

Joel C. Corbo

CONTACT INFORMATION	<p>Center for STEM Learning University of Colorado Boulder 393 UCB Boulder, CO 80309-0393</p>	<p>Office: Duane C223 Phone: (718)757-8844 E-mail: joel.corbo@colorado.edu Web: www.joelcorbo.com</p>
PROFESSIONAL APPOINTMENTS	<p>2017 Senior Research Associate, Center for STEM Learning, CU Boulder</p> <p>2013 Research Associate, Center for STEM Learning, CU Boulder</p>	
EDUCATION	<p>2013 Ph.D., Physics, University of California, Berkeley Thesis Title: Quantum Monte Carlo Simulations of Trapped Cold Atoms Advisor: K. Birgitta Whaley</p> <p>2006 M.A., Physics, University of California, Berkeley</p> <p>2004 B.S., Physics, Massachusetts Institute of Technology</p>	
AWARDS AND FELLOWSHIPS	<p>2017 Notable Paper Award, 2016 Physics Education Research Conference Proceedings (awarded to 4 out of 98 peer-reviewed papers)</p> <p>2013 Student Service Award, UC Berkeley Physics Department</p> <p>2012 APS Award for Improving Undergraduate Physics Education (awarded to the Compass Project, which I co-founded)</p> <p>2007 Outstanding Graduate Student Instructor, UC Berkeley Physics Department</p> <p>2006 UC Berkeley's Everyday Heroes</p> <p>2004 Graduate Opportunity Program Fellowship, UC Berkeley</p>	
GRANTS	<p>2018 Expanding Access: Furthering a Network of Diversity-Focused Programs in the Physical Sciences. \$372,681, 2 years, PI. (NSF awards 1806516, 1806709, 1806668, 1806566, and 1806585).</p> <p>2017 What Do Physicists From Majority Groups Know and Believe about Race and Gender? \$299,209, 3 years, Former co-PI. (NSF award 1712436).</p> <p>2016 Departmental Action Teams: Sustaining Improvements in Undergraduate STEM Education Through Faculty Engagement. \$1,919,515, 4 years, PI. (NSF award 1626565).</p> <p>2015 The Access Network: Supporting Retention and Representation in Physics Through an Alliance of Campus-Based Diversity Programs. \$330,000, 3 years, PI. (NSF awards 1506129, 1506190, and 1506235).</p>	

