Curriculum Vita: Steven J. Pollock (Fall 2008)

Associate Professor with Tenure
Department of Physics, University of Colorado, Boulder
UCB 390, Boulder CO steven.pollock@colorado.edu 303-492-2495

Education:

Stanford University, Ph.D. in Physics (1984-1987)
Ph.D. Thesis: "Electroweak Interactions in the Nuclear Domain"
Stanford University, M.S. in Physics (1982-1984)
Massachusetts Institute of Technology, B. Sc. in Physics (1978-'82)

Academic Positions:

Associate Professor with Tenure, Dep't of Physics, CU Boulder (Aug 2000-present)
Assistant Professor, Dep't of Physics, CU Boulder (Aug 1993-Aug 2000)
Senior Scientists, NIKHEF-K (National Institute for Nuclear and High Energy Physics), Amsterdam Netherlands (Jan 1993-Aug 1993)
Postdoctoral Fellow, Institute for Nuclear Theory, Seattle WA (1990-1992)
Postdoctoral Fellow, NIKHEF-K, Amsterdam Netherlands (1988-1990)

Honors:

CU President's Teaching Scholar award, 2008
CU Sigma Pi Sigma Favorite Physics Professors, 2007, 2005,
CU "Best Should Teach" gold award, Aug 2006.
Marinus Smith Award (CU Parents Assoc) Mar 2006
CU Sigma Pi Sigma, Outstanding Physics Professor, 2006
Boulder Residence Life Academic Teaching Award, 2006, 2004
Co-recipient: CU Boulder President's Faculty Excellence Award for Advancing Teaching and Learning through Technology 2004
University of Colorado ATLAS Fellow 2004
CU FTEP Summer teaching project recipient ($3,000 each year) 2003-2005.
Pew-Carnegie Teaching Scholar Award, 2001-2002
BFA Teaching Excellence Award, CU Boulder, 1998
Invited participant, Nat'l Academy of Sciences Symposium on Frontiers of Science, 1994
Alfred P. Sloan Research Fellowship, 1994
Junior Faculty Development Award, CU Boulder, 1994
NSF/NATO Postdoctoral Fellow, 1993

Creative work:

"The Great Ideas of Classical Physics" (Teaching Company, 2006)
"Particle Physics for Non-scientists: A tour of the Microcosmos" (Teaching Company, 2002)
“Thinkwell Physics I” (Thinkwell, 2001)

Additional Information:

http://per.colorado.edu/pollock

Grants:

• Co PI (w. V. Otero) on NSF DUE-0833258, "STEM Colorado/Noyce Teacher Scholarship Program" $500,000 (2008-2010)

• Co PI (w. K. Perkins) on NSF DUE-0737118 "Using a Research-based Approach to Reform Upper-division Quantum I and E&M I", $150,000 (2008-2009)

• Co PI (w. V. Otero) on NSF ESI TPC -0554616 "Learning Assistant Model of Teacher Education in Science and Technology") $2,493,149 (2006-2009)

• Co PI (w. N. Finkelstein) on APS PhysTec grant (~$100,000/yr) (2004-2008)

• Co PI (w. N. Finkelstein) on NSF DUE-0410744 "Implementing Tutorials Sustainably: Restructuring Undergrad. Recitations and Labs in Intro. Physics" $179,587 (2004-06)

• Co Pi (w. N. Finkelstein) CU LEAP program, "Preparing Graduate Students and Postdoctoral Researcher Professionally." Total award ~$8000 (25% Graduate RA) 1/1/04-6/1/04.

• NSF support (observer status) 2003 Fermi School on Physics Education Research

• CO PI on US Department of Energy, Award DE-FG03-93ER-40774, "Theoretical Nuclear Physics" (Continuous awards from 1993-2005)

Synergistic activities:

Member, Physics Education Research group. Implementing and investigating established curricular and pedagogical reforms in large lecture courses. Implementing "Tutorials in introductory physics", with graduate TA training, and use of undergraduate Learning Assistants. Grad students from the School of Ed are involved in researching this implementation effort. Worked with PhET program to assess use of simulations in tutorials. Participant in Pew/Carnegie teaching scholars program. Colorado physics liason to PhysTEC (physics teacher's education coalition). Active participant in the American Association of Physics Teachers and the International Society for the Scholarship of Teaching and Learning, CU Graduate Teacher Program, and Faculty Teaching Excellence Program.

Thesis advisor and postgraduate scholar advisor

Postdoctoral associates: Stephanie Chasteen (PER), Steven Goldhaber (PER), Velco Dmitrasinovic (nuclear), Frank Lee (nuclear), Horst Mueller (nuclear)

Graduate Students (research assistants): Lauren Kost (current, PhD, PER), Marc Welliver (PhD, nuclear), Chris Keller (Masters, PER), *Coadviser for* Noah Podolefsky (PhD, PER), Pat Kohl (PhD, PER)

Recent refereed journal articles in the field of physics education research.

"Characterizing the gender gap in introductory physics", L. Kost, S. Pollock, N. Finkelstein, submitted to *Physical Review ST-PER (under review)*

"Sustaining educational reforms in introductory physics", Steven J. Pollock and Noah D. Finkelstein, Physical Review . *Physical Review ST-PER* **4**, 010110 (2008)

"Reducing the gender gap in the physics classroom: How sufficient is interactive engagement?", S. Pollock, N. Finkelstein, L. Kost, *Physical Review ST-PER* **3**, 010107 (2007)

"Who Is Responsible for Preparing Science Teachers?" Valerie Otero, Noah Finkelstein, Richard McCray, and Steven Pollock, *Science* **28** July 2006: 445-446.

"Replicating and Understanding Successful Innovations: Implementing Tutorials in Introductory Physics", N. Finkelstein, S. Pollock, *Phys. Rev. ST PER* **1**, 010101 (2005).

"Understanding Student Disengagement in Peer-Instruction Classroom", S. Pollock, *Nuovo Cimente*: Proceedings of the 2003 Fermi School on PER, ed. E.F. Redish and M. Vicentini, IOS press 2004, pp. 635-649

Recent refereed articles in conference proceedings and newsletters in the field of physics education research, (Note: *Physics Education Research Conference proceedings serve as a central publication venue in the research field of PER)*

"A comparison of two researched-based conceptual surveys: CSEM and BEMA", S. Pollock, *Physics Education Research Conference proceedings,* Edmonton, Ontario Canada, Aug 08

"The Persistence of the Gender Gap in Introductory Physics", L. Kost, S. Pollock, N. Finkelstein, *Physics Education Research Conference proceedings,* Edmonton, Ontario Canada, Aug 08

"Assessing Student Understanding in Upper Division Undergraduate E&M I", S. Chasteen, S. Pollock, *Physics Education Research Conference proceedings,* Edmonton, Ont Canada, Aug 08

"A Longitudinal Study of the Impact of Curriculum on Conceptual Understanding in E&M", S. Pollock, *Physics Education Research Conference proceedings,* Greensboro NC, Aug 07

"Investigating the Source of the Gender Gap in Introductory Physics", L. Kost, S. Pollock, and N. Finkelstein, *Physics Education Research Conference proceedings,* Greensboro NC, Aug 07

"Research-based practices for effective clicker use", C. Keller, N. Finkelstein, K. Perkins, S. Pollock, C. Turpen, M. Dubson, *Physics Education Research Conference proceedings,* Greensboro NC, Aug 07

"Teaching to Learn: The Colorado Learning Assistant program's impact on learning content", N. Finkelstein, Valerie Otero, and Steven J. Pollock, APS Forum on Education Spring 2007 Newsletter

"Sustaining Change: Instructor Effects in Transformed Large Lecture Courses", S. Pollock, N. Finkelstein, *Physics Education Research Conference proceedings*, Syracuse NY, Aug 06.

