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PROFESSIONAL PREPARATION

University of Chicago	Physics	Kavli Institute Postdoctoral Fellow, 2004-8
Harvard University	Physics	Ph.D., 2005
Stanford University	Physics	B.S. with Honors, 1995

APPOINTMENTS

- 2021 - Professor, Department of Physics and Astronomy, Northwestern University
- 2015 - 21 Associate Professor, Department of Physics and Astronomy, Northwestern University
- 2008 - 15 Assistant Professor, Department of Physics and Astronomy, Northwestern University

AWARDS AND HONORS

2020	Fellow, American Physical Society
2010	Sloan Research Fellow, Alfred P. Sloan Foundation
2009	Young Investigator award (YIP), Air Force Office of Scientific Research
2009	Searle Fellow, Northwestern University
2009	Packard Fellow, David and Lucile Packard Foundation
2009	CAREER Award, National Science Foundation
2008	Kavli Fellow, National Academy of Sciences
2006	Arthur H. Compton Lecturer, Enrico Fermi Institute, University of Chicago
2006	Outstanding Thesis Award, Division of Atomic, Molecular Optical Physics, APS
2004	Kavli Institute Fellowship, University of Chicago

PUBLICATIONS

1. "[Precisely Spun Super Rotors](#)," I.O. Antonov, P.R. Stollenwerk, S. Venkataramanababu, A.P. de Lima Batista, A.G.S. de Oliveira-Filho, B.C. Odom. *Nature Commun.* 12, 2201 (2021)
2. "[Protocol for Optically Pumping AlH⁺ to a Pure Quantum State](#)," P. Huang, S. Kain, A.G.S. de Oliveira-Filho, B.C. Odom. *Phys. Chem. Chem. Phys.* 22, 24423 (2020)
3. "[Cooling of a Zero-Nuclear-Spin Molecular Ion to a Selected Rotational State](#)," P.R. Stollenwerk, I.O. Antonov, S. Venkataramanababu, Y.-W. Lin, and B.C. Odom. *Phys. Rev. Lett.* 125, 113201 (2020)
4. "[IP determination and 1+1 REMPI spectrum of SiO at 210-220 nm with implications for SiO⁺ ion trap loading](#)," P.R. Stollenwerk, I.O. Antonov, and B.C. Odom. *J. Mol. Spectrosc.* 335, 40 (2019)
5. "[Prospects for Polar Molecular Ion Optical Probe of Varying Proton-Electron Mass Ratio](#)," M.G. Kokish, P.R. Stollenwerk, M. Kajita, and B.C. Odom. *Phys. Rev. A* 98, 052513 (2018)
6. "[Optical Pumping of TeH⁺: Implications for the Search for Varying m_p/m_e](#)," P.R. Stollenwerk, M.G. Kokish, A.G.S. de Oliveira-Filho, F.R. Ornellas, and B.C. Odom. *Atoms* 6, 53 (2018)
7. "[Enabling Lasing Action in Hybrid Atomic–Nanophotonic Integrated Structures](#)," H. Alaeian, B.C. Odom, J. Bravo-Abad, *Ann. Phys. (Berlin)* 530, 1800203 (2018)