- 2019** G. M. Quan, **J. C. Corbo**, N. D. Finkelstein, A. Pawlak, K. Falkenberg, C. Geanious, C. Ngai, C. Smith, S. Wise, M. E. Pilgrim, and D. L. Reinholz. Designing for institutional transformation: Six principles for department-level interventions. *Physical Review Physics Education Research* **15**, 010114.
doi:10.1103/PhysRevPhysEducRes.15.010141
- 2019** D. L. Reinholz, C. Ngai, G. M. Quan, M. E. Pilgrim, **J. C. Corbo**, and N. Finkelstein. Fostering sustainable improvements in science education: An analysis through four frames. *Science Education* **103** (5), 1125–1150.
doi:10.1002/sce.21526
- 2018** **J. C. Corbo**, G. M. Quan, K. Falkenberg, C. Geanious, C. Ngai, M. E. Pilgrim, D. L. Reinholz, and S. Wise. Externalizing the core principles of the Departmental Action Team (DAT) model, in *Physics Education Research Conference 2018* (Washington, DC, 2018).
doi:10.1119/perc.2018.pr.Corbo
- 2018** G. M. Quan, **J. C. Corbo**, C. Ngai, D. Reinholz, and M. E. Pilgrim. Research on university faculty member’s reasoning about how departments change, in *Physics Education Research Conference 2018* (Washington, DC, 2018).
doi:10.1119/perc.2018.pr.Quan
- 2018** A. Lau, M. H. Dancy, **J. C. Corbo**, C. Henderson, and A. Rundquist. An analysis of community formation in Faculty Online Learning Communities, in *Physics Education Research Conference 2017* (Cincinnati, OH, 2017).
doi:10.1119/perc.2017.pr.053
- 2018** M. H. Dancy, A. Lau, **J. C. Corbo**, C. Henderson, and A. Rundquist. Participants’ perceptions of the Faculty Online Learning Community (FOLC) experience, in *Physics Education Research Conference 2017* (Cincinnati, OH, 2017).
doi:10.1119/perc.2017.pr.020
- 2017** D. L. Reinholz, **J. C. Corbo**, M. H. Dancy, and N. Finkelstein. Departmental Action Teams: Supporting faculty learning through departmental change. *Learning Communities Journal* **9**, 1.
<http://celt.miamioh.edu/lcj/issue.php?v=9&n=1>
- 2017** **J. C. Corbo**, J. L. DuBois, and K. B. Whaley. Number-squeezed and fragmented states of strongly interacting bosons in a double well. *Physical Review A* **96**, 053627.
doi:10.1103/PhysRevA.96.053627
- 2016** **J. C. Corbo**, A. Rundquist, C. Henderson, and M. H. Dancy. Using asynchronous communication to support virtual faculty learning communities, in *Physics Education Research Conference 2016* (Sacramento, CA, 2016).
PERC 2016 **Notable Paper** (awarded to 4 out of 98 peer-reviewed papers)
doi:10.1119/perc.2016.pr.016
- 2016** K. Rainey, **J. C. Corbo**, D. L. Reinholz, and M. Betterton. Improving representation in physical sciences using a Departmental Action Team, in *Physics Education Research Conference 2016* (Sacramento, CA, 2016).
doi:10.1119/perc.2016.pr.061
- 2016** **J. C. Corbo**, D. L. Reinholz, M. H. Dancy, S. Deetz, and N. Finkelstein. Framework for transforming departmental culture to support educational innovation. *Physical Review Physics Education Research* **12**, 010113.
doi:10.1103/PhysRevPhysEducRes.12.010113

- 2015** A. Rundquist, **J. C. Corbo**, M. S. Martinuk, S. Chasteen, C. Henderson, and M. H. Dancy. Faculty Online Learning Communities to support physics teaching, in *Physics Education Research Conference 2015* (College Park, MD, 2015).
doi:10.1119/perc.2015.pr.065
- 2015** **J. C. Corbo**, D. L. Reinholz, M. H. Dancy, and N. Finkelstein. Departmental Action Teams: Empowering faculty to make sustainable change, in *Physics Education Research Conference 2015* (College Park, MD, 2015).
doi:10.1119/perc.2015.pr.018
- 2002** B. B. Back, *et al.* (PHOBOS Collaboration). Centrality dependence of the charged particle multiplicity near midrapidity in Au+Au collisions at $\sqrt{s_{NN}} = 130$ and 200 GeV, *Physical Review C*. **65**, 061901(R).
doi:10.1103/PhysRevC.65.061901
- 2001** B. B. Back, *et al.* (PHOBOS Collaboration). Energy dependence of particle multiplicities in central Au+Au collisions, *Physical Review Letters* **88**, 022302.
doi:10.1103/PhysRevLett.88.022302

Book Chapters and Non-refereed Articles

- 2019** D. L. Reinholz, **J. C. Corbo**, D. J. Bernstein, and N. Finkelstein. Evaluating Scholarly Teaching: A Model and Call for an Evidence-Based Approach. In J. Lester, C. Klein, A. Johri, and H. Rungwala (Eds.), *Learning Analytics in Higher Education: Current Innovations, Future Potential, and Practical Applications*. New York, NY: Routledge.
- 2019** D. L. Reinholz, M. E. Pilgrim, K. Falkenberg, C. Ngai, G. M. Quan, S. Wise, C. Geanious, **J. C. Corbo**, and N. Finkelstein. Departmental Action Teams: A five-year update on a model for sustainable change, in *RC20/20* (the 2018 Reinvention Collaborative Biennial National Conference digital volume).
<https://www.rc-2020.org/falkenberg>
- 2015** D. L. Reinholz, **J. C. Corbo**, M. H. Dancy, S. Deetz, and N. Finkelstein. Towards a model of systemic change in university STEM education, in *Transforming Institutions: Undergraduate STEM Education for the 21st Century*, edited by G. C. Weaver, W. D. Burgess, A. L. Childress, and L. Slakey (Purdue University Press, West Lafayette, IN, 2015).
- 2013** B. F. Albanna, **J. C. Corbo**, D. R. Dounas-Frazer, A. Little, A. M. Zaniwski. Building Classroom and Organizational Structure around Positive Cultural Values, *AIP Conf. Proc.* 1513, pp. 7-10.
doi:10.1063/1.4789638

