# CURRICULUM VITAE

Valerie K. Otero, Professor, School of Education, University of Colorado Boulder
249 UCB, Boulder, CO, 80309, otero@colorado.edu, 720-272-1315

## EDUCATION

| | | |
|---|---|---|
| University of New Mexico | Physics | B.S. 1991 |
| University of California, San Diego | Geophysics | M.A. 1995 |
| University of California, San Diego & San Diego State University | Mathematics & Science Education and Physics Education Research | Ph.D. 2001 |

## FACULTY APPOINTMENTS

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| 2014-Present | Professor of STEM Education and Physics Education Research, CU Boulder |
| 2008-2014 | Associate Professor of Science Education, University of Colorado Boulder |
| 2001-2008 | Assistant Professor of Science Education, University of Colorado Boulder |

## LEADERSHIP ACTIVITIES

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| 2001-present | Executive Director, co-founder, Colorado Learning Assistant (LA) Program |
| 2007-present | Executive Director, founder, International Learning Assistant Alliance |
| 2013-present | Faculty Director, founder, PEER Physics Inclusive K-12 Curriculum and PD |
| 2013-present | Chair, McCray Scholarship Program |
| 2020-present | Provost's Grievance Committee, Chair of cases |
| 2024-present | Cultural Advisor, Latina THRIVE initiative, NSF funded national initiative |
| 2024-2025 | Chair, School of Education Ad Hoc Budget Committee |
| 2023-2024 | Boulder Faculty Assembly (BFA) Budget Committee |
| 2013-2021 | Co-Director, co-founder, Center for STEM Learning |
| 2017-2019 | Chair, CU Boulder Foundations of Excellence, Learning Dimension |
| 2010-2017 | Chair, Department of STEM Education, School of Education |
| 2006-2016 | Co-Director, CU Teach (cohort 1 of the UTeach emulation) |

## ONLINE PRESENCE

**Ed Talk**: "Courage to Learn: The Unexpected Physicist" www.youtube.com/watch?v=51vZav0hH0A

**PEER Physics**: https://peerphysics.org/

**CU Learning Assistant (LA) program**: https://www.colorado.edu/program/learningassistant/

**International LA Alliance**: https://www.colorado.edu/program/learningassistant/

**University of New Mexico Convocation for Department. of Physics and Astronomy, May 2018**: https://www.youtube.com/watch?v=4bn7lKCVRmQ

## AWARDS AND RECOGNITION

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| 2023 | Svend Pedersen Award for Excellence in STEM Education, University of Stockholm |
| 2021 | American Physical Society Fellow |
| 2021 | CU Boulder Faculty Mentor Award for Graduate Students |
| 2019 | American Physical Society Excellence in Education Award |
| 2015 | President's Teaching Scholar, University of Colorado System |
| 2013 | Boulder Faculty Assembly Award for Research Excellence |
| 2013 | Woman Physicist Award, American Physical Society |
| 2009 | Provost's Award for Academic Achievement, CU Boulder |
| 2007 | Best Should Teach Award, awarded CU Boulder, 2007 |

2006 Emerging Pioneer Award, awarded by the Boulder Natural History Museum

2006 Featured in the 2006 CU Boulder "Just the Facts." Office of News Services Publication

2004 Featured in "Sponsored Research: Highlighting some of CU's Outstanding Women Scholars." Published by CU Boulder's Office of Contracts and Grants, http://www.colorado.edu/ocg/reports/2003-04/teacher.html

**SCHOLARSHIP**

***Refereed Articles*** (current/former graduate students/post-docs in **bold**, K-12 teachers in ***bold-italics***)

**Lindsay, W.** & Otero, V. (2024). Students really benefited from that hybridization: facilitated sensemaking in a no-excuses charter network, *Science Education*, DOI: 10.1002/sce.21910.

**Suárez, E.** & Otero, V. (2023). *Ting, Tang, Tong*: Emergent bilingual students investigating and constructing evidence-based explanations about sound production, *J. Res. Sci. Teach*, 61 (1), 137-169. DOI: 10.1002/tea.21868.

**Lindsay, W.** & Otero, V. (2023). Leveraging purposes and values to motivate and negotiate reform, *Science Education,* 107(3), DOI: 10.1002/sce.21815

**Martins, J., Belleau, S.,** & Otero, V. (2021). PEER Physics: An evidence-based framework for inclusive physics curricula, *The Physics Teacher* 59, 730 (2021); https://doi.org/10.1119/10.0007417

**Harlow, D.,** Otero, V., Goldberg, F., Leak, A. Robinson, S., Price, E. (2020). Learning about teaching and learning while learning physics: An analysis of 15 years of responsive curriculum development, *Physical Review Physics Education Research* 16(2), DOI: 10.1103/PhysRevPhysEducRes.16.020155

**Alzen, J.**, Langdon, L., & Otero, V. (2018). A logistic investigation of the relationship between the learning assistant model and failure rates in introductory STEM courses, *International Journal of STEM Education*, 5 (56), https://doi.org/10.1186/s40594-018-0152-1.

**Top, L., Schoonraad, S.,** & Otero, V. (2018). Development of pedagogical knowledge among learning assistants, *International Journal of STEM Educ.*, 5 (1), https://doi.org/10.1186/s40594-017-0097-9.

Otero, V. & Meltzer, D. (2017). The past and future of physics education reform, *Physics Today,* 70 (5), 50-56, http://dx.doi.org/10.1063/PT.3.3555.

Otero, V. & Meltzer, D. (2017). A discipline-specific approach to the history of U.S. science education, *Journal of College Science Teaching,* 46(3), 34-39.

**Gray, K**., Webb, D., & Otero, V. (2016). Effects of the Learning Assistant Model on Teacher Practice, Phys. Rev. Phys. Educ. Res. 12, 020126.

Otero, V. & Meltzer, D. (2016). 100 years of attempts to transform physics education, *The Physics Teacher,* 54, 523, DOI: 10.1119/1.4967888.

Otero, V. (2015). Nationally scaled model for leveraging course transformation with physics teacher preparation, in C. Sandifer and E. Brewe (Eds.), *Recruiting and Educating Future Physics Teachers: Case studies and Effective Practices,* American Physical Society, College Park, MD., 107, ISBN: 978-0-9848110-5-2.

Meltzer, D. & Otero, V. (2015). A brief history of physics education in the U.S., *American Journal of Physics,* 83 (5), 447-458, DOI: 10.1119/1.4902397.

Meltzer, D. & Otero, V. (2015). Scholarly norms for writing history: response to John Rudolph, *American Journal of Physics,* 83 (11), 912.

Meltzer, D. & Otero, V. (2014). Transforming the preparation of physics teachers, *American Journal of Physics, 82* (7), 633-637.

**Harlow, D**., Swanson, L., & Otero, V. (2014). Prospective elementary teachers' analysis of children's science talk in an undergraduate physics course. *Journal of Science Teacher Education, 25* (1), 97-117, DOI: 10.1007/s10972-012-9319-7.

Otero, V., Pollock, S., & Finkelstein, N. (2010). A Physics Department's Role in Preparing Physics Teachers: The Colorado Learning Assistant Model. *American J. of Physics,* 78(11), 1218-1224

Goldberg, F. Otero, V., & Robinson, S. (2010). Design principles for effective physics instruction: A case from Physics and Everyday Thinking. *Am. J. of Physics,* 78(12), 1265-1277.

Otero, V. & **Gray, K.** (2008). Attitudinal gains across multiple universities using the Physics and Everyday Thinking curriculum. *Physics Review Special Topics, Physics Education Research*, 4, 020104-020107, https://doi.org/10.1103/PhysRevSTPER.4.020104..

Otero, V., & Nathan, M. (2008). Pre-service elementary teachers' conceptions of their students' prior knowledge. *Journal of Research in Science Teaching*, *45* (4), 497-523.

Otero, V. (2006). Moving beyond the "get it or don't" conception of formative assessment. *Journal of Teacher Education*, *57*(3), 247-255, https://doi.org/10.1177/0022487105285963.

Otero, V., Finkelstein, N., McCray, R., & Pollock, S. (2006). Who is responsible for preparing science teachers? *Science, 313*(5786), 445-446.

**Harlow, D.** & Otero, V. (2005) Collaboration physics: Elementary teachers and university researchers join forces to help students construct understandings of friction—and discover something of the nature of science in the process. *Science and Children*, *42*(5), 31-35.

Otero, V., Peressini, D., Anderson, K., Ford, P., **Garvin, T**., **Harlow, D**., Mears, C., **Reidel, M**., & **Waite, B**. (2005). Integrating technology into teacher education: A critical framework for implementing reform. *Journal of Teacher Education*, *56*(1), 8-23.

Otero, V., Johnson, A., & Goldberg, F. (1999). How does the computer facilitate the development of physics knowledge among prospective elementary teachers? *Journal of Education*, *181*(2), 57-89.

***Book Chapters***

Otero, V. & Alicea-Muñoz, E. (2023). Research on the development of faculty, graduate research assistants, and undergraduate learning assistants. In *International Handbook of Physics Education Research: Teaching Physics,* edited by M. E. Taşar and P. Heron *(*AIP Publishing, Melville, New York, 2023), pp. 16.1-16.20.

Otero, V., **Harlow, D**. & Meltzer, D. (2023). Qualitative methods in physics education research, In *International Handbook of Physics Education Research: Teaching Physics,* edited by M. E. Taşar and P. Heron *(*AIP Publishing, Melville, New York, 2023), pp 25.1-25-32.

Sorge, S., Otero, V., & Lavonen, L. (2023). Pre-service physics teacher education, In *International Handbook of Physics Education Research: Teaching Physics,* edited by M. E. Taşar and P. Heron *(*AIP Publishing, Melville, New York, 2023), pp 14.1-14.20

Otero, V. (2023). The Learning Assistant Model for Engaging Students, in *Effective Practices in Physics Education,* IOP Publishing, United Kingdom.