8. "Electronic spectroscopy of a cold SiO⁺ sample: Implications for optical pumping," P.R. Stollenwerk, B.C. Odom, D. L. Kokkin, and T. Steimle. *J. Mol. Spectrosc.* 332, 26 (2017)
9. "Noise reduction of a Libbrecht--Hall style current driver," C.M. Seck, P.J. Martin, E.C. Cook, B.C. Odom, and D.A. Steck. *Rev. Sci. Inst.* 87, 064703 (2016)
10. "Raman sideband cooling of a ¹³⁸Ba⁺ ion using a Zeeman interval," C.M. Seck, M.G. Kokish, M.R. Dietrich, and B.C. Odom. *Phys. Rev. A* 93, 053415 (2016)
11. "Trapped ion chain thermometry and mass spectrometry through imaging," V. Rajagopal, J. P. Marler, M.G. Kokish, and B. C. Odom. *Eur. J. Mass Spectrom.* 22, 1 (2016)
12. "Simple and Compact Nozzle Design for Laser Vaporization Sources," M.G. Kokish, M.R. Dietrich, and B. C. Odom. *J. Phys. B: At. Mol. Opt. Phys.* 49, 035301 (2016)
13. "Doppler Amplification of Motion of a Trapped Three-Level Ion," X. Chen, Y.-W. Lin, and B.C. Odom, *New J. Phys.* 17, 043037 (2015)
14. "Note: High Density Pulsed Molecular Beam for Cold Ion Chemistry," M.G. Kokish, V. Rajagopal, J.P. Marler, and B.C. Odom, *Rev. Sci. Instrum.* 85, 08611 (2014)
15. "Broadband Optical Cooling of Molecular Rotors from Room Temperature to the Ground State," C.-Y. Lien, C.M. Seck, Y.-W. Lin, J.H.V. Nguyen, D.A. Tabor, B.C. Odom, *Nat. Commun.* 5, 4783 (2014)
16. "Rotational State Analysis of AlH⁺ by Two-Photon Dissociation," C.M. Seck, E.G. Hohenstein, C.-Y. Lien, P.R. Stollenwerk, B.C. Odom, *J. Mol. Spectrosc.* 300, 108 (2014)
17. "Resonant Few-Photon Excitation of a Single-Ion Oscillator," Y.-W. Lin, S. Williams, and B.C. Odom. *Phys. Rev. A* 87, 011402(R) (2013)
18. "Suitability of linear quadrupole ion traps for large Coulomb crystals," D. Tabor, V. Rajagopal, Y.-W. Lin, and B. Odom. *Appl. Phys. B.* 107, 1097 (2012)
19. "Optical pulse-shaping for internal cooling of molecules," C.-Y. Lien, S. Williams, and B. Odom. *Phys. Chem. Chem. Phys.*, 13, 18825 (2011)
20. "Challenges of laser-cooling molecular ions," J.H.V. Nguyen, C.R. Viteri, E.G. Hohenstein, C.D. Sherrill, K.R. Brown, and B. Odom. *New J. Phys.* 13, 063023 (2011)
21. "Prospects for Doppler cooling of three-electronic-level molecules," J.H.V. Nguyen, and B. Odom. *Phys. Rev. A* 83, 053404 (2011)
22. "Spin-Dependent WIMP Limits from a Bubble Chamber," E. Behnke, J.I. Collar, P.S. Cooper, K. Crum, M. Crisler, M. Hu, I. Levine, D. Nakazawa, H. Nguyen, B. Odom, E. Ramberg, J. Rasmussen, N. Riley, A. Sonnenschein, M. Szydagis, and R. Tschirhart. *Science* 319, 933 (2008)
23. "Identification of Weakly Interacting Massive Particles Through a Combined Measurement of Axial and Scalar Couplings," G. Bertone, D.G. Cerdeno, J.I. Collar, and B. Odom. *Phys. Rev. Lett.* 99, 151301 (2007)
24. "Development of Bubble Chambers With Enhanced Stability and Sensitivity to Low-Energy Nuclear Recoils," W.J. Bolte, J.I. Collar, M. Crisler, J. Hall, D. Holmgren, D. Nakazawa, B. Odom, K. O'Sullivan, R. Plunkett, E. Ramberg, A. Raskin, A. Sonnenschein, and J.D. Vieira. *Nucl. Instrum. Meth. A* 577, 569 (2007)
25. "A Bubble Chamber for Dark Matter Detection (the COUPP Project Status)," W.J. Bolte, J.I. Collar, M. Crisler, J. Hall, J. Krider, K. Crum, D. Holmgren, C.M. Lei, D. Nakazawa, H. Nguyen,