Other Publications

- 2018** **J. C. Corbo**. “Focusing on Principles and Commitments at FFER: Puget Sound 2018,” APS Forum On Education Newsletter, Fall 2018.
- 2013** N. Roth, P. Gandhi, G. Lee, and **J. C. Corbo**. “The Compass Project: Charting a New Course in Physics Education,” *Physics Today Online*, Points of View section, Jan 8.
- 2008** **J. C. Corbo**. “On Graduate School and Teaching,” guest post, *Discover Magazine’s Cosmic Variance Blog*, Jun 12.

Invited Talks

- 2019** “Departmental Action Teams as a Mechanism for Improving Equity and Inclusion,” Physics Department Equity and Inclusion Committee Lecture, Stanford University, May 6.
- 2019** “Improving STEM Education through Departmental Action Teams,” Office of STEM Education Symposium Series, Rutgers University, April 3.
- 2018** “Envisioning a Better Academia: Principles and Commitments,” Foundations and Frontiers of Physics Education Research: Puget Sound Conference, Diablo, WA, Jun 17.
- 2018** “Improving STEM Education through Departmental Action Teams,” Physics Education Research Lab (PERL) Seminar, Michigan State University, Apr 18.
- 2018** “Improving STEM Education through Departmental Action Teams,” Texas Institute for Discovery Education in Science (TIDES), UT Austin, Mar 23.
- 2018** “Improving STEM Education through Departmental Action Teams,” ACS Annual Meeting, New Orleans, LA, Mar 19.
- 2017** “Equity in Physics Education: Organizing for Change as a Graduate Student,” AAPT Winter Meeting, Atlanta, GA, Feb 21.
- 2016** “Overview of Education Research and Teacher Preparation at the University of Colorado,” Engineering Education Research Group, Oslo and Akershus University College, Oct 11.
- 2015** “Institutional Change: Planning an Effort and Making a Difference,” APS Four Corners Section meeting, Tempe, AZ, Oct 16.
- 2015** “Department Action Teams: A New Model for Empowering Faculty to Make Sustainable Change,” Engineering Education Research Group, University of Maryland College Park, Oct 1.
- 2014** “Professionalizing Educational Practice through Measurement, Assessment, and Culture,” AAU Undergraduate STEM Education Initiative Project Site Workshop, Washington, DC, May 13.
- 2013** “Building Modeling Skills and Developing Science Identity in Physics Freshmen,” Sheridan Center for Teaching and Learning, Brown University, Sept 16.
- 2013** “BEC’s & QMC: Simulating Systems of Ultracold Atomic Gases,” Berkeley Compass Project Lecture Series, UC Berkeley, May 7.
- 2012** “Progress through Predicament: How Collaborating on Tough Problems Cultivates a Successful, Supportive Community,” APS April Meeting, Atlanta, April 1.
- 2010** “The Compass Project: An Interactive Workshop,” Physics Undergraduate Reform Network Alliance (PURNA) Workshop, UC Berkeley, May 6.
- 2010** “Compass at Berkeley: Underrepresented Student Retention,” Physics Teacher Education Coalition (PTEC) Conference, Washington D.C., Feb 13.

