

# STEPHANIE V. CHASTEEN

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## *CURRICULUM VITAE*

### BACKGROUND SUMMARY

Professional evaluator of college-level STEM educational reform projects, with a focus on departmental change and faculty use of research-based instructional techniques. Possess PhD in physics and 20+ years' experience in communication, education, and evaluation. Driven by persistence, organization, and creative passion.

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## PROVEN SKILLS

### EVALUATION

- Evaluation planning and change models
- Surveys, interviews, focus groups
- Stakeholder engagement
- Clear communication

### PROJECT MANAGEMENT

- Efficient completion of deliverables
- Group facilitation
- Event planning

### HIGHER EDUCATION

- Faculty & institutional change
- Learning goal development
- Course design & effective pedagogy
- Assessment & concept inventories

### CREATIVE SKILLS

- Public science writing
- Writing about education for educators
- Digital audio and video production

## EDUCATION

**UNIVERSITY OF COLORADO BOULDER.** Physics Department, Boulder, CO. NSF Post-doctoral fellow in upper-division course design, with Science Education Initiative. Advisor: Steven Pollock. *2007-2010.*

**EXPLORATORIUM MUSEUM OF SCIENCE, ART AND HUMAN PERCEPTION.** Teacher Institute, San Francisco, CA. NSF Post-doc in teacher education. Advisor: Paul Doherty. *2005-2007.*

**UNIVERSITY OF CALIFORNIA – SANTA CRUZ.** Santa Cruz, CA. Ph.D., Condensed Matter Physics, *2005.*

**BARD COLLEGE.** Annandale-on-Hudson, NY. B.A., Social Psychology, *1995.*

## EMPLOYMENT

**PROFESSIONAL EVALUATOR AND SCIENCE EDUCATION CONSULTANT** – *Chasteen Educational Consulting.* • Self-employed. *2009-present.* Support research-based educational reform: See client list below.

**PI, TRESTLE INITIATIVE** - *Center for STEM Learning, CU-Boulder* • *2015-2021.* PI of CU-Boulder NSF-funded project, Transforming Education, Stimulating Teaching and Learning Excellence (TRESTLE).

**SENIOR ADVISOR ON FACULTY AND DEPARTMENTAL CHANGE INITIATIVES / COURSE TRANSFORMATION**

**SPECIALIST** - *Center for STEM Learning, CU-Boulder* • Dr. Noah Finkelstein. *2015-2020.* Provided professional development around teaching and learning for STEM faculty; advised change projects in departments.

**ASSOCIATE DIRECTOR** - *Science Education Initiative, CU-Boulder* • Dr. Kathy Perkins. *2012-2020.* Administered and evaluated final years of \$5M project to improve undergraduate STEM education.

**LECTURER** - *Physics Department, CU-Boulder* • Dr. Michael Dubson. *2012-2014.* Teach “Light and Color” course for non-majors.

**MEDIA DIRECTOR & OUTREACH DIRECTOR** - *PhET Interactive Simulations, CU Boulder* • Dr. Kathy Perkins. *2010-2016.* Produced video series aimed at K-12 and college instructors, about effective ways use of PhET simulations. Initiated outreach program aimed at college STEM instructors, including videos and short guides.

**FREELANCE SCIENCE JOURNALIST.** Variety of clients. 2000-2008. See Online and Popular Press for list of publication. Published over a dozen articles on science for public audience in print, web, podcast

**NATIONAL PUBLIC RADIO SCIENCE DESK INTERN** - *NPR, Washington DC* • Alison Richards, *2003.* Through the AAAS Mass Media intern program. Reported, wrote, voiced, and produced several nationally-aired radio shorts on breaking science news. Communicated science briefly and clearly.

## CONSULTING CLIENTS

All consulting is through my independent business, Chasteen Educational Consulting.

### EXTERNAL EVALUATOR: CURRENT PROJECTS

**ORGANIZATION FOR PHYSICS AT TWO-YEAR COLLEGES (OPTYCS):** External evaluator for project to coordinate success among physics programs in two-year institutions, *American Association of Physics Teachers*, Dr. Kris Liu, 2022-2027.

**COMMITTEE FOR STATUS OF WOMEN IN PHYSICS SITE VISITS (CSWP):** Evaluation planning for site visits from the APS investigating the climate for women and minorities in departments and programs, *American Physical Society*, Dr. Erika Brown, 2022.

**CONFERENCE FOR UNDERGRADUATE WOMEN IN PHYSICS (CUWiP):** Evaluation of the professional development associated with running national conferences for undergraduate women in physics (NSF-IUSE), *American Physical Society*, Dr. Renee Michelle Goertzen, 2020-present.

**EFFECTIVE PRACTICES IN PHYSICS PROGRAMS (EP3):** National task force and movement to document and support standards of excellence for physics departments (NSF-IUSE), *American Physical Society*, Dr. Ted Hodapp, 2017-present.