- B. Odom, K. O'Sullivan, R. Plunkett, E. Ramberg, A. Raskin, J. Rasmussen, R. Schmit, A. Sonnenschein, M. Szydagis, and J.D. Vieira. *Journal of Physics: Conference Series* 39 126 (2006)
26. "[COUPP, A Heavy-Liquid Bubble Chamber for WIMP Detection](#)," J. Bolte, J.I. Collar, M. Crisler, D. Holmgren, D. Nakazawa, B. Odom, K. O'Sullivan, R. Plunkett, E. Ramberg, A. Raskin, A. Sonnenschein, J.D. Vieira. *Proceedings from IDM2004*, Edinburgh, Scotland (2006)
27. "[New Measurement of the Electron Magnetic Moment Using a One-Electron Quantum Cyclotron](#)" B. Odom, D. Hanneke, B. D'Urso, and G. Gabrielse. *Phys. Rev. Lett.* 97, 030801 (2006)
28. "[New Determination of the Fine Structure Constant from the Electron g Value and QED](#)," G. Gabrielse, D. Hanneke, T. Kinoshita, M. Nio, and B. Odom. *Phys. Rev. Lett.* 97 030802 (2006)
29. "[Single-Particle Self-excited Oscillator](#)," B. D'Urso, R. Van Handel, B. Odom, and G. Gabrielse. *Phys. Rev. Lett.* 94, 113002 (2005)
30. "[Feedback Cooling of a One-Electron Oscillator](#)," B. D'Urso, B. Odom, and G. Gabrielse. *Phys. Rev. Lett.* 90, 043001 (2003)
31. "[One-Electron Cyclotron \(and Implications for Cold Antihydrogen\)](#)," G. Gabrielse, S. Peil, B. Odom, and B. D'Urso. In *Atomic Physics 17*, Vol. 551, edited by E. Arimondo, P. DeNatale, and M. Inguscio. American Institute of Physics, Melville, New York, pp. 108-120 (2001)
32. "[Spectroscopy of Buffer-Gas Cooled Vanadium Monoxide in a Magnetic Trapping Field](#)," J.D. Weinstein, R. deCarvalho, K. Amar, A. Boca, B.C. Odom, B. Friedrich, J.M. Doyle. *J. Chem. Phys.* 109, 2656 (1998)
33. "[Quantum Interference in Electron Collision](#)," R. Liu, B. Odom, Y. Yamamoto, and S. Tarucha. *Nature* 391, 6664 (1998)

INVITED PRESENTATIONS

2021	Colloquium, Northern Illinois University, Dekalb, IL
2020	Northwestern University, Colloquium, Evanston, IL
2019	Many-body Physics with Cold Ion, ITAMP, Cambridge, MA
2019	North American Conference on Trapped Ions, University of Maryland, MD
2019	Program Review, AFOSR, Washington, D.C.
2019	Argonne National Laboratory, Colloquium, Lemont, IL
2018	European Conference on Trapped Ions, Rehovot, Israel
2018	Midwest Cold Atoms Workshop, Champaign, IL
2017	BSM in Direct, Indirect and Tabletop Experiments, Rehovot, Israel
2017	Midwest Cold Atoms Conference, Ann Arbor, MI
2017	Cold Molecular Ions Workshop, Les Houches, France
2017	Georgia State University, Colloquium, Atlanta, GA
2017	University of Michigan, AMO Seminar, Ann Arbor, MI
2016	American Chemical Society conference, Philadelphia, PA
2016	Michigan State University, Condensed Matter Seminar, East Lansing, MI
2015	Purdue University, AMO Seminar, West Lafayette, IN
2015	12 th US-Japan Seminar on Many Body Quantum Systems, Madison, WI
2015	Fermilab, Colloquium, Batavia, IL
2015	Gordon Research Conference, Newport, RI
2015	APS March Meeting, San Antonio, TX