"Transferring Transformations: Learning Gains, Student Attitudes, and the Impacts of Multiple Instructors in Large Lecture Courses", S. Pollock, *Physics Education Research Conference proceedings*, Salt Lake City UT, August 05. AIP Press. Melville NY, 818 (2006).

"Evaluating a model of research-based practices for teacher preparation in a physics department: Colorado PhysTEC", N. Finkelstein, C. Turpen, S. Pollock, M. Dubson, S. Iona, C. Keller, and V. Otero. *Physics Education Research Conference proceedings*, Salt Lake City UT, August 05. AIP Press. Melville NY, 818 (2006).

"Assessing the effectiveness of a computer simulation in conjunction with Tutorials in Introductory Physics in undergraduate physics recitations", C. Keller, N. Finkelstein, K. Perkins, S. Pollock. *Physics Education Research Conference proceedings*, Salt Lake City UT, August 05, AIP Press. Melville NY, 818 (2006).

"CU Physics Education: Recruiting and Preparing Future Physics Teachers', N. Finkelstein et al., APS Forum on Education Spring 2005 Newsletter.

"Correlating Student Beliefs With Student Learning Using the CLASS", K. Perkins et al., PERC proceedings, Sacramento CA, 2004.

"Increasing Student Engagement in Large Classes: A Departmental Case Study", Steve Pollock and Kathy Perkins. APS Forum on Education Spring 2004 Newsletter,

"No single cause: learning gains, student attitudes, and the impacts of multiple effective reforms in a large lecture course", S. Pollock, PERC proceedings, Sacramento CA Aug 04.

"Assessing the Effectiveness of a Computer Simpulation in Conjunction with Tutorials in Introductory Physics in Undergraduate Physics Recitations", C. Keller, N. Finkelstein, K. Perkins, S. Pollock, PERC proceedings, Sacramento CA, Aug 2004

Invited talks in physics education research *(through summer 2008)*

- 2008, S. Pollock, L. Kost, N. Finkelstein, "Does PER-based instruction help underrepresented groups succeed, and how can it do so better?", Invited session, *Physics Education Research Conference,* Edmonton, Ontario Canada, Aug 2008
- 2008, S. Pollock, "Preparing Undergrads to Teach (Well): The Colorado Learning Assistant Model". Invited talk, American Physical Society meeting St. Louis, Mo., Apr 15 '08 Session X4
- 2006, S. Pollock, "Replicating Physics Education Reforms: How (and why) to keep a good thing going.", Invited Talk for American Physical Society meeting , Dallas, Tx, Apr '06
- 2006, S. Pollock and N. Finkelstein (presenter), "Sustainable and Scalable Reforms in Physics Education: Research Studies from Colorado PhysTEC". Invited Talk for American Physical Society, Baltimore MD, March '06.
- 2004, S. Pollock, "Building on a Base: Applying Physics Education Research to Physics Teaching", Invited featured presentation: International Scholarship of Teaching and Learning Conference, Bloomington (Oct '04)
- 2002, S. Pollock, "The Carnegie Scholars Program and the Scholarship of Teaching and Learning: Examples From the Disciplines", Invited Talk, 22nd Annual Lilly Conference on College Teaching"

Talks, seminars, colloquia, and professional workshop presentations in physics education research *(through summer 2008)*

- 2008, S. Pollock, N. Finkelstein, L. Kost, "Understanding the Gender Gap in Introductory Physics", talk W16, American Physical (APS) Society meeting, St. Louis, Mo., Apr 15 2008
- 2008, S. Pollock, "CSEM versus BEMA", poster, American Association of Physics Teachers' (AAPT) Summer meeting, July 19-23 2008, Edmonton, Alberta Canada
- 2008, S. Pollock, "A comparison of two research-based conceptual surveys: CSEM and BEMA", poster, American Association of Physics Teachers' Summer meeting, July 19-23 2008, Edmonton, Alberta Canada
- 2008, S. Pollock and N. Finkelstein, "The role of Data in Supporting Education Innovations", workshop, Physics Teacher Education Coalition National Conference (PhysTEC), Austin Texas, Mar 2008.
- 2008, K. Perkins, S. Pollock, et. al., "Using a Research-based Approach to Reform Upper-division Quantum I and E&M I", NSF Course Curriculum and Laboratory Improvement PI Conference, Washington DC Aug 2008.
- 2008, S. Chasteen, S. Pollock, "Assessing Student Understanding in Upper Division undergraduate E&M", poster, Physics Education Research Conference (PERC) meeting, July 24, 2008, Edmonton, Alberta Canada
- 2008, L. Kost, S. Pollock, N. Finkelstein, "The Persistence of the Gender Gap in Introductory Physics", poster, Physics Education Research Conference meeting, July 24, 2008, Edmonton, Alberta Canada Session
- 2008, L. Kost, S. Pollock, N. Finkelstein, "The Gender Gap in Introductory Physics", talk and poster, American Association of Physics Teachers' Summer meeting, July 19-23 2008, Edmonton, Alberta Canada Session
- 2008, S. Chasteen, S. Pollock, Darren Tarshis, Ward Handley, Paul Beale, "Transforming Upper-Division Undergraduate Electricity & Magnetism", talk, American Association of Physics Teachers' Summer meeting, July 19-23 2008, Edmonton, Alberta Canada Session
- 2008, S. Chasteen, S. Pollock, "Assessing Student Understanding in Upper Division undergraduate E&M"", poster, American Association of Physics Teachers' Summer meeting, July 19-23 2008, Edmonton, Alberta Canada

- 2008, S. Chasteen, S. Pollock, Darren Tarshis, Ward Handley, Paul Beale, "Reforming Upper-Division Undergraduate Electricity & Magnetism", poster, American Association of Physics Teachers' Summer meeting, July 19-23 2008, Edmonton, Alberta Canada

