5 years: Arts & Science undergraduate advising, Undergraduate research committee, Strategic planning committee
- University of Colorado Research and Innovation Office (RIO) advisory board
- APS DAMOP executive committee member (2018 - 2020)

INVITED PRESENTATIONS

Invited talks at conferences and workshops:

- INQNET Quantum Transduction Workshop, September 2018: *Harnessing electro-optic correlations in an efficient mechanical converter*
- Gordon Research Conference – Quantum Science, July 2018: Alexander M. Cruikshank lecture *Interferometers harnessing micromechanical motion for quantum metrology*
- APS March Meeting, Los Angeles, California, March 2018: *Interfering and entangling neutral atoms in optical tweezers*
- Gordon Research Conference – Mechanical Systems in the Quantum Regime, February 2018: *Hybrid Mechanical Systems*
- Australia/New Zealand Conference on Quantum Optics (ANZCOP), Queenstown, New Zealand, December 2017: *Prospects for a quantum electro-optic device through micromechanical motion*
- International Center for Theoretical Physics (ICTP), Trieste, Sept 2017: *Electro-optic correlations improve an efficient mechanical converter*
- Atomic Physics Gordon Research Conference, Salve Regina Univ, June 2017: *Interfering and entangling single bosonic atoms*
- APS DAMOP meeting, Sacramento, CA, June 2017: *Constructing quantum states of light with moving mirrors*
- Heraeus Quantum-limited metrology and sensing conference, Bad Honnef, Germany, Feb 2017: *Improving broadband displacement detection with quantum correlations*
- Quantum Nanomechanics 2016, Monte Verita, Switzerland, July 2016: *Improving broadband displacement detection via quantum correlations*
- KITP Few-Body systems, Santa Barbara, CA, Nov 2016: *Interfering and entangling single neutral atoms*
- Workshop on many-body quantum dynamics and open quantum systems, Glasgow, UK, Sept 2016: *Towards a quantum interface between electricity and light*
- Southwest Quantum Information and Technology (SQuINT) meeting, Albuquerque, NM, February 2016: *Interfering and entangling single neutral atoms*
- Gordon Research Conference – Mechanical Systems in the Quantum Regime, March 2016: *Towards a quantum interface between electricity and light*
- BEC 2015 Frontiers in Quantum Gases, Barcelona, Spain, September 2015: *Experiments with two bosonic atoms: Hong-Ou-Model effect and spin exchange entanglement*
- APS DAMOP meeting, Columbus, OH, June 2015: *Interfering and entangling single neutral atoms*

- ITAMP workshop on hybrid quantum systems, Tucson, AZ, February 2015: *Towards a quantum interface between electricity and light*
- Physics of Quantum Electronics (PQE) Conference, January 2015, Snowbird, UT
- Frontier in Optics/Laser Science, APS/DLS, Tucson, AZ, October 2014: *Efficient and bidirectional conversion between microwave and optical light*
- International Conference on Atomic Physics, Washington DC, August 2014: *Two-atom quantum interference in tunnel-coupled optical tweezers*
- Quantum Nanomechanics 2013, Monte Verita, Switzerland, July 2013: *Observation of radiation pressure shot noise and squeezed light with an optomechanical device*
- APS March Meeting, Baltimore, Maryland, March 2013: *Exploring quantum limits with micromechanical membranes*
- KITP New directions in the quantum control landscape, Santa Barbara, California, February 2013: *Observation of radiation pressure shot noise on a solid object*
- Workshop on orbital physics in cold atom systems, Chinese Academy of Sciences, Beijing, January 2013: *Laser cooling a single atom in an optical tweezer to its 3D ground state*
- Quantum interfaces: Integrating light, atoms and solid-state devices, IOP, Milton Keynes, United Kingdom, May 2012: *Cavity optomechanics with hybrid membrane microresonators*
- Mechanical Systems in the Quantum Regime Gordon Conference, Galveston, Texas, March 2012: *Cavity optomechanics with hybrid membrane microresonators*
- Atomic Physics Gordon Conference, Mount Snow, Vermont, July 2011: *Cavity optomechanics for a microwave to optical quantum link*
- New Laser Scientist's Conference, Rochester, New York, November 2010: *From cavity electromechanics to cavity optomechanics*
- International Conference on Atomic Physics, Cairns, Australia, July 2010: *From cavity electromechanics to cavity optomechanics*
- APS March meeting, New Orleans, Louisiana, March 2008, in focus session on 'Approaching quantum limits in optomechanical systems': *Measuring nanomechanical motion with a microwave cavity interferometer*
- APS DAMOP meeting, Calgary, Alberta, Thesis prize session, May 2007: *Experimental realization of BCS-BEC crossover physics with a Fermi gas of atoms*
- APS March meeting, Baltimore, Maryland, March 2006: *Studying the BCS-BEC crossover regime with a Fermi gas of ^{40}K atoms*
- Conference on the theory of quantum gases and quantum coherence, Cortona, Italy, October 2005: *Studying the BCS-BEC crossover with a Fermi gas of ^{40}K atoms*
- Workshop on new developments in quantum gases, University of Washington Institute for Nuclear Theory, Seattle, Washington, August 2005: *Studying the BCS-BEC crossover with a Fermi gas*
- Aspen physics workshop, Aspen, Colorado, June 2005: *Paired Fermi gases: From BCS-BEC crossover physics to probing pair-correlated atoms through correlations in atom shot noise*
- Atomic physics Gordon conference, Tilton, New Hampshire, July 2005: *Studying the BCS-BEC crossover regime with a Fermi gas of atoms*
- APS March meeting, Montreal, Quebec, March 2004: *Condensation of fermionic atom pairs*
- Bose-Einstein Condensation 2003, San Feliu de Guixols, Spain, September 2003: *Creation of ultracold molecules from a Fermi gas of atoms*