- 2014 Midwest Cold Atoms Conference, Argonne National Lab, Argonne, IL
2014 Center for Ultracold Atoms at MIT/Harvard, Seminar, Cambridge, MA
2014 DAMOP conference, Madison, WI
2014 UC Berkeley, AMO Seminar, Berkeley, CA
2014 Indiana University, Colloquium, Bloomington, IN
2014 Argonne National Laboratory, AMO Seminar, Argonne, IL
2013 Midwest Cold Atoms Workshop, Purdue, IN
2013 ITAMP Ion Trapping Workshop, Cambridge, MA
2013 IOTA Molecular Ions Workshop, Arosa, Switzerland
2013 Stanford University, Applied Physics Seminar, Stanford, CA
2013 Georgia Tech, AMO Seminar, Atlanta, GA
2013 Rice University, AMO Seminar, Houston, TX
2013 Duke University, EECS Seminar, Durham, NC
2013 University of Michigan, AMO Seminar, Ann Arbor, MI
2012 University of Wisconsin, AMO Seminar, Madison, WI
2012 European Conference on Trapped Ions (ECTI), Obergurgl, Austria
2012 Georgia Tech, Molecular Ion Workshop, Atlanta, GA
2012 Les Houches School, "Physics with Trapped Charged Particles," Les Houches, France
2012 AFOSR Program Review, Washington, D.C.
2011 Fermilab, Center for Particle Astrophysics Seminar, Batavia, IL
2011 University of Colorado Boulder, Special AMO Seminar, Boulder, CO
2011 Northwestern University, Special AMO Seminar, Evanston, IL
2011 Fermilab, Laboratory Tests of Dark Energy Workshop, Batavia, IL
2011 Midwest Cold Atoms Conference, Evanston, IL
2011 Northwestern University, Heilborn Lecture, Evanston, IL
2011 Argonne National Laboratory, High Energy Seminar, Argonne, IL
2010 NICT, AMO Seminar, Tokyo, Japan
2010 University of Illinois at Urbana-Champaign, AMO Seminar, Urbana, IL
2010 Midwest Cold Atoms Workshop, Ann Arbor, MI
2010 University of Washington, Colloquium, Seattle, WA
2010 Argonne National Laboratory, Heavy Ion Seminar, Argonne, IL
2010 Future Frontiers in Fundamental Physics Conference, Abu Dhabi
2009 Midwest Cold Atoms Conference, Chicago, IL
2008 National Academy of Sciences, Japanese-American Frontiers of Science Symposium.
Irvine, CA
2008 Ulm University, AMO Seminar, Ulm, Germany
2008 University of Provence, AMO Seminar, Marseille, France
2008 University of California, Santa Barbara, HEP Seminar, Santa Barbara, CA
2008 University of California, Berkeley, AMO Seminar, Berkeley, CA
2008 Massachusetts Institute of Technology, Nuclear and Particle Colloquium, Boston, MA
2008 University of Michigan, CM/AMO Seminar, Ann Arbor, MI
2008 New York University, Physics Colloquium, New York, NY

2008	New York University, CCPP Seminar, New York, NY
2008	University of Chicago, James Franck Institute Seminar, Chicago, IL
2007	Stanford Linear Accelerator Center, Experimental Seminar, Menlo Park, CA
2006	Argonne National Laboratory, Medium Energy Physics Seminar, Argonne, IL
2006	Yale University, Weak Interactions Seminar, New Haven, CT
2006	University of Maryland, Combined Nuclear/HEP Seminar, College Park, MD
2006	Northwestern University, Physics Colloquium, Evanston, IL
2006	Division of Nuclear Physics, Dark Matter Mini-Symposium, Nashville, TN
2006	Arthur H. Compton Lecturer, Enrico Fermi Institute, University of Chicago, IL http://kicp.uchicago.edu/~odom/compton
2006	6 th International Workshop on The Identification of Dark Matter, Rhodes, Greece
2006	APS Division of Atomic Molecular Physics, Thesis Prize presentation, Knoxville, TN
2005	SNOLAB 2005 Workshop, Lively, Canada
2005	Northwestern University, HEP seminar, Evanston, IL
2004	University of Chicago, Kavli Institute seminar, Chicago, IL
2004	Argonne National Laboratory, AMO seminar, Argonne, IL
2004	Third Meeting on CPT and Lorentz Symmetry, Bloomington, IN
2003	University of Chicago, HEP seminar, Chicago, IL
2002	Fermilab, Special seminar, Batavia, IL
1999	Smithsonian Institute for Astrophysics, AMO seminar, Cambridge, MA