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- 2007, S. Pollock, N. Finkelstein, "Sustaining Educational transformation in physics", Poster, PhysTEC conference, Boulder CO, Spring 2007
- 2007, S. Pollock, N. Finkelstein, M. Dubson, "Addressing Gender Disparity in Introductory Physics Courses: Are existing reforms enough?" A21.00003, talk at APS March Meeting, Denver CO 2007
- 2007, S. Pollock, N. Finkelstein, "Sustaining Educational Innovation: engaging traditional faculty in transformed practices", A21.00004 talk at APS March Meeting, Denver CO 2007
- 2007, S. Pollock, N. Finkelstein, "Sustaining Educational transformations in physics", talk, PhysTEC national conference, Boulder CO Spring 07.
- 2007, S. Pollock, V. Otero . "The University of Colorado Learning Assistant Model". Workshop, at the annual meeting of the Physics Teacher Education Coalition, Boulder, CO. Mar 1-3, 2007.
- 2007, S. Pollock, V. Otero, N. Finkelstein, "Using Undergraduate Teaching Assistants to Improve Learning In Large-Enrollment Classes", talk/workshop, National Science Teachers Association National Conference, Nov 2007
- 2007, S. Pollock N. Finkelstein, "Replicating of Reforms in a Large-scale Lecture Environment", talk at Winter 2007 AAPT meeting, Seattle WA
- 2007, S. Pollock, L. Kost, N. Finkselstein, "Investigating the Source of the Gender Gap in Introductory Physics", poster, PERC (Physics Education Research Conference), Greensboro NC July 2007
- 2007, S. Pollock, "A Longitudinal Study of the Impact of Curriculum on Conceptual Understanding in E&M", poster, PERC (Physics Education Research Conference), Greensboro NC July 2007
- 2007, S. Pollock, N. Finkelstein, L. Kost, "Does interactive engagement reduce the gender gap in introductory physics?", poster, American Association of Physics Teachers National conference, July 2007, Greensboro NC
- 2007, Noah Finkelstein & S. Pollock, "Keeping a Good Things Going: What does sustaining reforms in physics mean?" poster at Winter 2007 AAPT meeting, Seattle WA
- 2007, V. Otero, S. Pollock, N. Finkelstein, P. Wolf, C. Fogle, "Transforming Undergraduate Physics: The Colorado Learning Assistant Program " poster for the NSBP (Nat'l Society for Black Physicists) in spring 2007
- 2007, V. Otero, S. Pollock et. al, "Large-enrollment STEM courses are transformed to be Transforming Undergraduate Physics: The Colorado Learning Assistant Program", poster, National Society for Black Physicists National Conference, Spring 2007
- 2007, Noah Finkelstein, Wendy Adams, Katherine Perkins, and Steven Pollock, "Attending to More than Content Mastery: assessing student Attitudes and Beliefs in our classrooms" Workshop, PhysTEC conference, Boulder CO Spring 07
- 2007, V. Otero, N. Finkelstein, S. Pollock, P. Wolf, C. Fogle, "Transforming undergrad physics: the Colorado Learning Assistant program", Poster, PhysTEC conference Boulder CO Spring 07
- 2007, V. Otero, S. Pollock, S. Iona, "Learning Assistant Model at Your University", workshop, PhysTEC National conference, Boulder CO March 07.
- 2007, K. Perkins et. al., "Correlating students' beliefs about physics with learning, retention, and recruitment", talk S21.00007, APS Meeting, Mar 2007, Denver CO
- 2007, K. Perkins. et al, "Studying the importance of students' beliefs in physics education ", poster K1.00205, APS Meeting, Mar 2007, Denver CO ,
- 2007, S. Simkins and S. Pollock, "Adapting Pedagogies Across Disciplines – What is the Potential, What are the Limitations?", talk, ISSOTL (International Society for the Scholarship of Teaching and Learning) conference (July 2007) Sydney Australia.
- 2007, V. Otero, S. Pollock, S. Iona, N. Finkelstein, "Learning Assistant Model at Your University." workshop, American Association of Physics Teachers, Greensboro, N. Carolina, July 28, 2007.
- 2007, C. Keller, N. Finkelstein, S. Pollock, C. Turpen "Towards a set of research-based best practices for clicker use", talk, AAPT (American Association of Physics Teachers) National conference, July 2007, Greensboro NC
- 2007, C. Keller, N. Finkelstein, S. Pollock, C. Turpen, "Towards Research-based Practices for Effective Clicker Use", poster, AAPT (American Association of Physics Teachers) National conference, July 2007, Greensboro NC,
- 2007, P. Wolf, N. Duncan, S. Pollock, N. Finkelstein, V. Otero, "Transforming Undergraduate Physics: The Colorado Learning Assistant Program" , poster, AAPT (American Association of Physics Teachers) National conference, July 2007, Greensboro NC

- 2007, R. Talbot, J. Schneider, D. Briggs, S. Pollock, "Measuring change with the force and motion conceptual evaluation: An item-level approach using item response theory", talk, American Educational Research Association Annual Meeting, Chicago, Apr. 07

- 2006, S. Pollock, N. Finkelstein, "Instructor Effects in Transformed Large Lecture Courses", Poster, *Physics Education Research Conference proceedings*, Syracuse NY, Aug 06.
- 2006, S. Pollock, M. Dubson, "Can the Lawson Test Predict Student Grades?", poster, AAPT (American Association of Physics Teachers) meeting, Syracus NY, July '06,
- 2006, S. Pollock, and N. Finkelstein, "Replicating and Maintaining Succssful Teaching Innovations,",,poster, AAPT (American Association of Physics Teachers) meeting, Syracus NY, July '06
- 2006, S. Pollock, K. Perkins, "The role of data in systemic change", Workshop for the International Society for the Scholarship of Teaching and Learning, Nov 2006
- 2006, S. Pollock, "Reconceptualizing Recitation", "Clickers in the Large Classroom", "CLASS: Attending to more than Content Mastery", Set of 3 workshops for the Center for Teaching Excellence, Kansas University, April 2006.
- 2006, S. Pollock, "Attending to More than Content Mastery: Assessing Student Attitudes and Beliefs in our Classrooms", workshop presented for the ASMCUE (American Society of Microbiologists: Conference for Undergraduate Educators)" conference, May 19-21 2006 (Orlando, FL)
- 2006, S. Pollock, N. Finkelstein, "Educational Reforms in Introductory Physics at Colorado: Replicability? Sustainability?", poster for the International Society for the Scholarship of Teaching and Learning, Nov 2006
- 2006, S. Pollock, "Building on a Base: Applying Physics Education Research to Physics Teaching", colloquium for CSU physics department, Fort Collins, Mar 2006
- 2006, S. Pollock, "Building on a Base: Applying Physics Education Research to Physics Teaching", colloquium for Kansas University physics department, April 2006.
- 2006, S. Pollock, "Replication and Sustainability of Reforms in Introductory Physics at CU", Poster: for AAPT conference on Achieving Systemic Changes in Physics Teaching at Leading Research Universities, College Park MD June 2-3 2006.
- 2006, S. Pollock, N. Finkelstein "Reforms in Introductory Physics: Replicating and Sustaining Successful Innovation", poster, PhysTEC annual conference ("Building Innovative Programs"), Fayetteville AR, Mar 06,
- 2006, C. Turpen, N. Finkelstein, and S. Pollock, "Sustaining Reform: A Qualitative Study of Professors Beliefs and Classroom Practices." Poster, AAPT National Meeting 2006.
- 2006, C. Turpen, N. Finkelstein, and S. Pollock, "Sustaining Reform: Professor's Beliefs and Classroom Practices", poster, Physics Education Research Conference, Syracuse NY July '06
- 2006, C. Keller, N. Finkelstein, K. Perkins, S. Pollock, "Effective Use of Computer Simulations in Undergraduate Laboratory Environments ", poster, Physics Education Research Conference, Syracus NY, July '06
- 2006, C. Keller, N. Finkelstein, S. Pollock, "Studying the Use of Computer Simulations in Undergraduate Laboratory Environments ", poster, AAPT (American Association of Physics Teachers) meeting, Syracus NY, July '06
- 2006, C. Keller, N. Finkelstein, S. Pollock, "Assessing the impact of Explicit Representations in Computer Simulations", poster, AAPT (American Association of Physics Teachers) meeting, Syracus NY, July '06
- 2006, R. Talbot (recipient of the NRMERA Distinguished Paper Award for 2006), J. Schneider, D. Briggs, S. Pollock, "Measuring Change with the Force and Motion Conceptual Evaluation: An Item-Level Approach using Item Response Theory", talk, Northern Rocky Mountain Educational Research Association Conference, Idaho, Oct 2006
- 2006, J. Schneider, R. Talbott, D. Briggs, S. Pollock, "Using the CLASS to Identify and Characterize Students with Negative Attitudes toward Physics", talk, Northern Rocky Mountain Educational Research Association Conference, Idaho, Oct 2006,
- 2006, N. Finkelstein, S. Pollock, "Sustainable and Scalable Reforms in Physics Education: Research Studies from Colorado PhysTEC", Invited Talk for American Physical Society, March 2006, Baltimore MD,