Invited Panels

- 2017** “Supporting Faculty Members’ Efforts to Improve Undergraduate STEM Education,” AAU Undergraduate STEM Education Initiative Network Conference, Washington, DC, Oct 2.

2016 “Learning to Listen: Graduate Student Leaders on Graduate Student Climate Change,” Diversity and Inclusion Summit, Boulder, CO, Nov 9.

Invited Posters

2018 “The Access Network: Bringing Together Student Leaders to Support Equity Programs,” Physics Education Research Conference (PERC), Washington, DC, Aug 2.

2012 “Building Classroom and Organizational Structure around Positive Cultural Values,” Physics Education Research Conference (PERC), Philadelphia, PA, Aug 2.

Sessions Organized

2017 “Bridging Research and Practice in the Access Network,” Physics Education Research Conference (PERC), Cincinnati, OH, July 27.

Contributed Talks

2018 “Externalizing the Core Principles of the Departmental Action Team (DAT) model,” AAPT Summer Meeting, Washington, DC, July 30.

2017 “Access Assemble! Bringing Together Student Leaders to Support Equity Programs,” AAPT Summer Meeting, Cincinnati, OH, July 24.

2017 “Effective Facilitation of Teams to Enact Departmental Change,” AAPT Winter Meeting, Atlanta, GA, February 19.

2016 “Using Asynchronous Communication To Support Virtual Faculty Learning Communities,” AAPT Summer Meeting, Sacramento, CA, July 18.

2015 “Departmental Action Teams: Empowering Faculty to Make Sustainable Change,” AAPT Summer Meeting, College Park, MD, July 29.

2014 “Towards a Model of Systemic Change in University STEM Education,” Discipline-Based Educational Research Seminar Series, CU Boulder, November 19.

2014 “Fostering Positive Cultural Changes in STEM Departments: Two Models of Institutional Change,” AAPT Summer Meeting, Minneapolis, July 30.

2013 “Building Modeling Skills and Developing Science Identity in Physics Freshmen,” AAPT Summer Meeting, Portland, OR, July 17.

2012 “Condensate Properties for Strongly Repulsive Bosons in a Double Well,” APS March Meeting, Boston, March 1.

Contributed Posters

2018 “Externalizing the Core Principles of the Departmental Action Team (DAT) model,” Physics Education Research Conference, Washington, DC, Aug 2.

2017 “Departmental Action Teams as a Mechanism for Promoting Departmental Change,” Physics Education Research Conference, Cincinnati, OH, July 27.

2017 “Departmental Action Teams as a Mechanism for Promoting Departmental Change,” Transforming Research in Undergraduate STEM Education Conference, St. Paul, MN, July 6.

2016 “Using Asynchronous Communication to Support Virtual Faculty Learning Communities,” Physics Education Research Conference, Sacramento, CA, July 21.

- 2016** “Improving Retention in the Physical Sciences with a Departmental Action Team,” Physics Education Research Conference, Sacramento, CA, July 19.
- 2015** “Departmental Action Teams: Empowering Faculty to Make Sustainable Change,” AAU STEM Network Conference, St. Louis, MO, Oct 13.
- 2015** “Departmental Action Teams: Empowering Faculty to Make Sustainable Change,” CU Boulder STEM Education Symposium, Boulder, CO, Sept 21.
- 2015** “Departmental Action Teams: Empowering Faculty to Make Sustainable Change,” Physics Education Research Conference, College Park, MD, July 30.
- 2015** “Faculty Online Learning Communities to Support Physics Teaching,” Physics Education Research Conference, College Park, MD, July 30.
- 2014** “Two Models of Institutional Change in STEM Departments,” Physics Education Research Conference, Minneapolis, July 31.
- 2014** “Systemic Efforts for Promoting Cultural Change to Improve STEM Education,” AAU Undergraduate STEM Education Initiative Conference, Washington, D.C., July 21.
- 2013** “Building Modeling Skills and Developing Science Identity in Physics Freshmen,” Physics Education Research Conference, Portland, July 17.