Invited seminars and colloquia:

- Heidelberg Center for Quantum Dynamics Colloquium, Heidelberg, Germany, January 2018: *Measurement-based entanglement of non-interacting bosonic atoms*
- Max-Planck-Institut for Quantenoptik (MPQ) Colloquium, Garching, Germany, January 2018: *Prospects for a quantum electro-optic converter via micromechanical motion*
- University of Queensland physics colloquium, December 2017: *Interferometry in a strong light*
- University of Queensland seminar, December 2017: *Interfering and entangling single bosonic atoms*
- University of Minnesota physics colloquium, October 2017: *Interferometry in a strong light*
- University of Minnesota condensed matter seminar, October 2017: *Prospects for quantum electro-optic conversion through micromechanical motion*
- University of California, Berkeley, AMO seminar, November 2017: *Prospects for quantum electro-optic conversion through micromechanical motion*
- Innsbruck Institute for Quantum Optics and Quantum Information colloquium, September 2017: *Prospects for quantum electro-optic conversion through micromechanical motion*
- Harvard/MIT Center for Ultracold Atoms seminar, March 2017: *Interfering and entangling bosonic atoms*
- Harvard Physics Colloquium, March 2017: *Interferometry in a strong light*
- Stanford seminar, January 2017: *Improving broadband displacement detection via quantum correlations*
- University of Maryland Joint Quantum Institute seminar, Dec 2016: *Improving displacement detection via quantum correlations*
- ETH Zurich, Physics Department Colloquium, May 2016: *Interferometry in a strong light*
- University of California, Santa Barbara, Physics Department Colloquium, May 2015: *Interferometry in a strong light*
- California Institute of Technology, Physics Department Colloquium, April 2015: *Interferometry in a strong light*
- Princeton, Physics Department Colloquium, March 2015: *Interferometry in a strong light*
- Harvard/MIT Center for Ultracold atoms seminar, November 2014: *Two-atom quantum interference in tunnel-coupled optical tweezers*
- Yale University Physics Club Colloquium, Nov 2013: *Interferometry in a strong light: Constructing quantum states of light with moving mirrors*
- Max-Planck-Institut for Quantenoptik (MPQ) Colloquium, Garching, Germany, July 2013: *Exploring quantum limits to optical measurement with mm-scale drums*
- Harvard/MIT Center for Ultracold atoms seminar, November 2011: *Cavity optomechanics with hybrid membrane resonators*
- Lawrence University, Summer Research Seminar, June 2011: *Strings and drums: Microresonators go quantum*
- The Pennsylvania State University, Atomic Physics Seminar, November 2008: *Cooling and detecting nanomechanical motion with a microwave cavity*
- Cornell University, Condensed Matter Physics Seminar, October 2008: *Cooling and measuring motion of nanomechanical oscillators with microwave fields*

- University of Maryland, Joint Quantum Institute Seminar, May 2008: *Cooling and measuring nanomechanical motion with a microwave cavity*
- University of Colorado, JILA Seminar, May 2008: *Cooling and measuring nanomechanical motion with a microwave cavity*
- California Institute of Technology, Condensed Matter Seminar, April 2008: *Measuring nanomechanical motion with a microwave cavity interferometer*
- University of Chicago, James Franck Institute Seminar, February 2008: *Measuring nanomechanical motion with a microwave cavity interferometer*
- NIST Ion Storage Group Seminar, August 2007: *Sensing nanomechanical motion with a transmission-line microwave cavity*
- University of Chicago, James Franck Institute Seminar, February 2007: *Studying the BCS-BEC crossover with a Fermi gas of atoms*
- Yale University, Condensed Matter Physics Seminar, December 2006: *Studying the BCS-BEC crossover with a Fermi gas of atoms*
- Lawrence University, Symposium, May 2006: *From tiny Cooper pairs to giant Bose-condensed molecules: Realization of BCS-BEC crossover physics with an atomic Fermi gas*
- University of Pisa, Italy, Atomic Physics Seminar, November 2005: *Studying the BCS-BEC crossover with a Fermi gas of ^{40}K atoms*
- University of California, Berkeley, Atomic Physics Seminar, September 2005: *Studying the BCS-BEC crossover with a Fermi gas of atoms*
- California Institute of Technology, Quantum Optics Seminar, April 2005: *Studying condensed matter physics with an ultracold gas system: the BCS-BEC crossover with ^{40}K atoms*
- Colorado State University, Fort Collins, Colorado, Physics Seminar, November 2004: *Condensation of fermionic atom pairs*

Seminars or outreach talks at University of Colorado:

- University of Colorado, Research Experience for Undergraduates Seminar, June 2016: *Interferometry in a Strong Light*
- CU Physics Department Colloquium, Oct 2015: *Interferometry in a Strong Light*
- JILA Colloquium, April 2013: *Controlling and measuring motion at quantum limits: From single atoms to macroscopic drums*
- University of Colorado NSF Research Experience for Undergraduates seminar, June 2012: *Cavity optomechanics with hybrid membrane resonators*
- University of Colorado, Optical, Electronic, and Quantum Systems seminar, November 2011: *Cavity optomechanics with hybrid membrane resonators*
- University of Colorado, BEC group Seminar, November 2010: *From cavity electromechanics to cavity optomechanics*
- University of Colorado, Saturday Physics Series for High School Students, October 2010: *Strings and drums: Microresonators go quantum*
- University of Colorado, Research Experience for Undergraduates Seminar, July 2010: *Cavity quantum optomechanics*