Otero, V. (2021). When you stop learning how to teach, you stop teaching people how to learn*,* In Grimes, A., Schrode, N., Stober, R. & Wachowski, S. (2021). *Honoring Teachers As Professionals: Stories and pathways for growth in your Classroom and career*, AIP Publishing, Melville: NY.

Otero, V., Pollock, S., & Finkelstein, N. (2011). A Physics Department's Role in Preparing Physics Teachers: The Colorado Learning Assistant Model. Teacher Education in Physics, in D. Meltzer and P. Shaffer (Eds.) Teacher Education in Physics: Research, Curriculum, and Practice, American Physical Society, College Park, MD, 84-90.

Goldberg, F. Otero, V., & Robinson, S. (2011). Design principles for effective physics instruction: A case from Physics and Everyday Thinking. In D. Meltzer and P. Shaffer (Eds.) Teacher Education in Physics: Research, Curriculum, and Practice, American Physical Society, College Park, MD, 33-45.

Otero, V. & **Harlow, D**. (2009). Getting Started in Qualitative Physics Education Research. In C. Henderson and K. Harper (Eds.), Review of Physics Education Research, 1 (2).

**GRANTS AND GIFTS (Awarded)**

2023-2028 Principal Investigator: Valerie Otero, Title: "Building inclusive classrooms: Diversifying instructional teams with Learning Assistants," DEI IMPACT Grant from the Office of the Senior Vice Chancellor for Diversity, Equity, and Inclusion. **$426,297 Total Award**

2022-2026 Principal Investigator: William Lindsay, Co-PI: Ian Her Many Horses, Valerie Otero, Bethany Wilcox, Title: "Community Centered Pathways for Equity and Justice in STEM Education." NSF-DUE-2243353, **$1,198,594 Total Award**

2022-2024 Project Title: "Leveraging the Learning Assistant Infrastructure to disseminate technologically rich educational environments across three campuses," CU NEXT award by President Saliman. PIs: David Weiss (UCCS), Laurel Hartley (CU Denver) and Valerie Otero (CU Boulder). **$300,000 Total Award**

2022-2024 Principal Investigator: V. Otero, Co-PIs: John Keller, Shelly Belleau, Emily Quinty. Project Title: Elementary STEM Collaborative, CU Boulder SEED Grant **$47,047. Total Award**

2022-2024 Principal Investigator: V. Otero. Co-PI: Shelly Belleau and Emily Quinty: Project Title: "Timmerhaus Expansion Project: High School and University Collaboration" CU Boulder **$49,987. Total Award**

2022-2024 Principal Investigator: V. Otero. Project Title: Leveraging the Learning Assistant Infrastructure to disseminate technologically rich educational environments across three campuses." CU Next Award for collaborative work among 3 campuses. **$300,000 Total Award**

2020-2023 Principal Investigator: V. Otero: Project Title: "Collaborative Research: Scaling Undergraduate STEM Transformation And Institutional Networks for Engaged Dissemination (SUSTAINED)." NSF-DUE-1525338 Supp. **$379,348 Total Award**

2015-2022 Principal Investigator: V. Otero: Project Title: "Collaborative Research: Scaling Undergraduate STEM Transformation And Institutional Networks for Engaged Dissemination (SUSTAINED)." NSF-DUE-1525338 **$2,519,97. Total Award**
*Collaborating universities received an additional $480,000 as a part of this grant*

2015-2022 Principal Investigator, V. Otero: Project Title: "Collaborative Research: Teacher Research Teams II: Expanding Pathways," NSF-Noyce Partnership with Front Range Community College **$924,230 Total Award**

2018-2021 Principal Investigator: V. Otero: Project Title: "Collaborative Research: Investigating the Persistence and Trajectories of Noyce Master Teaching Fellows" NSF-DUE 1758462 **$98,654 Total Award**

2015-2019 Principal Investigator, V. Otero: Project Title: "Grand Challenge: Education for Global Issues," University of Colorado Boulder Internal Competition **$389,200 Total Award**

2013-2021 Principal Investigator, V. Otero with Co-Is L. Langdon and S. Pollock: NSF DUE-1340083, Project Title: "Streamline to Mastery Phase II: Teacher-Led Professional Partnerships" **$1,800,000 Total Award**

2012-2019 Principal Investigator, V. Otero: NSF DUE-1240073, Project Title, "STEM Colorado Teaching to Learn Program" **$799,998 Total Award**

2014-2016 Principal Investigator, V. Otero: Halliburton Foundation Gift with collaborators University of Colorado Denver. Learning Assistants to Prepare STEM Workforce **$60,000 Total Award**

2014-2015 Principal Investigator, V. Otero: Gill Foundation, Project Title: Professional Development for Enacting the NGSS through the PET Curriculum, **$40,000 Total Award**

2013-2015 Principal Investigator, V. Otero with Co-I L. Langdon: NSF-DRL-1317059, Project Title: "From STEM major to Enacting the NGSS (FUSE)" **$99,944 Total Award**

2013-2014 Principal Investigator, V. Otero: Gill Foundation, Project Title: Physics and Everyday Thinking Curriculum Development and Professional Development Project, **$65,000 Total Award**

2013-2016 Principal Investigator, N. Finkelstein, Co-Investigator V. Otero, AAU-1550774, Project Title: "Undergraduate STEM Education" **$500,000 Total Award**

2012-2013 Principal Investigator, V. Otero: Ball Aerospace, Project Title: "Ball Scholars Program" **$24,000 Total Award**

2010-2015 Principal Investigator, Tom Cech with V. Otero: Howard Hughes Medical Institute, "Studying and Scaling the Learning Assistant Program of Teacher Education and Institutional Change" **$300,000 Total Award**

2009-2015 Principal Investigator, V. Otero with Co-Is L. Langdon and N. Finkelstein: NSF DUE-0934921, Project Title: "Streamline to Mastery Phase I" **$1,499,569 Total Award**

2009-2014 Principal Investigator V. Otero with Co-Is M. Klymkowsky, S. Pollock, & D. Briggs: Division of Undergraduate Education, National Science Foundation: NSF DUE-0554615, Project Title, "Learning Assistant Model for Teacher Education in Science and Technology (LA-TEST)." **$2,493,149 Total Award**

2009-2012 Principal Investigator, V. Otero with M. Klymkowsky, D. Webb, S. Pollock, N. Finkelstein: NSF DUE-0833258, Project Title, "STEM/Noyce Fellowship Phase II." **$500,000 Total Award**

2009-2013 Senior Personnel/Co-author: PI: Phil DiStefano, NSF I-3, *Towards a Center for Science*

*Technology Engineering & Math Education* **$998,600 Total Award**

2008-2011 Principal Investigator V. Otero with Co-I M. Klymkowsky: National Mathematics and Science Initiative (Exxon/Mobile Funding). Project Title, “The U-Teach Replication Program.” **$2,397,133 Total Award**

2008-2011 Principal Investigator F. Goldberg with Co-Is V. Otero, E. Price, S. Robinson, & R. Kruse: Division of Undergraduate Education-Course, Curriculum and Laboratory Improvement. Project Title, “Developing a Large-Enrollment Physical Science Curriculum.” **$499,946 Total Award**

2004-2008 Principal Investigator V. Otero with Co-Is R. McCray, J. Curry, & W. Wood: DUE, National Science Foundation DUE-0434144. Project Title, “Colorado STEM/Noyce Fellowship Program.” **$500,000. Total Award**

2004-2007 Co-Principal Investigator: American Physical Society #1540955. Project Title, “Colorado PhysTEC.” **$424,576 Total Award**

2003-2006 Principal Investigator R. McCray with Co-Is V. Otero, J. Curry, C. Wieman, & W. Wood: Education & Human Resources/Division of Undergraduate Education, National Science Foundation NSF-0203022, EHR/DUE. Project Title, "Transforming Science & Mathematics Teacher Preparation." **$932,847 Total Award**

2001-2008 Principal Investigator: F. Goldberg with Co-Is V. Otero & S. Robinson: National Science Foundation ESI-0096856, Project Title, "Professional Development Materials for Constructing Physics Understanding Among Prospective and Practicing Elementary Teachers." **$2,021,747 Total Award**

## INVITED PRESENTATIONS, PLENARYS, AND KEYNOTE PRESENTATIONS

### *International*

Otero, V. et al. (2024). Svend Pedersen Award Lecture: Institutional Change and the LA Model, January 23-25, Stockholm, Sweden.

Otero, V. (2024). How the new budget model rationalized defunding the LA program on campus, presented at the International Learning Assistant Conference, Boulder, CO, October 18-21, 2024.

Otero,V. & Adelmann, B. (2024, October). Making the case: complexity vs. simplicity, workshop presented at the International Learning Assistant Conference, Boulder, CO, October 18-21, 2024.

Otero, V. (2024, October). LA Campus Software for Managing and Growing Your Program, workshop presented at the International Learning Assistant Conference, Boulder, CO, October 18-21, 2024.

Otero, V. (2023). The Learning Assistant Program in the Egyptian Context, 6-day workshop for professors from 5 Egyptian universities implementing the LA model, , July 6-14, Cairo, Egypt.

Otero, V. (2023). Introduction to learning theory: Motivational consequences, presented at the annual International Learning Assistant Conference, , October 27, Boulder, CO.

Otero, V. (2023). The Learning Assistant Model in the United Kingdom, presented to faculty from multiple universities interested in the LA model for the UK, online, August 2-3.

Otero, V., McIntosh, B., Landgon, L., Close, E. (2022). First Nordic Regional Workshop: The Learning Assistant Model, 3-Day workshop invited by the University of Oslo, June 7-10, Oslo, Norway.

***Quinty, E., Belleau, S***. and Otero, V. (2022, August). 3-Day workshop for over 20 physics teachers in Latvia, , August 8-10, online.

Otero, V. (2021). The Learning Assistant Model and Its Impacts, Presented at the Annual Meeting of the Research Institute for Higher Education, Hiroshima, Japan. Attended by scholars from 27 Japanese and Chinese universities, March 12, online.

Otero, V. (2020). The pandemic presents rare opportunities for paradigm shifts in education, International Learning Assistant Conference, November 14-17, online.