PROFESSIONAL ACTIVITY AND SERVICE

- Member; American Physical Society
- Grant Reviewer; National Science Foundation, Air Force Office of Scientific Research, Army Office of Research, Department of Energy, Research Corporation
- Manuscript Reviewer; Journal of Chemical Physics, Nano Letters, Nature, New Journal of Physics, Physical Review A, Physical Review Letters, Reviews of Scientific Instruments, Science
- Member; DAMOP Program Subcommittee on Precision Measurements, 2016-17
- Session Chair; DAMOP 2016, Providence, RI
- Sorter; DAMOP Sorter's Meeting, 2016
- Chair; DAMOP Program Subcommittee on Cold Gases, 2015-16
- Member at Large; APS Topical Group on Precision Measurement & Fundamental Constants, 2014-16
- Session Chair; DAMOP 2015, Columbus, OH
- Sorter; DAMOP Sorter's Meeting, 2015
- Panelist; National Science Foundation AMO grant proposal review, 2015
- Member; DAMOP Program Subcommittee on Quantum Information Processing, 2014-15
- Session Chair; International Conference on Atomic Physics (ICAP), 2014
- Executive Committee Member-At-Large (elected); Topical Group on Precision Measurements and Fundamental Constants, APS, 2014-2017
- Program Committee; APS Division of Atomic, Molecular, Optical and Physics, 2014-2017
- Session Chair; Midwest Cold Atoms Workshop, Purdue University, 2013
- Co-Organizer; Molecular Ions Workshop, Georgia Tech, 2012

- Session Chair; Midwest Cold Atoms Workshop, University of Illinois, 2012
- Conference Chair; Midwest Cold Atoms Workshop, Northwestern University, 2011
- Session Chair; Midwest Cold Atoms Workshop, University of Michigan, 2010
- Panelist; National Science Foundation AMO grant proposal review, 2009

DEPARTMENTAL AND UNIVERSITY SERVICE

- 2017-19 Member; Center for Fundamental Physics Faculty Search Committee
- 2017-18 Co-chair; Department Tenure Committee
- 2016-20 Inaugural Faculty Director; Northwestern University Research Shops
- 2016- Faculty Member; Center for Fundamental Physics, Northwestern University
- 2015-20 Chair; Graduate Curriculum Committee, Physics & Astronomy Department
- 2015-20 Director of Graduate Studies; Physics & Astronomy Department
- 2014-18 Member; Thesis Committee, Wenchao Xu, UIUC
- 2016-17 Member; Center for Fundamental Physics Faculty Search Committee
- 2015-16 Member; Junior Faculty Search Committee, IIN/MSE Department
- 2015-16 Member; Thesis Committee, Dan Baxter
- 2014 Member; Vision Committee, Physics & Astronomy Department
- 2014-15 Member; Heilborn Lecture Committee, Physics & Astronomy Department
- 2014-15 Member; Graduate Curriculum Committee, Physics & Astronomy Department
- 2013-14 Member; Alumni Relations Committee
- 2013-14 Member; Heilborn Lecture Committee
- 2013-14 Member; Thesis Committee, Laszlo Frazer
- 2012-13 Member; Heilborn Lecture Committee
- 2012-16 Organizer; Atomic, Molecular and Optical Physics Seminar Series
- 2012-16 Member; Thesis Committee, Resham Sarkar
- 2011-15 Member; Thesis Committee, May Kim
- 2011-15 Member; Thesis Committee, Joseph Sklenar
- 2011-12 Chair; Admissions Committee
- 2011-12 Member; Goldwater Fellows (University) Committee
- 2010-11 Chair; Admissions Committee
- 2010-11 Member; Graduate Curriculum Committee
- 2010-11 Member; Faculty Search Committee, Optical Condensed Matter
- 2009-10 Faculty Fellow; Public Affairs Residential College
- 2009-10 Member; Admissions Committee
- 2009-10 Member; Faculty Search Committee, Theoretical Quantum Manipulation
- 2009-10 Editor; Departmental Newsletter
- 2009-10 Member; Heilborn Lecture Committee
- 2009-10 Member; Thesis Committee, Monica Patel
- 2009 Judge; Undergraduate Research Symposium
- 2009- Initiator; Departmental champagne toast for faculty awards, a continuing tradition
- 2008-9 Producer; Departmental Newsletter
- 2008-9 Member; Admissions Committee
- 2008-9 Member; Heilborn Lecture Committee

