

# Joel C. Corbo

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CONTACT INFORMATION	<p>Center for STEM Learning University of Colorado Boulder 393 UCB Boulder, CO 80309-0393</p>	<p>Office: Duane F1019 Phone: (718)757-8844 E-mail: joel.corbo@colorado.edu Web: <a href="http://www.joelcorbo.com">www.joelcorbo.com</a></p>
EDUCATION	<p><b>2013</b> Ph.D., Physics, University of California, Berkeley Thesis Title: Quantum Monte Carlo Simulations of Trapped Cold Atoms Advisor: K. Birgitta Whaley</p> <p><b>2006</b> M.A., Physics, University of California, Berkeley</p> <p><b>2004</b> B.S., Physics, Massachusetts Institute of Technology</p>	
PROFESSIONAL APPOINTMENTS	<p><b>2017</b> <b>Senior Research Associate</b>, Center for STEM Learning, CU Boulder</p> <p><b>2013</b> <b>Research Associate</b>, Center for STEM Learning, CU Boulder</p>	
AWARDS AND FELLOWSHIPS	<p><b>2017</b> Notable Paper Award, 2016 Physics Education Research Conference Proceedings (awarded to 4 out of 98 peer-reviewed papers)</p> <p><b>2013</b> Student Service Award, UC Berkeley Physics Department</p> <p><b>2012</b> <a href="#">APS Award for Improving Undergraduate Physics Education</a> (awarded to the Compass Project, which I co-founded)</p> <p><b>2007</b> <a href="#">Outstanding Graduate Student Instructor</a>, UC Berkeley Physics Department</p> <p><b>2006</b> <a href="#">UC Berkeley's Everyday Heroes</a></p> <p><b>2004</b> Graduate Opportunity Program Fellowship, UC Berkeley</p>	
GRANTS	<p><b>2017</b> What Do Physicists From Majority Groups Know and Believe about Race and Gender? <b>\$299,209</b>, 3 years, co-PI. (NSF award 1712436).</p> <p><b>2016</b> Departmental Action Teams: Sustaining Improvements in Undergraduate STEM Education Through Faculty Engagement. <b>\$1,919,515</b>, 4 years, PI. (NSF award 1626565).</p> <p><b>2015</b> The Access Network: Supporting Retention and Representation in Physics Through an Alliance of Campus-Based Diversity Programs. <b>\$330,000</b>, 3 years, PI. (NSF awards 1506129, 1506190, and 1506235).</p>	
PUBLICATIONS	<p><b>Refereed Articles</b></p> <p>D. L. Reinholz, <b>J. C. Corbo</b>, M. H. Dancy, and N. Finkelstein. Departmental Action Teams: Supporting faculty learning through departmental change. (accepted by Learning Communities Journal)</p> <p>A. Lau, M. H. Dancy, <b>J. C. Corbo</b>, C. Henderson, and A. Rundquist. An analysis of community formation in Faculty Online Learning Communities. (accepted by the Physics Education Research Conference 2017 Proceedings)</p>	

M. H. Dancy, A. Lau, **J. C. Corbo**, C. Henderson, and A. Rundquist. Participants perceptions of the Faculty Online Learning Community (FOLC) experience. (accepted by the Physics Education Research Conference 2017 Proceedings)

- 2017** **J. C. Corbo**, J. L. DuBois, and K. B. Whaley. Number-squeezed and fragmented states of strongly interacting bosons in a double well. *Phys. Rev. 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. *Phys. Rev. Phys. Educ. Res.* **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
- 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).
- 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, *Phys. Rev. C*. **65**, 061901(R) (2002). doi:10.1103/PhysRevC.65.061901
- 2001** B. B. Back, *et al.* (PHOBOS Collaboration). Energy dependence of particle multiplicities in central Au+Au collisions, *Phys. Rev. Lett.* **88**, 022302 (2001). doi:10.1103/PhysRevLett.88.022302

#### Non-refereed Articles

- 2013** B. F. Albanna, **J. C. Corbo**, D. R. Dounas-Frazer, A. Little, A. M. Zaniewski. Building Classroom and Organizational Structure around Positive Cultural Values, *AIP Conf. Proc.* 1513, pp. 7-10. doi:10.1063/1.4789638

## Other Publications

- 2015** N. Finkelstein, D. L. Reinholz, **J. C. Corbo**, and D. J. Bernstein. Towards a Framework for Assessing and Promoting Teaching Quality at CU-Boulder. Report from the STEM Institutional Transformation Action Research (SITAR) Project, Boulder, CO (2015).
- 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.

## CONFERENCE ACTIVITY AND SEMINARS

### Invited Talks

- 2017** “Equity in Physics Education: Organizing for Change as a Graduate Student,” AAPT Winter Meeting, Atlanta, GA, February 21.
- 2016** “Overview of Education Research and Teacher Preparation at the University of Colorado,” Oslo and Akershus University College, Oslo, Norway, 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,” University of Maryland EER group meeting, College Park, MD, 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** “BECs & 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**

**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**

**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**

**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