Otero, V. (2018). Managing Growth, Taking on New Roles, and Assisting Faculty in the Change Process, *Presented at the International Learning Assistant Conference (representatives from 5 countries attending),* November 3-5, Boulder, CO.

Otero, V. (2013). Learning as a Social Practice: A lens for establishing equity and access across multiple populations and contexts in Science, Math and Engineering, Key Note at the *International Realistic Mathematics Conference,* , Sept. 27-29, Boulder, CO.

Otero, V. (2012). Participatory model for STEM faculty change, presented at the University of Copenhagen, November 23, Copenhagen, Denmark.

Otero, V. (2011). Future Directions in Science Education and Science Teacher Preparation, The First Annual Conference on Teaching and Learning in Higher Education as a Tool for Progress*,* January 13-18, Ryiadh, Saudi Arabia.

Otero, V. (2009). Moving Education Outside the Classroom: 21st century model for science education and teacher preparation, October 30, 2009, Ewah Woman's University, Seoul, Korea.

Otero, V. (2009). New Directions for Teacher Preparation, Ewah Woman's University, October 31, Seoul, Korea.

Otero, V. & **Ross, M**. (2009). Authentic Science Activities In The Primary Level Classroom: Investigating the Effects of a Data Collection and Analysis Interface on Primary Level Students' Scientific Literacy. Paper presented at the Multimedia in Physics Teaching and Learning**,** University of Udine, , 23-25 September, Udine, Italy.

Otero, V. (2003). *Qualitative research on student conceptual development: The need for a theoretical framework*. Paper presented at the International School of Physics, Enrico Fermi, July 15-25, Varenna, Italy.

***National: University, University Systems, K-12 Districts: Invited Keynote and Colloquia***

Otero, V. and Schick, C. (2024). Institutional Workshop at University of Alaska Anchorage, building and scaling their LA Program, August 12-15, Anchorage, AK.

Otero, V. (2023). Institutional Workshop at California Polytechnic University, San Luis Obispo for scaling their LA program, March 12-14, San Luis Obispo, CA.

Otero, V. (2023). Institutional Workshop at University of Alaska Anchorage for starting their Learning Assistant Program, August 14-15, Anchorage, AK.

Otero, V. and Heartley, L. (2023). Institutional Workshop at Metropolitan State University of Denver, March 31, Denver, CO.

Otero, V. and Quinty, E. (2023). PEER Physics at Mesa School District, Mesa School District meeting, February 14-15, Grand Junction, CO.

Otero, V. and Shelly Belleau (2023, May and August). PEER Physics at Scottsdale Public Schools, Professional learning for teachers, May and August 17-19, Scottsdale, AZ.

Otero, V. and Meltzer, D. (2023). Lillian McDermott: Physicist, Educator, Activist, Presented at a special session at the Univ. of Washington Seattle, honoring Lillian McDermott, January 18, Seattle, WA.

Otero, V. (2021). Beyond College and Workforce Preparation—Integration of the whole person, presented at University of Massachusetts Amherst, April 6, Amherst, MA .

Otero, V. (2021), How do students find love for themselves through physics? Presented at Tufts University, March 5, Boston, MA.

Otero, V. (2021). Learning Assistant Program and Its Impacts: Beyond pedagogical content knowledge, presented at the California State University System Peer Learning Series, January, 8, online.

Otero, V. (2019). Improving Undergraduate STEM instruction through the use of Learning Assistants, Boston University, Boston, MA.

Otero, V. and ***Belleau, S.*** (2018). Transforming courses, Engaging Teachers, and Assessing Multiple Dimensions with the PEER Suite, presented at the meeting of the American Association of Physics Teachers Summer Meeting, July 27-August 1, Washington, D.C.

***Belleau, S***. and Otero, V. (2018). Three-Dimensional Assessment in High School Physics, presented at the meeting of the American Association of Physics Teachers Summer Meeting, July 27-August 1, Washington, D.C.

Otero, V. (2018). The Learning Assistant Model as a Catalyst for Instructional Innovation and Institutional Change, Michigan State University, December 6, East Lansing, MI.

Otero, V. (2018). LA Campus Software for Managing Your LA Program, Michigan State University, December 8, East Lansing, MI.

Otero, V. (2018). The Past and Future of Physics Education Reform, University of New Mexico, Department of Physics and Astronomy, May 10, Albuquerque, NM.

Otero, V. (2018). University of New Mexico Convocation, Department of Physics and Astronomy, May 11, Albuquerque, NM.

Otero, V. (2018). The Learning Assistant Model as a Catalyst for Institutional Change and Building Inclusive Learning Environments, Chicago State University, March 2, Chicago, IL.

Otero, V. (2017). The Learning Assistant Model as a Catalyst for Institutional Change, University of Georgia, February 17-18, Athens, GA.

Otero, V. (2014). If you want to hang out with me, stop calling me stupid! Colloquium to the Discipline-Based Educational Research community at Florida International University, November 13-14, Miami, FL.

Otero, V. (2012). A physics departments' role in addressing the crisis in physics education, presented at the physics colloquium, May 8, Michigan State University.

Otero, V., Vokos, S., Kramer, L., & Close, H. (2011). The Colorado Learning Assistant Program, Presented to Science, Math, and Education Faculty at University of Colorado, Denver, August, 12, Denver, CO.

Otero, V. (2011). Transforming Classrooms So To Align with How Students Learn, *Scientia,* Rice University, February 11-12, Houston, TX.

Otero, V. (2010). Experiential Learning Model for STEM Education, Faculty Development, and Teacher Preparation. Presented at the Science Education Colloquium at University of Michigan, May 10-12, Ann Arbor, MI.

Otero, V. (2010. Improving Physics Instruction Using Learning Assistants, Presented at the Colorado School of Mines, Physics Colloquium, March 9, Golden, CO.

Otero, V. (2010). Preserving Excellence in Undergraduate Education at a Relatively Low Cost. Presented at Auburn University, sponsored by the Association of Public and Land Grant Universities, February 22, 2010. Auburn, AL.

Otero, V. & Finkelstein, F. (2009). Colorado Learning Assistant Model, presented to the Montana Math and Science Teacher Initiative Steering Committee*,* University of Montana System, August 4, Helena, MT.

Otero, V. (2009). The evolution of elementary teachers' model-building practices. Distinguished lecture series, San Diego State University, April 30, San Diego, CA.

Otero, V. (2009, October). The Colorado LA Program: A model education program of tomorrow. Presented at Seattle Pacific University, October 10, Seattle, WA.

Otero, V. (2008). Are you responsible for preparing science teachers? Colloquium presented at the University of Michigan Multi-disciplinary science group, March 19, Ann Arbor, MI.

Otero, V. (2008). Research departments' responsibilities for preparing future science teachers. Colloquium for the University of Rutgers Multi-disciplinary science group at Rutgers University, November 17, New Brunswick, NJ.

Otero, V. (2008). A Longitudinal Study on Pedagogical Content Knowledge: Synthesizing Research on Content, Pedagogy, and Practice, Keynote speaker for IDEA Institute ribbon cutting ceremony, University of Michigan, October 16, Ann Arbor, MI.

Otero, V. (2008). Evolution of Students' Model Building Practices, April 8, University of Illinois Urbana Champaign, Champaign, IL.

Otero, V. (2007). *The Learning Assistant model for recruiting talented math and science students to careers in teaching.* Workshop conducted for the University of North Carolina System, University of North Carolina, Chapel Hill., August 13, *Invited by President Erskine Bowles,* Chapel Hill, NC.

Otero, V. (2006). *Who is responsible for recruiting and preparing science teachers?* Texas State San Marcos, December 10, San Marcos, TX

Otero, V. (2001). *A cognitive system: Students' evolving conceptions of electrostatics and the evolving social and material environment*. Presented to the Department of Physics, Ohio State University, April 23, Columbus, OH.

***Invited Presentations at National Conferences and Professional Meetings***

Otero, V. (2025). Qualitative Research in PER, PERTG Community Conversations, November 2025.

Otero, V. and Meltzer, D. (2023). Lillian McDermott as Mentor, Model, and Inspiration, Presented at the Winter Meeting of the American Association of Physics Teachers, . January 15-18, Portland, OR.

Otero, V. (2022). Building Inclusive Classrooms: Diversifying Instructional Teams with LAs, presented at the International LA Conference, , November 9-12, Boulder, CO.

Otero, V. (2022). The Challenges of Institutional Racism, Presented at the Diversity, Equity, Inclusion and Belonging Session for 3Q:DEPT, a National Digital Marketing Company, August 24, online.

Otero, V. (2022). The role of identity in the learning process, presented at the April Meeting of the American Physical Society, April 9-12, New York, New York.

Otero, V. & Langdon L. (2022) Learning Assistant Apps and Resources, PhysTEC Conference, March 3-6, virtual.

Otero, V. (2021). Beyond college and workforce preparation: Integration of the whole student, presented at the National Conference to Advance POGIL practice, June 30, 2021, virtual.

Otero, V. (2021). Learning Assistants collaborate with faculty to build inclusive learning environments leading to valued outcomes, presented at the April Meeting of the American Physical Society, April 17-20, virtual.

Otero, V., ***Quinty, E.,*** and ***Belleau, S***. (2020). Physics through Evidence, Empowerment through Reasoning, American Physical Society PhysTEC conference, Feb. 29 - March 1, Denver, CO.

Otero, V., Langdon, L., Close, E., and Evans, B. (2020). Essential Elements for Setting Up Your LA Program, American Physical Society PhysTEC conference, Feb. 29 - March 1, Denver, CO.

Otero, V. (2020). Doing Physics While Being a Carnie, annual meeting of the American Association of Physics Teachers, July 18-22, virtual.

Otero, V. (2020). Panel Participant, Physics Education Research Conference Bridging Session with the American Association of Physics Teachers, July 22-23, virtual.

Otero, V. (2020). The Challenges of Institutional Racism, Local Science Engagement Network of the American Association for the Advancement of Science (AAAS, LSAMP), September 30, virtual.