TEACHING

- 2020 Undergraduate Optics Lab, 357
2019 Graduate Quantum Mechanics 1st quarter, 412-1
2018 Graduate Quantum Mechanics 1st quarter, 412-1
2017 Graduate Quantum Mechanics 1st quarter, 412-1
2016 Graduate Quantum Mechanics 1st quarter, 412-1
2016 Light and Modern Physics, 125-3, Freshman Integrated Science Program series
2015 Atomic and Molecular Trapping and Cooling, 460-0, Graduate
2015 Graduate Quantum Mechanics 2nd quarter, 412-2
2014 Space, Time, and Matter, 110-6, Freshman Seminar
2014 Graduate Quantum Mechanics 3rd quarter, 412-3
2013 Space, Time, and Matter, 110-6, Freshman Seminar
2013 Light and Modern Physics, 125-3, Freshman Integrated Science Program series
2012 The Science of Time, 110-6, Freshman Seminar
2012 Light and Modern Physics, 125-3, Freshman Integrated Science Program series
2011 Light and Modern Physics, 125-3, Freshman Integrated Science Program series
2011 Atom Trapping and Applications, 460-0, Graduate
2010 Light and Modern Physics, 125-3, Freshman Integrated Science Program series
2010 Atom Trapping and Applications, 460-0, Graduate
2009 Atom Trapping and Applications, 450-0, Graduate

OUTREACH

- 2017 Volunteer Speaker: High Jump's Career Show & Tell, for Chicago area middle schools s
2016 Host: School of the Art Institute class tour of laser laboratory
2014 Undergraduate quantum mechanics guest lecture, Northwestern University
2014 Society of Physics Students evening seminar, Northwestern University
2013 DAMOP outreach lecture, Quebec City
2012 Production of [Doppler cooling outreach video](#) by undergrad Lauren Ruth
2010 Society of Physics Students evening seminar, Northwestern University
2009 Society of Physics Students evening seminar, Northwestern University

RESEARCH PERSONNEL SUPERVISED

- 2019- Nia Burrell, PhD Student
2019-20 Carissa Skye, Masters Student
Immediate placement: Physics PhD program at University of Illinois Urbana-Champaign
2019-20 Jiafeng Cui, Postdoc
Immediate placement: Postdoc with Phil Richerme, Indiana University Bloomington
2018-19 Schuyler Kain, Postdoc
Immediate placement: Postdoc with Jerry Gabrielse, Northwestern University
2018- Sruthi Venkataramanababu, PhD Student
2016- Ivan Antonov, Postdoc
2016- James Dragan, PhD Student

2016-18	Jacob Johansen, Postdoc Immediate placement: Research Scientist at Honeywell
2015-17	Vincent Carrat, Postdoc Immediate placement: Laser Engineer at Lumibird
2015-17	Hadiseh Alaeian, Postdoc Immediate placement: Humboldt Fellowship with Telman Pfau, MPI, Stuttgart Current placement: Assistant Professor of ECE / Physics, Purdue University
2015-16	Pinrui Shen, Masters Student Immediate placement: Physics PhD program at UBC
2013-16	Zeke Tung, Postdoc Immediate placement: Assistant Professor National Tsing Hua University, Taiwan
2013-15	Matthew Dietrich, Research Assistant Professor Immediate placement: Tenure track Assistant Physicist position, Argonne National Lab
2013-18	Mark Kokish, PhD Student (co-supervised with Tamar Seideman, Chemistry) Immediate placement (Honeywell)
2013-20	Patrick Stollenwerk, PhD Student Immediate placement: Postdoc with ATTA, Argonne National Lab
2010-16	Ming-Feng Tu, PhD Student Immediate placement: Transfer to Bostedt research group
2009-16	Chris Seck, PhD Student Immediate placement: Physicist at Georgia Tech Research Institute
2009-16	Yen-Wei Lin, PhD Student Immediate placement: Postdoc with Kang-Kuen Ni at Harvard University
2009-14	David Tabor, PhD Student Immediate placement: Novantas
2009-14	Chien-Yu Lien, PhD Student Immediate placement: Systems Engineer, Intel
2009-12	Joan Marler, Postdoc Immediate placement: Assistant Professor at Clemson University
2009-12	Jason Nguyen, Postdoc Immediate placement: Postdoc with Randy Hulet, Rice University
2008-14	Vaishnavi Rajagopal, PhD Student Immediate placement: Postdoc with Alessandra Ferzoco, Rowland Institute, Harvard

CURRENT COLLABORATORS

1. Gerald Gabrielse, Northwestern University
2. Andrew Geraci, Northwestern University
3. Timothy Kovachy, Northwestern University
4. Antonio G. S. de Oliveira-Filho, Universidade de São Paulo
5. Ana Paula de Lima Batista, Universidade de São Paulo