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- 2005, S. Pollock,"Assessing multiple research-based transformations in second semester physics.", Poster DI10 AAPT meeting, Aug '05 Salt Lake City,
- 2005, S. Pollock and N. Finkelstein, "Characterizing a Successful Secondary Implementation of Tutorials in Introductory Physics", talk, AAPT meeting, Aug '05 Salt Lake City

- 2005, S. Pollock, "Transferring Transformations: Learning Gains, Student Attitudes, and the Impacts of Multiple Instructors in Large Lecture Courses", poster CP42: Physics Education Research Conference, Salt Lake City Aug '05
- 2005, S. Pollock, "Measuring Impacts: an Assessment of Multiple Research-Based Transformations in Introductory Physics" , poster for International Society for the Scholarship of Teaching and Learning (ISSOTL) conference Vancouver (Oct 05)
- 2005, S. Pollock, N. Finkelstein, "Replicating Reforms: Characterizing a Successful Secondary Implementation of Tutorials In Introductory Physics", talk, ISSOTL conference Vancouver (Oct 05)
- 2005, S. Pollock, N. Finkelstein, K. Perkins, "Attending to More than Content Mastery: assessing student attitudes and beliefs in our classrooms", Workshop presentation, ISSOTL conference (Oct 05) Vancouver.
- 2005, S. Pollock and N. Finkelstein, "Assessing Student Attitudes and Beliefs in our Physics Classrooms", workshop, PhysTEC conference Muncie IN Mar 05
- 2005, S. Pollock, "Secondary Implementation of Tutorials", Physics Education Group Seminar, Univ. of Washington, Jan '05
- 2005, K. Perkins, W. Adams, S. Pollock, N. Finkelstein and C. Wieman, "Correlating students beliefs about physics with students learning using the Colorado Learning Attitudes about Science Survey (CLASS)", AAPT (American Association of Physics Teachers) meeting, Jan '05 Albuquerque
- 2005, C. Keller, N. Finkelstein, K. Perkins, S. Pollock, "Assessing the effectiveness of a computer simulation in conjunction with Tutorials in Introductory Physics in undergraduate physics recitations" PERC (Physics Education Research Conference), Salt Lake City Aug '05: poster CP26:
- 2005, Noah Podolefsky, N. Finkelstein, S. Pollock, "Johnny doesn't read (the textbook), and he's getting an A", poster, AAPT meeting, Aug '05 Salt Lake City
- 2005, Noah Podolefsky, N. Finkelstein, S. Pollock, "Suzie doesn't read (the textbook), and she's getting an A", contributed talk, AAPT meeting, Aug '05 Salt Lake City.
- 2005, M. Dubson, S. Pollock, N. Finkelstein, "Logistics of a Secondary Implementation of the Washington Tutorials", poster, AAPT meeting, Aug '05 Salt Lake City.
- 2005, C. Keller, N. Finkelstein, K. Perkins, S. Pollock. "Assessing computer simulations in Undergraduate Physics Lectures and Laboratories", talk, AAPT meeting, Aug '05 Salt Lake City
- 2005, C. Turpen, N. Finkelstein, M. Dubson, C. Keller, S. Pollock, ,S. Iona, V. Otero, "Evaluating a model of research-based practices for teacher preparation in a physics department: Colorado PhysTEC " poster, AAPT meeting, Aug '05 Salt Lake City
- 2005, N. Finkelstein, C. Turpen, S. Pollock, M. Dubson, S. Iona, C. Keller, V. Otero, "Coupling research and pre-service teacher preparation: The Colorado PhysTEC program", invited poster, TPA2, PERC (Physics Education Research Conference), Salt Lake City Aug '05
- 2005, K. Perkins, W. Adams, S. Pollock, N. Finkelstein, C. Wieman, "Correlating Students Beliefs about Physics with Learning, Retention, and Recruitment", poster, AAPT meeting, Aug '05 Salt Lake City
- 2005, N. Finkelstein, S. Pollock, V. Otero, M. Dubson, S. Iona, C. Keller, and C. Turpen, "The Colorado PhysTEC Program: a model for increasing the number and preparation of future STEM educators", poster, ISSOTL conference (Oct 05) Vancouver.
- 2005, S. Pollock, N Finkelstein, C Keller, C. Turpen, "Reforms in Introductory Physics Education: Assessing Colorado PhysTEC Goals", poster, PhysTEC conference, Muncie IN Mar '05.
- 2005, C. Keller, K. Perkins, S. Pollock, N. Finkelstein, "Assessing the effectiveness of computer simulations in undergraduate physics lectures and laboratories", poster, PhysTEC conference Muncie IN Mar 05,
- 2005, V. Otero, S. Pollock, S. Iona, "Recruiting Talented Science Majors to Careers in Teaching: Assessing CU's collaborative effort for K-16 educational reform", invited talk, PhysTEC conference Muncie IN Mar 05
- 2005, N. Podolefsky [award winner], N. Finkelstein, S. Pollock, "Suzie Doesn't Read", talk and poster, Four Corners Sectional Meeting of the APS, Boulder CO, Oct 2005,
- 2005, C. Keller [award winner], N. Finkelstein, K. Perkins, S. Pollock, "Assessing Computer Simulations in Undergraduate Physics Lectures and Laboratories", talk and poster, Four Corners Sectional Meeting of the APS, Boulder CO, Oct 2005,
- 2005, K. Perkins, W. Adams, S. Pollock, N. Finkelstein, C. Wieman, "Correlating Students' Beliefs About Physics with Learning, Retention, and Recruitment", talk and poster, Four Corners Sectional Meeting of the APS, Boulder CO, Oct 2005

- 2004, "Correlating student attitudes with student learning using the Colorado Learning Attitudes about Science Survey" Katherine Perkins, Wendy Adams, Steven Pollock, Carl Wieman, Noah Finkelstein, poster: CP-AI11, Physics Education Research Conference, Sacramento CA Aug '04.
- 2004, "Learning gains, student attitudes, and the impacts of multiple effective reforms in a large lecture course", Poster: CP-IP17, Physics Education Research Conference, Sacramento CA Aug '04
- 2004, "Assessing reform in large-lecture courses: learning gains and student attitudes.", poster, International Scholarship of Teaching and Learning Conference, Bloomington (Oct '04)
- 2004, "Assessing the Impact of Multiple PER-Based Reforms in Large-Lecture Classes", Poster in poster session EA19, AAPT meeting, Aug 2004
- 2004, "It Works for Me, Online", written contribution, Ed. Hal Blythe/Charlie Sweet, New Forums Press, 2004.

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- 2003, S. Pollock, "Student disengagement in large lecture peer-instruction", Poster in poster session PA19, American Association of Physics Teachers conference, Madison WI 2003
- 2003, S. Pollock, "Understanding Student Disengagement in Peer-Instruction Classrooms." , poster, Fermi Summer school on Physics Education Research, Varenna, Italy, 2003.