Otero, V. (2019) Improving undergraduate physics instruction and physics teacher preparation through the use of Learning Assistants, American Physical Society March meeting, March 4, Boston, MA.

Otero, V. (2019). LA Campus software for managing your program and collecting longitudinal data, Workshop presented at the annual PhysTEC meeting, March 5, Boston, MA.

Otero, V. (2019). Learning Assistant Model for Building Equitable Learning Environments, *presented* at the American Physical Society April Meeting, April 16, Denver, CO.

Otero, V. (2017, February). Using Resources, Tools, and Assessments from the International Learning Assistant Alliances Portal to Transform Your University, PhysTEC, Atlanta, GA.

Otero, V. (2016). Inclusive pedagogy and engaged learning in foundational courses, presented at the conference, *Reinventing Undergraduate Education: A Blueprint for America's Research Universities,* November 11-12, Washington, D.C.

Otero, V. (2016). Theoretical Frameworks in Qualitative PER, presented at the meeting of the American Association of Physics Teachers, July 16-20, Sacramento, CA.

Otero, V. (2016). The Learning Assistant Model: A catalyst for educational change, presented at the Institution for Teaching and Learning (TILT), A university wide faculty event, Colorado State University, May 18-19, Fort Collins, CO.

Otero, V. (2016). International Learning Assistant Alliance: Social Organizing System for Sharing Resources and Building Institutional Networks, Presented at Envisioning the Future of Undergraduate STEM Education, Washington, D.C., April 27-29, Washington, D.C.

Otero, V. (2016). Teacher Research Teams: Recruitment, preparation, induction, and professional development, presented at the annual conference of the Physics Teachers Education Coalition, March 11-13, Baltimore, MD.

Otero, V. (2016). Forgetting History and Other Reasons Change is Hard: Clashing Perspectives, presented at the biannual meeting for the American Association of Physics Teachers, January 9-12, New Orleans, LA.

Otero, V. (2015). State of the Field of Physics Education Research, presented at the Foundations and Frontiers of Physics Education Research Conference, June 15-19, Bar Harbor, ME.

Otero, V. (2015). Teacher Research Teams: Recruitment, Induction, and Professional Development, presented at the Physics Teachers Education Coalition, February 5-7, Seattle, WA.

Otero, V. and Taylor, E. (2015, February). How Children Learn Math and Science, Chautauqua Education Series: Learning in and Out of School, February 18, Boulder, CO.

Otero, V. (2015). Teacher Research Teams: Dual roles for teachers impact their practice, presented at the biannual meeting for the American Association of Physics Teachers, , January 5-7, San Diego, CA.

***Quinty, E.*** & Otero, V. (2015). Collaborative PER as a form of teacher induction and mentoring, presented at the biannual meeting for the American Association of Physics Teachers, January 5-7, San Diego, CA.

Otero, V. (2014, June). Streamline to Mastery and Teacher Research Teams: A model for teacher-led professional development, presented at Colorado Integration Showcase, June 16-18, Vail, CO.

Otero, V. (2013). The Colorado LA Model: Variations, Trade-Offs, and Differential Goals, presented at the biannual meeting of the American Association of Physics Teachers, July, 2013, Portland, OR.

Otero, V. (2013). Colorado Learning Assistant Program as a Model for Institutional Change: critical elements, national impacts, local implication, presented at the biannual meeting of the American Association of Physics Teachers, January, 2013, New Orleans, LA.

Otero, V. (2012). Towards a national research agenda for the Colorado Learning Assistant Model, Presented at the Physics Education Research Conference, Philadelphia, PA, .

Otero, V. (2012). Conceptual Change to Critical Race Theory: Spectrum of PET Research, Presented at the meeting of the American Association of Physics Teachers, August 1, Philadelphia, PA.

Otero, V. (2012). Writing for Academic Journals, Invited Panel, Presented at the biannual meeting of the American Association of Physics Teachers, August 2, Philadelphia, PA.

**Ross, M.,** ***Belleau, S.,*** Otero, V. (2012). Challenging Traditional Assumptions of Secondary Science through the PET Curriculum, Presented at the conference of the American Association of Physics Teachers, August. 2, Philadelphia, PA.

**Gray, K.** & Otero, V. (2012). Observation Protocols and Artifact Packages for Evaluating Teacher Preparation Programs, presented at the biannual meeting of the American Association of Physics Teachers, February 7, Ontario, Canada.

Otero, V. (2012). PhysTEC and UTeach at the University of Colorado, Boulder, Presented at the annual meeting for the National Mathematics and Science Initiative, Austin, TX.

Otero, V. (2011). Taking Action: Physics Departments Can Contribute Significantly to National Problems, Presented at the bi-annual conference of the American Association of Physics Teachers, January 8-12, Jacksonville, Fl.

Otero, V. (2011). A Physics Department's Role in Preparing Physics Teachers: Learning Assistants, Presented at the bi-annual conference of the American Association of Physics Teachers, January 8-12, Jacksonville, Fl.

Otero, V. (2011). The Role of Physics in the Core Curriculum, Presented at the National Research Council's Committee on Undergraduate Physics Education Research and Implementation, May, Washington, D.C.

Otero, V. (2011). We're Not Gonna Take It: Changing Education, Presented for the Miramontes Arts and Sciences Program, Boulder, CO.

Otero, V. (2011). Transforming Your Courses Using LAs: Implementation and Impacts, *Presented at the annual conference of the Physics Teachers Education Coalition,* Austin, TX.

Otero, V. (2010). Transforming Astronomy Education, Presented at the Cosmos in the Classroom Conference, August 2-4, Boulder CO.

Otero, V. (2010). Physics Learning as the Objectification of Discourse, Presented at the bi-annual conference of the Am. Association of Physics Teachers, July 20, Portland, OR.

Pollock. S. & Otero, V. (2010). Colorado Learning Assistant Model: Impacts and Outcomes, Presented at the conference of the American Association of Physics Teachers, July 18, Portland, OR.

Otero, V. (2010). Task Force on Teacher Education in Physics: Findings and Recommendations, Presented at the American Physical Society March Meeting, March 15, Portland, OR.

Otero, V. (2010). Reconceptualizing Undergraduate Education: LA Programs as Experiential Learning Models, presented at the biannual meeting of the American Association of Physics Teachers, February 16, Washington, D.C.

Otero, V. (2010). Reconceptualizing Undergraduate Education: LA Programs as Experiential Learning Models, Presented at the biannual meeting of the American Association of Physics Teachers, February 18, Washington, D.C.

Otero, V., ***Ananda, V., & Stachurski, S.*** (2010). Bringing it all together: NSF Funding to support the continuum for science teacher preparation. Keynote presented at the annual meeting of the Physics Teachers Education Coalition, February 11, Washington D.C.

Otero, V. & Pollock, S. (2010). Introduction to the Colorado Learning Assistant Program. Presented at the annual meeting of the Physics Teachers Education Coalition, February 12, Washington, D.C.

Otero, V. & Finkelstein, N. (2010). Experiential Learning Model for STEM Education, Faculty Development, and Teacher Preparation, Annual Meeting of the Leadership Council of the Science and Mathematics Teacher Imperative, Association of Public and Land Grant Universities, January 6-8, Miami, FL.

Otero, V. (2009). Stop shining the old pot: New models of institutional change. Race to the Top, STEM, hosted by the National Governors Association, December 9, Washington, D.C.

Otero, V. (2009). Educating Scientists to Become Civil Rights Activists. Presented at the meeting of the Hispanic Association of Colleges and Universities, October 23, Denver, CO.

Otero, V. (2009). What does it mean to learn physics? Presented at American Physical Society Four Corners Meeting, October 23, Colorado School of Mines, Golden, CO.

Otero, V. (2009). Measuring Teacher Quality with the FASCI Instrument. Presented at the biannual meeting of the American Association of Physics Teachers, July 29, Ann Arbor, MI.

Otero, V. (2009). Introduction to The Colorado Learning Assistant Program, presented at the annual conference of the Science and Mathematics Teacher Imperative of the Association of Public and Land Grant Universities, May 18, Boulder, CO.

Otero, V. (2009). Colorado Learning Assistant Model for Recruiting and Preparing STEM Teachers. Presented at the UTeach Institute annual meeting, May 28, Austin, TX.

Otero, V. (2009). Computer Simulators as a Tool for Helping Elementary Teachers Appropriate Norms and Practices of Model Building in Science. Presented at the annual meeting of the American Education Research Association, April 17, San Diego, CA.

Otero, V. (2009). Building the Base for a Focus on Learning: The critical role of undergraduate science experiences in science teacher preparation, Symposium on Translating Research into Practice. Presented at the annual meeting of the American Education Research Association, April 16, San Diego, CA.

Otero, V. & S. Pollock (2009). Running a weekly planning session for Learning Assistants: A workshop for physics faculty. Presented at the annual conference of the Physics Teachers Education Coalition, March 13, Philadelphia, PA.

Otero, V. & N. Finkelstein (200,M). Transforming your undergraduate physics course using Learning Assistants. Presented at the annual conference of the Physics Teachers Education Coalition,

March 14, Philadelphia, PA.

Otero, V. (2009.) Design Principles for an Effective Laboratory Environment. Presented at the biannual meeting of the American Association of Physics Teachers, February 14, Chicago, IL.

Otero, V. (2008). Transforming Identities: From Physics Major to Physics Teacher; from Elementary Teacher to Elementary Physics Teacher, Presented at the bi-annual meeting of the American Association of Physics Teachers, July 19-23, Edmonton, Alberta, Canada.

Otero, V. (2008). Crisis in Physics Education: When local solutions hit the national scene. Physics Department Colloquium, University of Colorado, Boulder.

Otero, V. (2007). The Road Less Traveled: The STEM Colorado LA Program, presented at the bi-annual meeting for the American Association of Physics Teachers, July 23l,Greensboro, N.C.

Otero, V., & STEM Colorado/PhysTEC Team. (2006, November). *Who is responsible for recruiting and preparing science teachers?* Paper presented at the Northwest regional meeting of the American Association of Physics Teachers, Seattle, WA.