TEACHING
EXPERIENCE

Course Instructor, UC Berkeley

- 2012** Introduction to Modeling, Fall semester
Co-designed and taught a course in which students learned about the role of modeling in science and developed physical models in the context of the ray model of light and their own final project of choice. Students also performed weekly self-evaluations to improve their abilities as students and researchers by honing skills such as persistence, scepticism, and collaboration.
- 2011** Introduction to Modeling, Fall semester
See above.
- 2007** Conceptual Physics, Compass Project Summer Program, Aug 6–17
Co-designed and taught a course that focused on building models, conducting experiments, and analyzing real-world data to understand earthquakes and the Earth’s interior.

Teaching Workshop Leader, UC Berkeley

- 2012** Compass Teacher Training Workshop, Summer
Ran a series of weekly workshops to introduce instructors to the Compass Project’s teaching philosophy and methods and to help them design the curricula for the courses they were teaching.
- 2011** Facilitating Discussions in STEM, Aug 9
As part of the Teaching Conference for Graduate Student Instructors, ran a workshop to familiarize first-time GSIs with the importance of active learning and with techniques that they could implement in their classrooms.

Guest Lecturer, CU Boulder

2015 Teaching and Learning Physics, Nov 5
“Promoting Equity in Physics through Student-Driven Programs”

Teaching Assistant, UC Berkeley (with student evaluation rating, out of 7)

- S 12** Honors Introductory Modern Physics (6.5)
- F 08** Honors Introductory Mechanics (6.9)
- S 08** Honors Introductory Modern Physics (6.7)
- F 07** Honors Introductory Mechanics (6.8)
- S 07** Quantum Mechanics I (6.3)
- F 06** Honors Introductory Mechanics (6.6)
- S 06** Honors Introductory Thermodynamics and E & M (5.9)
- F 05** Honors Introductory Modern Physics (6.2)
- S 05** Introductory Thermodynamics and E & M (5.9)
- F 04** Algebra-based Mechanics and Thermodynamics (6.6)

UNIVERSITY &
PROFESSIONAL
SERVICE

Physics Education Research Leadership Organizing Council, AAPT, 2016–2019
Elected council member, chair of the Physics Education Research Conference (PERC) Organizing Committee.

The Access Network, 2014–present

Co-founder and co-organizer. Access is a national network of student-driven equity programs in the physical sciences inspired by the Berkeley Compass Project.

The Berkeley Compass Project, 2007–2013

Co-founder, co-coordinator, teacher, and mentor. Compass is a student-run program that supports diversity and community in the physical sciences. Responsibilities included: coordinating summer program in 2008 and 2009, hiring summer program teachers, reading applications for incoming students, organizing leadership retreats, fundraising, and formalizing Compass’s consensus-based decision making model and leadership structure.

Graduate Recruitment Committee, UC Berkeley physics department, 2005–2007

Assisted in the coordination of the physics department’s open house for prospective graduate students.

RELATED
WORK
EXPERIENCE

Consultant, Florida International University, April 2012.

Advised the FIU College of Engineering and Computing on the development of a summer program for incoming engineering freshmen.

COMMUNITY
OUTREACH

Milken Scholars Program, 2000–present

Inducted in 2000; admissions committee member in 2007, 2011, and 2016; Alumni Association Bay Area co-chair 2009–2011; mentor and speaker at annual Summits for new and current scholars. The Milken Scholars Program “honors exceptional young men and women based on their academic performance, community service, leadership activities and triumphs over obstacles” with a scholarship and professional development opportunities.

PROFESSIONAL
DEVELOPMENT

UC Berkeley

- 2011** Designing Courses and Course Syllabi to Enhance Student Motivation
- 2011** Summer Institute for Preparing Future Faculty
- 2010** Mentoring in Higher Education
- 2004** Professional Preparation: Supervised Teaching of Physics
- 2004** Teaching Conference for First-Time GSIs

MEMBERSHIPS

- American Physical Society
- American Association of Physics Teachers