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- 2002, S. Pollock, Invited panel member, "Carnegie Fellow's Diversity Workshop", Nov 6/7 at Notre Dame.
- 2002, S. Pollock, "Examining student responses to peer instruction in large lectures", talk and paper for AAHE/CASTL meeting (American Assocation of Higher Education/Carnegie Academy for the Scholarship of Teaching and Learning) March 15-17, Chicago.
- 2002, Pew/Carnegie Teaching Scholar workshops, Written report, 18 pp, available at http://kml2.carnegiefoundation.org/html/poster.php?id=26)

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- 2001, S. Pollock, "Some Innovations in Teaching Physics", colloquium, Co. School of Mines,

Annual reports in physics education

2007-2008 Annual Report of LA-TEST, V. Otero, S. Pollock et. al.
http://stem.colorado.edu/la-program/reports-publications
2005-2008 Annual Report of Colorado PhysTEC Project", N. Finkelstein S. Pollock, et. al.
http://www.phystec.org/institutions/colorado-boulder/
2004-2007 Annual Report of NSF-CCLI: Implementing Tutorials Sustainably , N. Finkelstein, S. Pollock

Public outreach, and informal faculty or student talks *(through summer 2008)*

- 1996 to present : "Introduction to teaching for Physics Graduate TAs" (currently 2 day intensive workshops) Given annually in the fall.
- 2008, "A scientific Approach to Science Education", Utah State Science Faculty Retreat, Summer '08
- 2008, "Preparing Future Faculty for the Scholarship of Teaching and Learning", Graduate Teacher program annual Fall Intensive 2008
- 2008, "Physics education, and making the invisible visible", CU Family Weekend, Fa '08
- 2008, 'Tutorials in Introductory Physics - the CU approach", Colorado Science Education Network, 1.5 hr workshop.
- 2008, "The Science of Science Education", Astronomy graduate seminar, spring 2008
- 2008, "Whispers and Bangs", CU Wizard show, Spring '08
- 2007, CU Boulder Sampler wizard show/presentation for Admissions, 1 hr, Summer '07.
- 2007, "Learning about learning: Physics education research in action", CU Family WeekendFa '07
- 2007, "Physics Education Rseaerch in Action", CU Saturday Physics Series
- 2007, "LA program at CU: research results", Seminar for CU STEMP-TP/PER research group meeting
- 2007, "Discipline Based Education Research", Seminar for CU STEMP-TP DBER meeting, 2 presentations
- 2007, "Preparing Future Faculty for the Scholarship of Teaching and Learning", Graduate Teacher program annual Fall Intensive, Fall 07 (2 hrs)
- 2007, "Workshop for CU Faculty New To Using Learning Assistants". With V. Otero, N. Finkelstein, M. Klymkowsky, August 2007.
- 2007, Online interview for http://universitariodefisica.blogspot.com, Brazilian Universitário de Física
- 2007, "Scholarship of Teaching and Learning" , Graduate Teacher Program Teaching Institute, March
- 2006, CU Boulder Sampler wizard show/presentation for Admissions, 1 hr, Summer.
- 2006, "Learning about learning: Physics education research in action.", CU Family Weekend.

- 2006, "Preparing Future Faculty for the Scholarship of Teaching and Learning", Graduate Teacher program annual Fall Intensive
- 2006, "Issues of inclusion, privilege & framing: Addressing gender disparity in undergraduate physics", LEAP Faculty Workshop, with N. Finkelstein, 2 hrs, April '06.
- 2006, "Diversity and Inclusion in Physics", CU Graduate Teacher Program Workshop with N. Finkelstein, 1.5 hrs, Oct '06
- 2006, "Physics Education", Workshop for VIVA (Denver University program for continuing education), 2 hrs, May '06
- 2006, "Physics Education", Workshop for CU Preprofessionals, Sep 2006 (2 hrs)
- 2006, "Teaching: the good, the bad, and the ugly", for Preparing Future Physics Faculty, talk, with N. Finkelstein and C. Keller
- 2005, "Tracking Trasnformed Courses, Impacts of Tutorials", Seminar for CU STEMP-TP/PER group
- 2005, "Einsteins achievements (and a few blunders?)", World Year of Physics Talk, CU Boulder.
- 2005, "Tools, Practices, and Implications from Physics Education Research - I", College of Engineering and Applied Science Faculty, Dean's teaching Seminar. ", Feb 05, with N. Finkelstein
- 2005 "Physics Education Research at CU", CU Society of Physics Students, Fall '05
- 2005, Career Day host for high school students, April '05
- 2005, "Interactive Learning in the Classroom: Building on a Base", FTEP summer instititute
- 2005, "Talk Amongst Yourselves: Stimulating Discussion in Large and Small Classes", CU Graduate Teacher Program panel Feb '05
- 2005, "Improving Recitations: Tutorials at CU", CU Physics Dep't Faculty Brown Bag Series
- 2005, "Physics and Physics Education at CU.", CU Boulder Talented Scholar's Day presentation: Nov '05.
- 2005, "Teaching: the good, the bad, and the ugly", for Preparing Future Physics Faculty) talk, with N. Finkelstein and C. Keller
- 2005, "Learning about learning: Physics education research in action", CU Family Weekend invited talk Fa 05.
- 2005, "Engaging students in Large Classes", Graduate Teacher program annual Fall Intensive
- 2005, invited presentation for "Early Career Faculty Program", CU Faculty Teaching Excellence Program
- 2003-2006, "STEM Colorado Workshop for K-12 Teachers, Noyce Fellows, and University Faculty." V. Otero, S. Iona, S. Pollock, N. Finkelstein, M. Dubson. Workshop, held annually.
- 2004, "Research in impacts of classroom reform." Seminar for CU STEMP-TP/PER group
- 2004, "Tutorials in 1110 and 1120, and Teaching and Learning of Physics", Seminar for CU STEMP-TP/PER group, Fa '04.
- 2004, "Learning about learning: Physics education research in action.", CU Family Weekend invited talk: Fa '04
- 2004, "Physics and Physics Education at CU", CU Boulder Talented Scholar's Day presentation, Nov '04
- 2004, Teaching Workshop for Astronomy department incoming graduate students, Fa '04.
- 2004, "Returning to the Nuts and Bolts of Teaching series: Inclusive Pedagogy in the Classroom", Faculty Teaching Excellence Program invited talk: Mar '04.
- 2004, "Making the Invisible Visible" CU Physics Outreach Saturday presentation
- 2004, "Engaging students in Large Classes", invited workshop for the "Community and Dialogue in Academe", Graduate Teacher program annual Spring Conference
- 2003, "On transforming physics 1110." Seminar for CU STEMP-TP group, Jun
- 2002, "Making the Invisible Visible", CU Physics Outreach Saturday presentation
- 2002, Featured participant in On-Campus Housing Council on Academic Programs in Residence Halls (CAPRH) activity,
- 2002, "Teaching and Learning in Large Classes", Graduate Teacher Program Friday Forum/Workshop, Feb invited speaker.
- 2002, "Teaching large classes", Graduate Teacher program Fall Intensive invited workshop
- 2001 Montbello High School presentation/tour of CU Physics, Mar
- 2001, Graduate Teacher Program "Einstein Revisited" Conference, "Active learning in Science Classes".
- 2001, Graduate Teacher Program Friday Forum/Workshop, Jan 2001 . "Active learning in Science Classes".
- 2001, Graduate Teacher Program's Fall Conference, "Teaching Large Science Courses".
- 2001, "Parity violation in nuclear physics", talk for CU SPS
- 2000, Boulder Valley 2000 Regional Science Fair Keynote "Neutrinos, Sparks, and Mirrors: Seeing invisible physics"

Earlier work: (largely pre tenure)

Refereed publications in theoretical nuclear physics:

"Estimate of contribution from p-d mixing in atomic PNC'', M.C. Welliver and S. Pollock, Phys. Lett **B 551** (2003) 86 (7 pp)