Otero, V. (2006). The Colorado Learning Assistant model: A multidisciplinary approach to teacher recruitment and preparation. Paper presented at the annual meeting of the National Academy of Education, October 20, Boulder, CO.

Otero, V., ***Jalovec, S.,*** & **Her Many Horses, I. (**2006). *SWOSing and theoretical perspectives that can explain it.* Paper presented at the biannual meeting of the American Association of Physics Teachers, July 25, Syracuse, NY.

Otero, V., (2006). *The Colorado Learning Assistant model: A multidisciplinary approach to teacher recruitment and preparation*. Presented at the annual meeting of the American Physical Society, April 23, Dallas, TX.

Otero, V. (2005). *Evolution of theoretical perspectives in PER and the types of research we can (or can't) do*. Paper presented at the First Foundations and Frontiers of Physics Education Conference, June 22, Bar Harbor, ME.

Otero, V. (2005). *Repositioning ourselves from "knowers" to "learners": Formative assessment, Vygotsky, and teacher development.* Paper presented at the annual Physics Education Research Conference, August 11, Salt Lake City, UT.

Otero, V., & STEM Colorado Team (2005). *Coupling teacher recruitment and preparation with undergraduate course transformation.* Paper presented at the annual meeting of the Physics Teaching Coalition, March 11, Muncie, IN.

Otero, V. (2005). *Recruiting talented math and science majors to careers in teaching: A collaborative effort for K-20 educational reform.* Paper presented at the annual meeting of the American Association for the Advancement of Science, January 10, Washington, DC.

Otero, V., Iona, S., & Pollock, S. (2004). *Shared responsibility for preparing teachers*. Presented at the biannual meeting of the American Association of Physics Teachers, August 1, Sacramento, CA.

Otero, V. (2004). *The role of education research in PER and teacher education*. Paper presented at the biannual meeting of the American Association of Physics Teachers, January 26, Miami, FL.

Otero, V. (2003, November). *Blurring the boundaries between physics departments and schools of education for teacher preparation.* Paper presented at the Joint Fall Meeting of the AAPT AOK & Nebraska AAPT Sections and Big 12 Physics Education Research Conference, Kansas State University, Manhattan, KS.

Otero, V., **Cobanoglu, D., & Harlow, D**. (2003). *The subtle role of tacit theory in physics educational research.* Paper presented at the biannual conference of the American Association of Physics Teachers, January 13, Austin, TX.

Otero, V. (2001). *Combining group behaviors with out-of-class interviews*. Paper presented at the annual meeting of the American Association of Physics Teachers, July 25, Rochester, NY.

Otero, V. (2001). *The changing role of the computer simulator in students' construction of explanatory models*. Paper presented at the annual meeting of the National Association for Research in Science Teaching, March 27, St. Louis, MO.

Otero, V. (2001). *Learning about static electricity and the role of the computer simulator,* Paper presented at the annual meeting of the Denver Area Physics Teachers, Denver, CO.

**MASTER TEACHING – INVITED WORKSHOPS AND COGNITIVE COACHING**

Otero, V., Emenike, M., & Kristiniak, R. (2024). Nuts and bolts of building, growing, and sustaining your LA program, presented as a part of the International Learning Assistant Alliance eSeries online workshops, April 22, virtial.

Otero, V., Emenike, M., & Kristiniak, R. (2024). What is the pedagogy course and why is it necessary? presented as a part of the International Learning Assistant Alliance eSeries online workshops, April 23, virtual.

LAA eSeries Workshops (2024). Essential Elements of the LA Program (4) online.

LAA eSeries Workshops (2024). Weekly Preparation Sessions (4) online.

LAA eSeries Workshops (2024). Transforming Courses to Engage Students (4) online.

PEER Physics Workshops (2024): 11 high school physics teacher workshops in 7 states.

PEER Physics Workshops for global collaboration (2023).: 13 Workshops in 9 states, 2 countries

PEER Physics Institutional Workshops for specific U.S. States or Districts: 21 Workshops in 9 States

PEER Physics Team (2023). Online and in-person professional learning community meetings for Cohort group, Pilot group, and Summer institutes, 11 Workshops, mostly online (2 in person).

Otero, V., Emenike, M., & Kristiniak, R. (2023). Nuts and bolts of building, growing, and sustaining your LA program, presented as a part of the International Learning Assistant Alliance eSeries online workshops, March 28 and April 21, virtial.

Otero, V., Emenike, M., & Kristiniak, R. (2023). What is the pedagogy course and why is it necessary? presented as a part of the International Learning Assistant Alliance eSeries online workshops, April 7 and April 25, virtual.

Otero, V. (2023. Content Immersion Activity: Pedagogical Tools, workshop presented at the International Learning Assistant Conference, October 27-29, Boulder, CO.

Otero,V. & Adelmann, B. (2023). Making the case: complexity vs. simplicity, workshop presented at the International Learning Assistant Conference,October 27-29, Boulder, CO.

Otero, V. (2023). LA Campus Software for Managing and Growing Your Program, workshop presented at the International Learning Assistant Conference, October 27-29, Boulder, CO.

Otero, V. (2023). CU Next: Three CU campus collaboration to implement the Learning Assistant Model, presented at the meeting of the President's Teaching Scholars Program, November 3,Boulder, CO.

Otero, V. (2023). CU Next Faculty Community Invitational, faculty from UCCS, CU Boulder, and CU Denver, meet for 2 days, Botanic Gardens, August 4-6, Denver, CO.

Otero, V. and ***Belleau, S.*** (2015). Physics and Everyday Thinking-High School: Teacher Professional Development and College Preparation, Presented at the American Physical Society's PhysTEC annual conference, February 6, Seattle, WA.

Otero, V. and **Langdon, L.** (2015). Scaling and Sustaining your LA Program through Faculty Development Workshops, Presented at the American Physical Society's PhysTEC annual conference, February 7, Seattle, WA.

Otero, V., **Langdon, L.,** and ***Belleau, S***. (2015). Teacher Research Teams for Recruitment, Preparation, Induction, and Professional Development, Presented at the American Physical Society's PhysTEC annual conference, February 7, Seattle, WA.

Otero, V. (2013). Inductive reasoning contexts for generating principles about effective teaching practice and about the natural world, Workshop at the International Realistic Mathematics Conference, September 27-29, Boulder, CO.

Otero, V., **Langdon, L**. & Regional Workshop Team Leaders group (2013). Fifth Annual International National Learning Assistant Workshop, October 27-29 Boulder, CO.

Otero, V., ***Belleau, S***., **Ross, M.** (2013). Physics and Everyday Thinking Curriculum and Professional Development for Building Inclusive Classroom Environments, presented at the Nationals Science Teachers Association, Denver, CO.

Otero, V. & **Langdon, L.** & STEM Colorado Group (2012). Fourth Annual National Learning Assistant Workshop, October 28-30, Boulder, CO.

Otero, V. and the STEM Colorado Group (2011). Third annual: Colorado Learning Assistant Program, Nuts n' Bolts, Theory, and Rolling it Out at Your University, American Physical Society University of Colorado Boulder, October 13-14, Boulder, CO.

Otero, V. & Pollock, S. (2011). Nuts n' Bolts of Transforming Your Course to Increase Student Engagement, *Scientia,* Rice University, February 11-12, Houston, TX.

Otero, V. & Pollock, S. (2011). Introduction to the Colorado Learning Assistant Program, Physics Teachers Education Coalition, May 23-24, Austin, TX.

Otero, V. and the STEM Colorado Group (2010). Second Annual Colorado Learning Assistant Program, Nuts n' Bolts, Theory, and Rolling it Out at Your University, American Physical Society at the University of Colorado Boulder, October 13-14, Boulder, CO.

Otero, V. & Finkelstein, N. (2010). Introduction to the Colorado Learning Assistant Program, presented at the annual meeting of the Association of Public and Land Grant Universities, Science and Mathematics Teacher Imperative, June 9-11, Cincinnati, OH.

Otero, V. (2010). Evaluating a Teaching as Research Project, Graduate Teachers Program, University of Colorado Boulder, March 15, Boulder, CO.

Otero, V. & Pollock, S. (2010). Implementing the Colorado Learning Assistant Program at Other Universities. Presented at the annual meeting of the Physics Teachers Education Coalition, February 12, Washington, D.C.

Goldberg, F., Otero, V., & Robinson, S. (2010). Following Students' Learning in the PET, PSET, and LEPS Courses for Perspective Teachers, Presented at the biannual conference of the American Association of Physics Teachers, February 14, Washington, D.C.

Otero, V. (2009). Qualitative Physics Education Research: Data, Analysis, and Relevance, Presented at annual meeting of American Association of Physics Teachers, Ann Arbor, MI.

Goldberg, F., Otero, V., Robinson, S. (2009). Physics and Everyday Thinking & Physical Science and Everyday Thinking, Presented at the biannual meetings of the American Association of Physics Teachers.

Otero, V., Pollock, S., & Finkelstein, P. (2008). *Strategies for implementing specific activities in a pedagogy course for LAs*. Workshop presented at the National meeting of the Physics Teachers Education Coalition, February 29, Austin, TX.

**Talbot, R.,** & Briggs, D. (2008). *The Flexible Application of Student-Centered Instruction instrument*. Workshop presented at the National meeting of the Physics Teachers Education Coalition, February 29, Austin, TX.

Otero, V., & Iona, S. (2007). *Nuts and bolts of designing a pedagogy course for Learning Assistants*. Workshop conducted at the annual meeting of the Physics Teacher Education Coalition, Boulder, CO.

Otero, V., Stewart, G., & Vokos, S. (2006). *Undergraduate learning assistants: A powerful way to improve student learning and recruit future teachers.* Workshop conducted at the annual meeting of the Physics Teacher Education Coalition*,* Fayetteville, AR. -*Invited*

Otero, V., & Poel, R. (2005). *What is inquiry? How do we measure it?* Workshop conducted at the annual meeting of the Physics Teachers Education Coalition, Muncie, IN.