"On improving the determination of the neutron distribution in a heavy spin-0 nucleus'', M.C. Welliver and S. Pollock , J. Phys G: Nucl. Part. Phys. **29** (2003) L21 (7 pp)

"Nuclear Structure Effects in Parity-Violating A(e,e')A Scattering and Atomic Parity Nonconservation'', S. Pollock and M. Welliver, J. Phys. G: Nucl. Part. Phys. **27** No 4 (2001) 787 (18 pp)

"Parity Violating Measurements of Neutron Densities", C.J. Horowitz, S. Pollock, Robert Michaels, Paul Souder. Physical Review **C63**, p. 025501 (2001) (18 pp)

"Effects of Neutron Spatial Distributions on Atomic Parity Nonconservation in Cesium", S.J. Pollock and M. Welliver, Physics Letters **B 464** 1999, pp. 177-182

"Parity-Violating Excitation of the Delta(1232): Hadron Structure and New Physics", S. Pollock, N.C. Mukhopadhyay, M. Ramsey-Musolf, J. Liu, H.-W. Hammer, Nuclear Physics **A633** (1998) 481-518

"Evolution of Gluon Spin in the Nucleon", S.J. Pollock, Physics Letters **B405** 355-360 (1997)

"The Electron Nucleon Cross Section in (e,e'p) Reactions", S. Pollock, H.W.L. Naus, J.H. Koch. Phys. Rev. **C 53,** 2304-2308 (1996)

"Evolution of the Spin of the Nucleon", P.J. Mulders and S. Pollock. Nuc. Phys. **A588**, 876-888 (1995)

"Isospin-breaking Corrections to Nucleon Electroweak Form Factors in the Constituent Quark Model", V. Dmitrasinovic and S. Pollock. Phys. Rev. **C52**, 1061-1072 (1995)

"Intermediate-Energy Semileptonic Probes of the Hadronic Neutral Current"M.J. Musolf, T.W. Donnelly, J. Dubach, S. Pollock, S. Kowalski, E.J. Beise. Physics Reports **239** (1994) pp. 1-178

"Semi-inclusive Deep Inelastic Lepton Scattering in a Pion Cloud Model"A.E.L. Dieperink and S. Pollock. Z. Physica **A 348** (1994) pp. 117-121

"Neutrino-Nucleus Quasifree Neutral Current Reactions and the Nucleon Strange Quark Content" C.J. Horowitz, Hungchong Kim, D.P. Murdock, S. Pollock. Phys. Rev **C48**,(1993) 3078-3087.

"On Form Factors and Gauge Invariance in Pion Photoproduction" R.L. Workman, H.W.L. Naus, S. Pollock. Phys. Rev. **C45** (1992) 2511-2513

"Strangeness Matrix Elements in the Nucleon" W. Koepf, E.M. Henley, S.~Pollock. Physics Letters **B288** (1992) 11-17

"Neutrino and Antineutrino-deuteron Elastic Scattering and the Axial Isoscalar Nucleon Current"T. Frederico, E.M. Henley, S. Pollock, and S. Ying. Phys. Rev. **C46** (1992) 347-356

"Atomic Parity Nonconservation: Electroweak Parameters and Nuclear Structure" S.~Pollock, E.N. Fortson, L. Wilets. Phys. Rev. **C46** (1992) 2587-2600.

"Measuring Strangeness Matrix Elements of the Nucleon", E.M. Henley, G. Krein, S.~Pollock, and A.G. Williams. Physics Letters **B269** (1991) 31-34.

"Strange Quarks in the Deuteron" S. Pollock. Phys. Rev **D42** (1990) 3010-3019. (Err., Phys. Rev **D43** (1991) 2447.)

"Electron Scattering from a Bound Nucleon" H.W.L. Naus, S.Pollock, J.H. Koch, U. Olfke, Nuclear Physics **A509** (1990) 717-735

"The Spin Structure of the Nucleon and its Evolution "J. Kunz, P.J. Mulders, S. Pollock, Physics Letters **B222** (1989) 481-486

"Signatures of an extra Z0 gauge boson in elastic e - proton scattering." S. Pollock, Phys. Rev **D39** (1989) 163-168

"Single Nucleon Coincidence Cross Sections in a Relativistic Mean Field Theory." S. Pollock, Acta Physica Polonica **B19** (1988) 419. (Erratum, **B19** (1994) 899.)
"Electroweak Interactions with the Nucleon and Tests of the Standard Model." S.Pollock, Nuclear Physics **A461**(1987) 553

Refereed articles in conference proceedings in theoretical nuclear physics

"Sensitivity of P-V A(e,e')A Scattering and Atomic Parity Nonconservation to Neutron Distributions in Nuclei.", S.J. Pollock and M. Welliver, Nuclear Physics **A 663&664** (2000) pp. 381c-384c

"Parity-Violating Delta Electroweak Production: Axial Structure and New Physics", S. J. Pollock, N. C. Mukhopadhyay, M. Ramsey-Musolf, J. Liu, H.-W. Hammer, Few-Body Systems Suppl. 11, p. 112-115 (1999)

"Mesonic Models for Nucleon Strangeness" S. Pollock, Proceedings of the 5th Int. Symposium on Meson-Nucleon Physics. pi-N Newsletter #8, p. 61, Oct 1993 Ed. G. Hohler, W. Kluge, B. Nefkens

"Some Measurement for Determining Strangeness Matrix Elements in the Nucleon", E.M. Henley, T. Frederico, S. Pollock, S. Ying, G. Krein, and A.G. Williams. Few-Body Systems, Suppl. 6 (1992) 66-76.

"Parity violating e- deuteron scattering as a probe of the strangeness content of the nucleon"S. Pollock, AIP Conference Proceedings No. 223, Particles and Fields Series 42, 1991 (Polarized Collider Workshop, Ed. Collins, Heppelman, and Robinett) p.335-339

Abstracts and articles for conference proceedings, and other non-refereed articles

CU Nuclear Theory Group Annual Progress Reports, 1994 (pp. 14-43), 1995 (pp. 1-19), 1996 (pp. 1-20), 1997 (pp. 1-5), 1998 (pp. 1-8), 1999 (pp. 1-11), 2000 (pp. 1-11), 2001 (pp. 1-9), 2002 (pp. 1-9), 2003 (pp. 1-9)

Sensitivity of Low-Energy Parity-Violating Observables to Spatial Neutron Distributions", S. Pollock, M. Welliver. Abstract submitted for Fall 2001 DNP meeting.

"Nuclear Structure and atomic PNC", invited written presentation for ITAMP "Tests of Fundamental Symmetries in Atoms and Molecules" workshop, Nov 2001.

Contributed sections in Executive Summary, and parts 2.4, 4.3.3, and 5.1 in White Paper on "Workshop on Neutrino Physics Using A Stopped Pion Neutrino Facility", S. Pollock, May 22-23, 2000, Oak Ridge, Tennessee

"Parity Violating Measurements of Neutron Densities", C.J. Horowitz, S. Pollock, Robert Michaels, Paul Souder. Abstract for 7th Conference on the Intersections of Particle and Nuclear Physics, Quebec City, CA (May 2000)

"Sensitivity of Parity Violating A(\vec{e}, e')A$Scattering and Atomic Parity Violation to Neutron Distributions in Nuclei", S. Pollock and M. Welliver, Abstract for American Physical Society meeting, Atlanta. (Mar '99)

"Sensitivity of $A(\vec e, e')A$ and Atomic PNC to Neutron Distributions in Nuclei", S. Pollock and M. Welliver, Abstract for Particles and Nuclei International Conference, Uppsala, Sweden (June '99)

"Theoretical considerations in Parity Violating (\vec e, e') Nucleus Scattering", M. Welliver and S.J. Pollock, Abstract for Spring '98 American Physical Society meeting, 4-Corners Section.