Otero, V., & Cobanoglu, D. (2002). *How do we know what students are thinking? Theory and methods in video data analysis*. Workshop presented at the summer meeting of the American Association of Physics Teachers, August 6, Boise, ID.

Otero, V., Hammer, D., & May, D. (2001). *How do we know what students are thinking? Theory and methods in video data analysis.* Workshop presented at the summer meeting of the American Association of Physics Teachers, July 23, Rochester, NY.

***Popular Press***

Otero, V. (2022). Courage to Learn: The unexpected physicist, CU Boulder School of Education Ed Talk, April 14, 2022 online.

Otero, V. (2010). Struggling with the College Equation, *Coloradan, University of Colorado, Boulder.*

Otero, V., **Ross, M., & Sherman, S.** (2010). A Synergistic Model of Educational Change, *American Physical Society Forum on Education Newsletter, Fall 2010*.

Finkelstein, N., Otero, V., & Pollock, S. (2006). Teaching to learn: The Colorado Learning Assistant program's impact on learning content. *American Physical Society Forum on Education Newsletter, Fall 2006/Spring 2007,* 11-13.

Otero, V. (2006). The Learning Assistant model for teacher preparation in science and technology. *American Physical Society Forum on Education Newsletter, Summer 2006,* 31-35.

## PROFESSIONAL ACTIVITIES

### *National Boards and Committees*

| | |
|---|---|
| 2024-present | Advisor, IUSE Institutional and Community Transformation Level II: United Active Learning Reform in STEM (UALRS), University of Arkansas, Little Rock |
| 2024-2025 | Cultural Advisor for department chairs nation-wide as a part of the Latina THRIVE (The Healthy DepaRtment Initiative for InclusiVe Excellence) Partnership, which is supported by the National Science Foundation's ADVANCE program and seeks to remedy gender inequity in academic STEM careers. |
| 2024 (April) | Advisor, Janet H. and C. Harry Knowles Foundation Teacher Initiative |
| 2023-present | Advisory Board, NSF IUSE IUSE: "Identifying and promoting mechanisms by which LAs foster belonging and self-efficacy in underserved populations," Vanderbilt University. |
| 2023-present | Advisory Board, NSF IUSE Institutional and Community Transformation Level II: Upholding Active Learning Reform in STEM, University of Arkansas. |
| 2019-present | Advisory Board, SEISMIC, 2019-present SEISMIC Advisory Board: a network of 10 universities focused on improving diversity, equity and access at the college level |
| 2019-present | Advisory Board, NSF-HSI, Adams State University, Project EMPOWER: Focused on improving outcomes for students in STEM at Adams State, a Hispanic Serving Institution |
| 2018-present | National Advisory Board, American Physical Society PhysTEC: Focused on increasing the number and diversity of physics teachers nation-wide |
| 2019-2022 | Advisory Board, NSF-HSI, Chico State, Texas State San Marcos, Project LASER—focused on improving college outcomes for students in Hispanic Serving Institutions |
| 2017-2022 | Editorial Board, Physical Review—Physics Education Research |
| 2016-2019 | Advisory Board, ACCESS Network, NSF Grant—focused on more inclusive, accessible, and equitable university environments for undergraduate and graduate students |
| 2017-2019 | Advisory Board, University of California, Berkeley PLANS—focused on NGSS-style curriculum |
| 2013-2018 | Advisory Board, Florida International University, Project INSPIRE—Focused on creating communities and supporting students in a minority serving institution |
| 2013-2018 | Advisory Board, NSF funded Assessing, Validating, and Developing Content Knowledge for Teaching Energy, Collaborative Grant: Rutgers University, Seattle Pacific University, University of Maine, and FACET Innovations. |
| 2012-2014 | Advisory Board: NSF funded: Investigating Instructional Influences on the Productivity of Clicker Discussions, University of Colorado, Boulder |
| 2010-2012 | Advisory Board for IDEA Institute, University of Michigan |
| 2012-2015 | Editorial Board, *Effective Practices in Preservice Physics Teacher Education: Recruitment, Retention, and Preparation*, E. Brewe & C. Sandifer (Eds.), American Physical Society and American Association of Physics Teachers (Peer-reviewed book to be published in 2015). |
| 2011-2013 | National Research Council Committee on Undergraduate Physics Education and Undergraduate Physics Education Research, The National Academies Division of |

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| | Engineering and Physical Sciences, Board of Physics and Astronomy (Report to be published 2013). |
| 2008-2013 | National Task Force for Teachers Education in Physics, American Physical Society, the American Institute of Physics, and the American Association of Physics Teachers, NRC (2013) report. |
| 2010-2015 | Associate Editor for Journal of Research in Science Teaching |
| 2007-2011 | Editorial Board, *Teacher Education in Physics: Research, Curriculum, and Practice,* D. Meltzer and P. Shaffer (Eds.), American Physical Society and American Association of Physics Teachers*,* (2011). |
| 2009-2012 | The Leadership Team—Association of Public and Land Grant Universities, with Interim Provost Stein Sture, Provost Russ Moore, Chancellor Phil DiStefano. |
| 2009, Dec. | Resource Expert, Race to the Top STEM event sponsored by the National Governors Association to help over 30 states prepare their proposals. |
| 2011-2014 | Editorial Board, American Journal of Physics |
| 2010- | NASA Education Forum Consultant, Cape Canaveral FL.—Advised NASA on Educational issues and programs focused on students from underserved communities |
| 2008-2010 | Advisory board for NSF-funded Learning Progressions in Physical Science Project, San Diego State University and University of Maryland |
| 2009-2010 | Advisory board for the Mathematics Learning Assistant Implementation at Florida International University, Miami, FL. |
| 2006-2008 | Advisory Board Member for NSF-funded grant for Graduate TA Training at the University of Maryland. |
| 2006-2014 | Advisory Board for the Physics Teachers Education Coalition |
| 2001-2014 | Advisor, Denver Area Mathematics, Engineering, & Science Achievement Program |
| 2006-2010 | Committee on Research In Physics Education, Amer. Association of Physics Teachers |
| 2006-2010 | Physics Education Research Leadership Organizing Council-Secretary |

***Campus Professional Activity***

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|---|---|
| 2025-present | Boulder Faculty Assembly (BFA) IT Security Standards Working Group |
| 2024-present | School of Education Ad Hoc Budget Committee, Chair |
| 2023-present | Boulder Faculty Assembly (BFA) Budget Committee |
| 2022-present | Large Enrollment Initiative, Member |
| 2021-present | Buff Undergraduate Success Leadership Implementation Committee, Member |
| 2020-present | Provost's Grievance Committee, Chair |
| 2013-present | McCray Scholarship Program, Chair |
| 2017-present | Institute of Cognitive Science, Fellow |
| 2017-present | Center for Native American and Indigenous Studies, Member |
| 2004-present | Adelante: Chicano Faculty and Staff Association, Member |
| 2021-2022 | Provost's Campus Assessment Steering Committee, Member |
| 2020-2021 | Campus Master Plan Committee, Member |
| 2019-2020 | Boulder Campus Academic Futures Interdisciplinary Task Force, Member |
| 2016-2020 | Space Minor Steering Committee, Member |
| 2018-2019 | Vice Chancellor's Advisory Council (Tenure and Promotion Committee at CU) |
| 2017-2019 | Foundations of Excellence, Learning Dimension, Chair |
| 2017-2019 | Foundations of Excellence, Steering Committee |
| 2014-2016 | Grand Challenge Steering Committee, Member |
| 2014-2018 | Leadership Minor Steering Committee, Member |
| 2014-2015 | Campus Committee on the Transformation of Classroom Space, Member |
| 2010, August | Chancellor's Convocation-Speaker |
| 2010, May | Chancellor's Serving Colorado Tour, Faculty Representative |

2009-2010 Co-Director Integrating STEM project, Boulder, CO.

***Curriculum Materials***

***Belleau, S***., ***Quinty, E.,*** & Otero, V. (2018, copyright). *Physics through Evidence, Empowerment through Reasoning Suite.*

Goldberg, F., Robinson, S., Kruse, R., Thompson, N., & Otero, V. (2007). *Physical science and everyday thinking: Curriculum, software, and video case studies*. Armonk, NY: It's About Time.

Goldberg, F., Robinson, S., & Otero, V. (2006, 2008). *Physics and Everyday Thinking: Curriculum, software, and video case studies*. Armonk, NY: It's About Time.

Goldberg, F., Heller, P., Morse, R., Minstrell, J., Hickman, P., Hickman, J., McKinley, A., Faletti, J., Otero, V., Johnson, A., & McCullough, L. (2000). *Constructing physics understanding in a computer-supported collaborative learning environment—CPU software and activities,* Armonk, NY: The Learning Team.

***Works in Progress***

**Top, L.** and Otero, V. (in preparation). Beyond pedagogical content knowledge: Learning Assistants facilitate social and academic integration.

Otero, V. and Meltzer, D. (in preparation). Like science, teaching is never finished: Knowledge generation and ongoing growth among secondary teachers.

Otero, V., **Fine, C. and Lindsay, W.** (in preparation). Epistemic conflict among previously successful STEM students in learner-centered environments.

***Peer-Reviewed Conference Proceedings***

**Mitchell-Polka, K., Lindsay, W., Martins, J.** and Otero, V. (2020). The physics classroom as a space for empowerment, in S. Wolf, M. Bennet, B. Frank (Eds.) *2020 Physics Education Research Conference Proceedings,* 340-345, https://doi.org/10.1119/perc.2020.pr.Mitchell-Polka

**Lindsay, W.E.,** & Otero, V.K. (2020). The possibilities and limitations of infrastructuring with a no-excuses charter network. *Proceedings of the 14th International Conference of the Learning Sciences* [Virtual Conference, June 19-24, 2020], edited by M. Gresalfi and I.S. Horn.

**Lindsay, W.E.** & Otero, V.K. (2019, April) *Institutional Tensions Surfaced by Pedagogical Reform: NGSS Implementation in a "No-Excuses" Context.* Paper presented at the annual meeting of the American Educational Research Association, Toronto, CA.

**Lindsay, W.E.** & Otero, V.K. (2019, April) *The Influence of Institutional Elements in Reforming.* Paper presented at the annual meeting of the National Association of Research on Science Teaching, Baltimore, MD.

**Lindsay, W., Belleau, S.,** & Otero, V. (2018). PEER Suite: A holistic approach to supporting inductive pedagogy implementation, in L. Ding, A. Traxler, and Y. Cao (Eds.), *2018 Physics Education Research Conference Proceedings,* AIP Press:Melville, NY http://dx.doi.org/10.1119/perc.2018.pr.Lindsay

**Alzen, J**., Langdon, L., & Otero, V. (2018). The Learning Assistant Model and DWF rates in introductory physics, in L. Ding, A. Traxler, and Y. Cao (Eds.), *2017 Physics Education Research Conference Proceedings,* AIP Press:Melville, NY, 36. http://dx.doi.org/10.1119/perc.2017.pr.004

**Van Dusen, B., Langdon, L. &** Otero, V**.** (2016). Learning Assistant Supported Student Outcomes (LASSO) study initial findings, in A. Churukian, D. Jones, and L. Ding (Eds), 2015 PERC Proceedings, AIP Press: Melville, NY, 343.

**Ross, M., Van Dusen, B.,** & Otero, V. (2014). Becoming Agents of Change through Participation in a Teacher-Driven Professional Research Community, in Proceedings for the 2014 International Conference of the Learning Sciences, Boulder, CO, June 22-27.

**Suarez, E**. & Otero, V. (2014). Leveraging the Cultural Practices of Science for Making Discourse Accessible to Emerging Bilingual Students, in Proceedings for the 2014 International Conference of the Learning Sciences, Boulder, CO, June 22-27.

***Belleau, S.*** & Otero, V. (2013). Scientific Practices: Equalizing Opportuities for Linguistically Diverse Students, in P. Engelhardt, A. Churukian, D.L. Jones (Eds.), *2013 Physics Education Research Conference Proceedings,* AIP Press:Melville, NY.

***Grimes**,* A. & Otero, V. (2013). The Effects of Flexibility on Homework Completion and Student Performance, in P. Engelhardt, A. Churukian, D.L. Jones (Eds.), *2013 Physics Education Research Conference Proceedings,* AIP Press:Melville, NY.

***Nicholson-Dykstra, S.,* Van Dusen, B**. & Otero, V. (2013). Teaching to Learn: iPads as Tools for Transforming Physics Students' Roles, in P. Engelhardt, A. Churukian, D.L. Jones (Eds.), *2013 Physics Education Research Conference Proceedings,* AIP Press:Melville, NY.

**Suarez, E**. & Otero, V. (2013). Physics as a Mechanism for Including ELLs in Classroom Discourse, *2013 Physics Education Research Conference Proceedings.* Melville, NY.

**Ross, M**. & Otero, V. (2012). Challenging Traditional Assumptions of Secondary Science through the PET Curriculum, in S. Rebello, P. Engelhardt, & A. Churukian (Eds.), *2012 Physics Education Research Conference Proceedings.* Melville, NY: AIP Press.

**Suarez, E**. & Otero, V. (2012). "Because it hibernates faster": 3rd grade English Language Learners making sense of sound, in S. Rebello, P. Engelhardt, & A. Churukian (Eds.), *2012 Physics Education Research Conference Proceedings.* Melville, NY: AIP Press.

**Van Dusen, B**. & Otero, V. (2012). Influencing high school students' relationships with physics through culturally appropriate tools, in S. Rabelo, C. Singh, & P. Engelhardt (Eds.) *2012 Physics Education Research Conference Proceedings.* Melville, NY: AIP Press.

***Belleau, S.*** & Otero, V. (2012). Critical Classroom Structures for Empowering Students to Participate in Scientific Discourse, in S. Rebello, P. Engelhardt, & A. Churukian (Eds.), *2012 Physics Education Research Conference Proceedings.* Melville, NY: AIP Press.

**Barr, S., Ross, M**., & Otero, V. (2012). Using Artifact Methodology to Compare Learning Assistants' and Colleagues' Classroom Practice, in S. Rabelo, C. Singh, & P. Engelhardt (Eds.) *2011 Physics Education Research Conference Proceedings.* Melville, NY: AIP Press, 119-122.

***Belleau, S.*, Ross,** M., & Otero, V. (2012). Implementation of Physics and Everyday Thinking in a High School Classroom: Concepts and Argumentation, in S. Rabelo, C. Singh, & P. Engelhardt (Eds.) *2011 Physics Education Research Conference Proceedings.* Melville, NY: AIP Press.

**Gray, K.,** Webb, D., & Otero, V. (2012) Effects of the Learning Assistant Experience on In-Service Teachers' Practices, in S. Rabelo, C. Singh, & P. Engelhardt (Eds.) *2011 Physics Education Research Conference Proceedings.* Melville, NY: AIP Press, pp.199-202.

**Ross, M. Van Dusen, B., *Sherman, S.*** & Otero, V. (2012). Teacher-Driven Professional Development and the Pursuit of a Sophisticated Understanding of Inquiry, in S. Rabelo, C. Singh, & P. Engelhardt (Eds.) *2011 Physics Education Research Conference Proceedings.* Melville, NY: AIP Press.

**Van Dusen, B.** & Otero, V. (2012). Changing Roles and Identities in a Teacher-Driven Professional Development Community, in S. Rabelo, C. Singh, & P. Engelhardt (Eds.) *2011 Physics Education Research Conference Proceedings.* Melville, NY: AIP Press.

Otero, V. (2010). Science Learning as the Objectification of Discourse, *International Conference of the Learning Sciences,* June 28-July 2, 2010, Chicago, IL.

**Gray, K.,** Webb, D. & Otero, V. (2010). Are Learning Assistants Better K-12 Science Teachers? In C. Henderson, M. Sabella, & C. Singh (Eds.) *2009 Physics Education Research Conference Proceedings.* Melville, NY: AIP Press.

Otero, V. (2009). Evolution of Theoretical Perspectives in my Research. In C. Henderson, M. Sebella, & C. Singh (Eds.) *2009 Physics Educ. Research Conference Proceedings.* Melville, NY: AIP Press.

**Gray, K.** & Otero, V. (2009). Analysis of former Learning Assistants' Views on Cooperative Learning. In C. Henderson, M. Sabella, & C. Singh (Eds.) *2009 Physics Education Research Conference Proceedings.* Melville, NY: AIP Press.

**Gray, K.** & Otero, V. (2008). Analysis of Learning Assistant's Views of Teaching and Learning. McCullough, L. Hsu & P. Heron, (Eds.) *2008 Physics Education Research Conference Proceedings.* Melville, NY: AIP Press.

Otero, V., & **Gray, K.** (2007). Learning to think like scientists with the PET curriculum. In L. McCullough, L. Hsu & P. Heron, (Eds.), *2007 Physics Education Research Conference Proceedings.* Melville, NY: AIP Press,160-163.

Finkelstein, N., **Turpen, C.,** Pollock, S., Dubson, M., ***Iona, S.,* Keller, C.,** & Otero, V. (2006). Evaluating a model of research-based practices for teacher preparation in a physics department: Colorado PhysTEC. In P. Heron, L. McCullough, & J. Marx (Eds.), *2005 Physics Education Research Conference Proceedings.* Melville NY: AIP Press, 3-6.

**Harlow, D.** & Otero, V. (2007). Beyond Concepts: Transfer from inquiry-based physics to elementary classrooms., In L. McCullough, L. Hsu, and P. Heron (Eds.), *2006 Physics Education Research Conference Proceedings.* Melville NY: AIP Press, 73-76.

**Harlow, D.,** & Otero, V (2006). Talking to learn physics and learning to talk physics. In P. Heron, L. McCullough, & J. Marx (Eds.), *2005 Physics Education Research Conference Proceedings.* Melville NY: AIP Press, 53-56.

**Harlow, D**., & Otero, V. (2005). Learning physics by listening to children. In J. Marx, P. Heron, & S. Franklin (Eds.), *2004 Physics Education Research Conference Proceedings.* Melville, NY: AIP Press, 105-108.

Otero, V. (2004). Cognitive processes and the learning of physics, Part I: The evolution of knowledge from a Vygotskian perspective. In E. F. Redish & M. Vicentini (Eds.), *Proceedings of the International School of Physics "Enrico Fermi" Course CLVI*, *Italian Physical Society* (pp. 409-445). Amsterdam: IOS Press.

Otero,V. (2004). Cognitive processes and the learning of physics. Part II: Mediated action. In E. F. Redish & M. Vicentini (Eds.), *Proceedings of the International School of Physics "Enrico Fermi" Course CLVI*, *Italian Physical Society* (pp. 446-471). Amsterdam: IOS Press.

Goldberg, F., & Otero, V. (2001). The roles of laboratory and computer simulator experiments in helping students develop a conceptual model of static electricity. In D. Psillos, P. Kariotoglou, V. Tselfes, G. Bisdikian, G. Fassoulopoulos, E. Hatzikraniotis, & M. Kallery (Eds.), *Proceedings of the Third International Conference on Science Education Research in the Knowledge-Based Society* (pp. 29-31). Thessaloniki: Art of Text.

Niedderer, H., Fischer, H., Goldberg, F., Jorde, D., Hucke, L., Otero, V., Sander, F., Slotta, J., Strømme, A., Tiberghien, A., & Vince, J. (2003). Research about the use of information technology in science education. In D. Psillos et al. (Eds.), *Science education research in the knowledge-based society* (pp. 309-322). Dordrecht: The Netherlands: Kluwer.

**Harlow, D.,** & Otero, V (2004). An examination of children's scientific argumentation. In J. Marx, S. Franklin, & K. Cummings (Eds.), *2003 Physics Education Research Conference Proceedings.* Melville, NY: AIP Press, 145-148.