"Pion Cloud Contribution to the Elastic Parity-Violating Electromagnetic Current Matrix Element of the Nucleon", S. Pollock, V. Dmitrasinovic, NPL Preprint NPL-1134 (1997)

"Nuclear Structure Issues in Nuclear and Atomic Parity Violation", S. Pollock, Article in Proceedings of Future Directions in Parity-Violation, June 22-24, 1997 (INT publication)

"Theoretical issues in neutral weak interactions involving atoms and nuclei", S. Pollock, abstract published in Bulletin of the APS, Vol 42, No. 7 (DNP97 October 5-8, Whistler B.C.)

"Isospin-breaking corrections to nucleon electroweak form factors", V. Dmitrasinovic and S. Pollock. Abstract submitted to Baryons '95, Santa Fe, October 1995, also American Physical Society DNP '95, Bloomington, 25-28 October 1995, also Gordon Photonuclear Conference, July 1996

"Nuclear Physics Issues in Atomic Parity Violation", S. Pollock, Lecture notes in Proceedings of Symposium on Fundamental Symmetry Tests in Atoms, July 17-19, 1995. Institute for Nuclear Theory, Seattle.

"A Study of Off-Shell Effects in Electromagnetic Reactions", J.F.J. van den Brand et al. (S. Pollock). Proposal submitted to CEBAF, March 1994

"A Study of Off-Shell Effects in Electromagnetic Reactions"J.F.J van den Brand, H.J. Bulten, R. Ent, J. Koch, S. Pollock. Letter of Intent to the CEBAF PAC-6, 1993

" Atomic Parity Nonconservation: Electroweak Parameters and Nuclear Structure" S. Pollock, E.N. Fortson, L. Wilets. Astract for invited talk submitted to APS Washington meeting, April 20-23, 1992.

"Strangeness in Nucleons" E.M. Henley, T. Frederico, W. Koepf, G. Krein, S. Pollock, A.G. Williams, and S. Ying. Abstract submitted to LEAP '92 conference, Sept. 14-19, 1992, Courmayeur, Italy.

"Measuring Strangeness Matrix Elements of the Nucleon" E.M. Henley, G. Krein, S. Pollock, and A.G. Williams. Abstract submitted to the Gordon Conference "QCD in Nuclear Physics", Tilton, NH, July 22-26, 1991.

"Some Measurement for Determining Strangeness Matrix Elements in the Nucleon"E.M. Henley, T. Frederico, S. Pollock, S. Ying, G. Krein, and A.G. Williams. Abstract in Conference Proceedings of the 13th European Conference on Few Body Problems in Physics, Sept 9-14, 1991, Elba, Italy.

"Polarization experiments at NIKHEF." K. Allart, Th. Bauer, C.W. de Jager, J.H. Koch, J. Konijn, L. Lapikas, P.J. Mulders, S. Pollock, G. van der Steenhoven, H. de Vries. Letter of Intent, NIKHEF 89-E12.

"Electroweak Interactions in the Nuclear Domain.", S. Pollock,
Stanford University Ph.D. thesis. 1988

"$p(\vec e,e) p$ in the Standard Model." S. Pollock, Abstract and talk in Proceedings of the Parity Violation Workshop (Dec 11-12, 1986) CEBAF

"Elastic Electroweak Processes with Nucleons" S. Pollock, Abstract published in "Bulletin of the American Physical Society"28-30 October 1985

"A Scanning 3-axis Squid Magnetometer for Measurement of Sub-Microgauss Magnetic Fields." J. Lockhart, B. Cabrera, E. Cornell, S. Pollock, Proceedings of the 17th International Conference on Low Temperature Physics (15-22 Aug, 1984) North-Holland

Invited talks in nuclear theory

- 2000, APS, Long Beach CA, " Parity Violation as a Probe of Nucleon and Nuclear Structure" (invited half hour minisymposium lead speaker, APS-DNP Apr 2000)
- 2000, Oak Ridge Tennessee, "Neutrino probes of nuclear form factors", (Invited speaker and session co-chair, "Workshop on Neutrino-Nucleus Physics Using a Stopped Pion Neutrino Facility ORLaND", May 23-26, 2000.)
- 2000, ECT - Trento, "Nuclear Structure and Atomic PNC" (invited 45 min. contribution to ECT workshop on Parity Violation)

- 1998, ECT - Trento, "Parity violation and the structure of the Delta",
- (Invited 45 min contribution to European Nuclear Theory Center workshop on N* physics)

- 1997, INT Seattle, "Nuclear Structure Issues in Nuclear and Atomic Parity Violation" (invited 45 minute lead talk at Future of Parity Violation conference, joint CEBAF/Institute for Nuclear Theory)
- 1997, APS - Whistler, "Theoretical Issues in Neutral Weak Interactions Involving Atoms and Nuclei" (invited half hour minisymposium lead speaker, APS-DNP)
- 1992, APS - Wash., "Atomic PNC: electroweak parameters and nuclear structure" (invited half hour talk at APS meeting)

Other talks, seminars, and colloquia in nuclear theory

- 2000, CU - Nuclear Physics Lab, "Parity Violation as a probe of Nucleon and nuclear structure"
- 1999, APS - Atlanta, "Sensitivity of Parity Violating electron Scattering and Atomic Parity Non-conservation to Neutron Distributions" (conference talk)
- 1999, PANIC - Uppsala, "Sensitivity of $A(\vec e, e')A$ andAtomic PNC to Neutron Distributions in Nuclei" (conference talk)
- 1999, U. Colorado, "Through the looking-glass: What can we *still* learn from parity violating electron scattering?"
- 1998, APS - 4 Corners, "Theoretical Considerations in Parity Violating Electron Nucleus Scattering",(conference talk)
- 1998, CU - Nuclear Physics Lab, "Weak Interactions in Nuclear Physics"
- 1997, CU - Atomic Group, "Beyond Standard Models"
- 1997, U. Wyoming, "Physics of the Proton"
- 1997, Tilton NH (Gordon), "Evolution of Gluon Spin in the Nucleon"(poster presentation)
- 1997, INT Seattle, "Summary of Theory Issues in P-Violation on Heavy Nuclei" (workshop talk)
- 1996, Gordon Conference, "Isospin-breaking Modifications ofNucleon Form Factors" (poster presentation)
- 1996, PANIC - Williamsburg, "Evolution of the Spin of the Nucleon" (poster presentation)
- 1996, CU Denver, "Strangeness in the Proton"
- 1996, INT Seattle, "Future of Parity Violation Experiments"
- 1995, APS-DNP Bloomington, "Isospin-breaking in the Nucleon"(conference talk)
- 1995, CU Boulder - HEP, " Nuclear WNC and tests of the S.M."
- 1995, INT Seattle, " Nuclear physics issues in atomic PNC"
- 1995, INT Seattle, invited summer visitor, ("brown bag" seminars)
- 1995, CO School of Mines, " Strangeness in the Proton"
- 1993, PANIC - Perugia "Neutrino Interactions and Strange Quark Content of the Proton" (poster presentation)
- 1993, UNC Chapel Hill, " Atomic PNC"
- 1993, CU Boulder, " Strangeness of the proton"
- 1993, NIKHEF-H, " Beyond Standard Models"
- 1993, Landelijk Seminarium, Nijmegen, " Atomic PNC'"
- 1993, NIKHEF-K, " Atomic PNC'"
- 1992, Cal Tech, " Effects of particle and nuclear physics in atomic PNC'"
- 1992, Argonne, " Effects of particle and nuclear physics in atomic PNC'"
- 1992, CEBAF, " Effects of particle and nuclear physics in atomic PNC'"
- 1992, Los Alamos, " Particle and nuclear physics in atomic PNC"
- 1992, Hampton College, "The Strangeness of the proton"
- 1992, Old Dominion Univ., "The Strangeness of the proton"