Otero, V. & Nathan, M. (2004). "After I gave students their prior knowledge…" Pre-service teachers' conceptions of students' prior knowledge. In J. Marx, S. Franklin, & K. Cummings (Eds.), *2003 Physics Education Research Conference Proceedings.* Melville, NY: AIP Press, 141-144.

Otero, V., & Nathan, M. (2003). Elementary pre-service teachers' conceptions of students' prior knowledge. In K. Cummings, J. Marx, & S. Franklin (Eds.), *2002 Physics Education Research Conference Proceedings*. Melville, NY: AIP Press, 123-128.

***Selected Conference Proceedings and Presentations***

Otero, Adelmann, Johnson, Schick (2025). Undergraduate Learning Assistants as Co-Designers of Educational Environments, presented at the AAC&U Conference on Learning and Student Success, April, 2025.

Johnson, Otero, Adelmann, Schick (2025). Rehumanizing Education: The Learning Assistant Model, presented at the AAC&U Conference on Learning and Student Success, April, 2025

Otero, V. and ***Belleau, S.*** (2023, March). Fostering collaboration and inclusion, presented at the annual meeting for the National Science Teachers Association, Atlanta, GA, March.

Otero, V. and ***Quinty, E.*** (2023, March). Engaging students in rich discourse, presented at the annual meeting for the National Science Teachers Association, Atlanta, GA, March.

Otero, V. ***Quinty, E.*** (2022). Science Practices and Inclusion in Elementary School Science, Colorado Science Conference, Castle Rock, CO, November 5, 2022.

**Lindsay, W.E.,** & Otero, V.K. (2020). The possibilities and limitations of infrastructuring with a no-excuses charter network. *Proceedings of the 14th International Conference of the Learning Sciences* [Virtual Conference, June 19-24, 2020], edited by M. Gresalfi and I.S. Horn.

Otero, V. and ***Belleau, S.*** (2018, July). Transforming courses, Engaging Teachers, and Assessing Multiple Dimensions with the PEER Suite, presented at the meeting of the American Association of Physics Teachers Summer Meeting, July 27-August 1, Washington, D.C.

***Belleau, S.*** and Otero, V. (2018, July). Three-Dimensional Assessment in High School Physics, presented at the meeting of the American Association of Physics Teachers Summer Meeting, July 27-August 1, Washington, D.C.

**Van Dusen, B**., **Ross, M**., & Otero, V. (2012, March). Changing Identities and Evolving Conceptions of Inquiry through Teacher-Driven Professional Development, paper presented at the annual meeting of the National Association of Research on Science Teaching, March 25-28, Indianapolis, Indiana.

**Barr, S.**, **Ross, M.,** &Otero, V. (April, 2011). *Relating Classroom Artifacts to the Nature of Classroom Practice Using the Scoop Notebook*. Paper presented at the Annual Meeting of the American Education Research Association. New Orleans, LA.

**Gray, K. Barr, S**., & Otero, V. (April, 2011). *Influence of the Learning Assistant Experience on Teachers' Views of Assessment and Construction of Knowledge*. Paper presented at the Annual Meeting of the American Education Research Association. New Orleans, LA.

**Gray, K.** Webb, D., & Otero, V. (April, 2011). *The Influence of the Learning Assistant Experience on Teachers' Classroom Practice During the Induction Years*. Paper presented at the Annual Meeting of the American Education Research Association. New Orleans, LA.

**Her Many Horses, I., Lee, M.**, & Otero, V. (April, 2011). *The Relationship Between School Context and Novice Teachers' Views of Students*. Paper presented at the Annual Meeting of the American Education Research Association. New Orleans, LA.

***Memberships Professional Societies***

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|---|---|
| 2001-present | American Physical Society |
| | American Association of Physics Teachers |
| | American Association of the Advancement of Science |
| | National Science Teachers Association |
| | Physics Teacher's Education Coalition |
| 2001-2015 | American Education Research Association |
| | National Association for Research in Science Teaching |

***Ad-Hoc Reviewer:***

- *Journal of Higher Education*
- *American Educational Research Journal*
- *Journal of Teacher Education*
- *Physics Review—Physics Education Research*
- *American Journal of Physics*
- *Review of Educational Research*
- *Journal of Research in Science Teaching*
- *Physics Education Research Conference Proceedings*

**Current PH.D. ADVISEES (2025)**

Ramadhan Hamisi, University of Colorado Boulder
Laura (Catalina) Arboleda Hernandez, University of Colorado Boulder
Taylor Fallik, University of Colorado Boulder

**Current Post-Doctoral Scholars and Mentees**

Betsy McIntosh, School of Education, University of Colorado Boulder
Laurie Langdon, School of Education, University of Colorado Boulder
Shelly Belleau, PEER Physics, University of Colorado Boulder
Emily Quinty, PEER Physics, University of Colorado Boulder
Julian Martins, University of Colorado Boulder

**Former Doctoral Students:**

William Lindsay: Teaching Professor and Co-Director of CU Teach, CU Boulder (Graduated 2020)
Laken Top: Instructor, Front Range Community College (Graduated 2019)
Enrique Suárez, Associate Professor, STEM Ed., University of Nebraska, Amherst (Graduated 2017)
Ian Her Many Horses: Teaching Professor and Co-Director of CU Teach, CU Boulder (Graduated 2016)
Ben Van Dusen: Associate Professor, STEM Education, Iowa State University (Graduated 2014)
Mike Ross: Physics Teacher, Centaurus High School, Colorado (Graduated 2013)
Kar Gray, Professor, Dept. of Physics, Seattle Pacific University (Graduated 2013)
Robert (Bud) Talbot: NSF Program Officer, Assoc. Prof., University Colorado, Denver (Graduated 2011)
Danielle Harlow, Professor and Associate Dean, Univ. California, Santa Barbara (Graduated, May 2007)
Derya Cobanoglu, Professor of Science Education and Physics, Turkey (Graduated, December 2006)
Andrea Pascarella: Educational Technology Product Leader at Amazon (Graduated, May 2004)

**REFEREED CONFERENCE PRESENTATIONS**

**Van Dusen, B., Ross, M.,** & Otero, V. (2012). Changing Identities and Evolving Conceptions of Inquiry through Teacher-Driven Professional Development, paper presented at the annual meeting of the National Association of Research on Science Teaching, March 25-28, Indianapolis, Indiana.

Otero, V., Webb, D., **Talbot, R.,** Moin, L., **Gray, K.,** Finkelstein, N. (2009). A longitudinal study of pedagogical content knowledge: content, pedagogy, and practice. Presented at the annual meeting of the National Association of Research on Science Teaching, April 19, Garden Grove, CA.

**Talbot, R.** & Otero, V. (2009). Learning Progression to Describe Teacher Development, Presented at the annual meeting of the American Education Research Association, April 14, San Diego, CA.

Otero, V., ***Jalovec, S.,*** **Her Many Horses, I.** (2008). Evolution of Students Model Building Practices. Presented at the annual meeting of the National Association of Research in Science Teaching, Baltimore, MD, April 2008.

Demir, A., Czerniak, C., Abd-El-Khalick, F., Moin, L., & Otero, V. (2008). Recruitment of science and mathematics teachers: National and International Perspectives and Issues on Policies. Evolution of Students Model Builiding Practices. Paper presented at the annual meeting of the National Association of Research in Science Teaching, Baltimore, MD, April 2008.

Otero, V. (2006). Recruiting talented mathematics and science majors to careers in teaching: A collaborative effort for K-16 educational reform. Paper presented at the National Association for Research in Science Teaching, San Francisco, CA

**Geil, K.,** Briggs, D., **Harlow, D.,** & Otero, V. (2006, April). *Measuring sophistication of beliefs about teaching and learning*. Paper presented at the annual meeting of the American Education Research Association, San Francisco, CA.

Otero, V. (2005). *"After I gave students their prior knowledge..." Pre-service elementary teachers' conceptions of students' prior knowledge.* Paper presented at the annual meeting of the National Association of Research on Science Teaching, Dallas, TX.

Otero, V. (2005)**.** *When cognitive meets socio-cultural theory: Evolution of conceptual models leads to evolution of the learning environment and vice versa*. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Dallas, TX.

Otero, V., & **Harlow, D.** (2005, April). *Classroom contexts and curricula for helping teachers develop identities as "science people."* Paper presented at the annual meeting of the National Association for Research in Science Teaching, Dallas, TX.

Otero, V., & Nathan, M. (2003). *Elementary pre-service teachers' initial and changing views about students' prior knowledge and collaborative learning*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

Otero, V. (2001). *The role of computer simulators in students' construction of explanatory models of static electricity.* Paper presented at the annual meeting of the National Association for Research in Science Teaching, St. Louis, MO.

Monaghan, J. M., Otero, V., Goldberg, F., & Johnson, A. (2000). *An analysis of the Constructing Physics Understanding (CPU) science teaching methodology from multiple perspectives*. Paper presented at the annual meeting of the American Educational Research Assoc., New Orleans, LA.

**K-12 OUTREACH AND COLLABORATIONS**

Streamline to Mastery and Teacher Research Teams, Executive Director (2009-2018)

Centro Latino Americano Para Las Artes, Ciencia Y Educatión (CLACE) (2010-2013)

Vamos Buffalos (April, June, 2010). *Recruitment and College Information for High School.*

I Have A Dream (June 2010). *Recruitment and Empowerment of K-12 Local Students*

Home to Colorado (January, 2010). *Recruitment of Alumni to Graduate School*

Mathematics, Engineering, and Science Achievement (MESA) (2007-2008): Program Evaluation with graduate student Robert (Bud) Talbot and Michael Ross.

Magnetism and Electricity for Elementary Teachers (2006): 15-week professional development workshop for third- and fourth-grade teachers, St. Vrain Valley School District, Longmont, CO.

Young Environmental Stewards Program Evaluation (2003-2004). Program Evaluation with graduate student Eric Snow, Catamount Institute, Colorado Springs, CO.

Mathematics, Engineering, and Science Achievement (MESA) (2002-2003): Constructing Physics Understanding for Second- and Third-Grade Females and Minorities, Columbine Elementary School, St. Vrain Valley School District, Longmont, CO.