Public outreach or student talks

- 2000, Presentation at School of Music, “Web Based Teaching Tricks”
- 2000, Graduate Teacher Friday Forum, "Teaching Large Lectures", Nov 17 2000
- 1996, CU - Frontiers of Mod. Phys., "Status of Solar Neutrinos"
- 1995, CU Boulder - Physics Day, "Solar Neutrino Puzzle'
- 1995, CU Sigma Pi Sigma, " Physics Resources on the Internet"
- 1994, Longmont Lions Club, " What's Up in Modern Physics?”

Classroom Teaching History at CU

Semester	Course	Title	Type	# of Students
Fa 1993	Phys 2010	General Physics 1	Rec/Lab	28
Fa 1993	Phys 2010	General Physics 1	Rec/Lab	29
Sp 1994	Phys 2020	General Physics 2	Rec/Lab	31
Sp 1994	Phys 2020	General Physics 2	Rec/Lab	14
Fa 1994	Phys 2140	Methods of Theoretical Physics	Lec	21
Fa 1994	Phys 1110	General Physics I	Fall Fest Recitation	21
Sp 1995	Phys 2170	Intro to Modern	Lec	18
Fa 1995	Phys 2140	Methods of Theoretical Physics	Lec	49
Fa 1995	Phys 1120	General Physics 2	Rec	20
Sp 1996	Phys 2170	Intro to Modern Physics	Lec	27
Fa 1996	Phys 3220	Quantum Physics	Lec	20
Sp 1997	Phys 4420	Nuclear and Particle Physics	Lec	8
Sp 1997	Phys 1140	Experimental Physics	Lab	7
Fa 1997	Phys 3220	Quantum Physics	Lec	15
Sp 1998	Phys 4410	Quantum Physics 2	Lec	12
Fa 1998	Phys 2010	Introductory Physics 1	Lec/Lab	233
Fa 1998	Phys 2010	Introductory Physics 1	Lec/Lab	295
Sp 1999	Phys 4410	Quantum Physics 2	Lec	16
Fa 1999	Phys 2010	Introductory Physics 1	Lec/Lab	300
Fa 1999	Phys 2010	Introductory Physics 1	Lec/Lab	301
Sp 2000	Phys 2020	Introductory Physics 2	Lec/Lab	200
Sp 2000	Phys 2020	Introductory Physics 2	Lec/Lab	200
Fa 2000	Phys 3070	Energy and Environment	Lec	22
Sp 2001	Phys 1110	Physics 1 (team taught)	Lec/Rec	235
Sp 2001	Phys 1110	Physics 1 (team taught)	Lec/Rec	235
Sp 2001	Phys 2010	Introductory Physics 1 (took over for 1/5 semester)	Lec/Lab	225
Fa 2001	Phys 2020	Introductory Physics 2	Lec/Lab	144
Fa 2001	Phys 1010	Physics of Everyday life (took over 5 weeks)	Lec	206
Sp 2002	Phys 1120	Physics 2	Lec/Rec	330
Fa 2003	Phys 1110	Physics 1	Lec/Rec	599
Fa 2003	Phys 4810/7810	Physics Education (team taught)	Seminar	8 + 8 audits
Sp 2004	Phys 1110	Physics 1	Lec/Rec	264
Sp 2004	Phys 1110	Physics 1	Lec/Rec	295
Fa 2004	Phys 1120	Physics 2	Lec/Rec	239
Fa 2004	Phys 1120	Physics 2	Lec/Rec	241
Sp 2005	Phys 3070	Energy and Environment	Lec	59
Fa 2005	Phys 1240	Sound and Music	Lec	212
Fa 2005	Phys 4810/7810	Teaching and Learning Physics (team taught)	Seminar	4
Sp 2006	Phys 1120	Physics 2 (team taught)	Lec/Rec	425
Fa 2006	Phys 4810/7810	Teaching and Learning Physics	Seminar	11
Sp 2007	Phys 1240	Sound and Music	Lec	194
Fa 2007	Phys 1120	Physics 2 (team taught)	Lec/Rec	430
Sp 2008	Phys 3310	E&M 2	Lec	24

Curriculum development

Developed Clicker Questions and pre-post testing, Phys 3310 - 2008
Introduced web-based student activities, Phys 4810/7810 - 2006
Developed Clicker Questions and pre-post testing, Phys 1240 - 2006
Developed Clicker Questions and pre-post testing, Phys 3070 - 2005
Introduced Tutorials in Introductory Physics in Phys 1120 - 2004
Introduced Tutorials in Introductory Physics in Phys 1110 - 2004
Developed Peer Instruction materials in Phys 1110 - 2001
Developing web based physics course home pages -1994 to present
Developed Physics X with M. Dubson (no credit Comps training for grad students) (1998)
Expanded Mathematica curriculum in Phys. 2140 (1994-1995)
Created Fall Fest (physics/calculus) recitation section (1994)
Coordination of Calc I with Phys 1110 (with G. Fox APPM) (1994)

Physics department committees

Teaching Evaluation Committee, 2001-present (Chair 2006, 07, 08)
Junior Faculty Steering Committee, 1993 -present (Chair 2007/8)
Undergraduate Arts and Sciences Advisor, 1994-present
Physics Graduate Oral Examinations, 1994 – present
Physics Evaluation Panel, 1996, 1997, 2001, 2002, 2006
Comprehensive Examination Committee, 1993, 1994, 1999, 2000
Departmental Undergraduate Core Advisor, 1997-1999
External Review Strategy, 1993, 2008
Physics Graduate Committee, 1994, 1995, 1999, 2000
Physics Computer Committee, Sp 1995 -2001
FTEP Physics/Computer Liaison 1998
Organizer, Nuclear half of Nucl./HEP seminar, Fa 1995-2000
Faculty search committee, Nuclear Physics, 2000, 2001
Faculty search committee, Condensed Matter theory 1994, 1995
Faculty search committee, AMO theory, 1995, 1996

Campus committees

Prehealth Advising Committee 2003-present
Planning Committee, FTEP Conference on Classroom Learning Assessement, 2006, 2007
Presiden't Teaching and Learning Collaborative, 2005-present
CU Recruitment: Boulder Sampler, Family Weekend, Talented Scholars, 2005- present
CU Summer Ready Program, 2007
A&S Course Curriculum Committee 2003-2006
A&S Natural Science Core Curriculum working group 2005
Center of the American West advisor, 2005
Campus Teaching, Learning, and Assessment Collaboration, 2004, 2005
Provost's committee on Teaching and Learning 2003, 2004
Educational Technology Strategic Planning Group, 2001, 2002
BFA Excellence Awards comittee, 2002
ABET accreditation committee, 2002
Dean's Small Grant Committee, 1998, 1999
UROP reviewer, Sp 1998-2001
Volunteer for CU Public Speakers Bureau, 1995
C.U. Freshman Orientation 1994-1998