**GET THE FACTS OUT:** Messaging about the teaching profession across disciplines (NSF-IUSE), *Colorado School of Mines*, Dr. Wendy Adams, 2018 – present.

**PHYSICS TEACHER EDUCATION COALITION (PHYSTEC):** National project to increase the number of high school physics teachers produced by physics departments (NSF various), *American Physical Society*, Dr. Monica Plisch, 2016-present.

**NEW FACULTY WORKSHOP IN PHYSICS AND ASTRONOMY:** Enhancing STEM Learning through Faculty Development: Discipline-Based Workshops and Faculty Learning Communities for Physics and Astronomy Faculty (NSF-TUES), *American Association of Physics Teachers*, Dr. Robert Hilborn, 2014-present.

**TEAM-UP NOYCE:** Noyce grant to support recruitment of STEM teachers for high-needs school district, at an engineering-focused institution (NSF Noyce), *Colorado School of Mines*, Dr. Kristine Callan, 2018-2022.

### EXTERNAL EVALUATOR: PAST PROJECTS

**DEPARTMENTAL AND LEADERSHIP TEAMS FOR ACTION (DeLTA):** Leadership teams at all strategic levels to change educational practice and policy (NSF-IUSE), *University of Georgia*, Dr. Paula Lemons, 2019-2021.

**CLIMATE SITE VISITS:** Committee on Status of Women in Physics site visit redesign, *American Physical Society*, Dr. Theodore Hodapp, 2020.

**COMPUTER SCIENCE CONCEPT INVENTORY:** Infrastructure and Development of a Computer Science Concept Inventory for CS2 (NSF-IUSE), *University of San Diego*, Dr. Leo Porter, 2015-2020.

**RIT TEACHING TRIADS:** Spreading teaching innovation through deep, engaged partnerships among faculty (NSF-IUSE), *Rochester Institute of Technology*, Dr. Scott Franklin, 2016-2020.

**APS GRADUATE EDUCATION CONFERENCE:** Conference to support inclusion and excellence in graduate education, including a one-year follow-up (NSF-PHY), *American Physical Society*, Dr. Ted Hodapp, 2017.

**PERISCOPE VIDEO RESOURCES:** Video Resource for Professional Development of University Physics Educators (NSF-TUES), *Seattle Pacific University*, Dr. Rachel Scherr, 2013-2018.

**PROFESSIONAL SKILLS DEVELOPMENT WORKSHOPS FOR WOMEN (PDSW):** National project to support female physicists' ability to negotiate and other professional skills, *American Physical Society*, Dr. Ted Hodapp, 2016.

**IQ-BIOLOGY IGERT:** IQ-Biology Graduate Training Program in quantitative biology (NSF-IGERT), *CU-Boulder*, Dr. Thomas Cech, 2011-2015.

**IPLS CONFERENCE:** Introductory Physics for Life Sciences Conference (NSF-TUES), *American Association of Physics Teachers*, Dr. Robert Hilborn, 2014.

**TEEN SCIENCE CAFÉ:** Teen Science Café Network (NSF-AISL), *Science Discovery*, CU-Boulder Dr. Stacey Forsyth, 2013-2015.

**ENGINEERING SCREENCASTS:** LearnCheMe Screencasts and ConcepTests (NSF-TUES), *CU-Boulder*, Dr. John Falconer, 2013-2015.

**ENGINEERING GAANNS:** Graduate Assistance Program in Electrical, Computer, and Energy Engineering (DoE GAANN), *CU-Boulder*, Dr. Robert McLeod, and Renewable and Sustainable Energy, CU-Boulder, Dr. Alan Weimer, 2013-2014.

**ENGINEERING IGERT:** COSI Graduate Training Program in Computational Optics (NSF-IGERT), *CU-Boulder*, Dr. Rafael Piestun, 2009-2013.

**CEAE WORKSHOPS:** Teaching Excellence Workshops (NSF-TUES), Center for Astronomy Education, *U. of Arizona*, Dr. Edward Prather, 2011

**PHET MIDDLE SCHOOL EXPANSION:** Expanding PhET Simulations to Grades 4-8 (NSF-DRK12), *CU-Boulder*, Dr. Katherine Perkins, 2010-2013.

## WRITING, EDITING AND RESEARCH: PAST PROJECTS

**PHYS21 CASE STUDIES.** APS-AAPT, Joint Task Force on Undergraduate Physics Programs (J-TUPP), College Park, MD • Dr. Bob Hilborn. Researched and wrote case studies of thriving physics programs for national task force report. <https://www.aps.org/programs/education/undergrad/jtupp.cfm>. 2016.

**VIRTUAL NEW FACULTY WORKSHOP and VIDEOS ON TUTORIALS.** PhysPort.org, Seattle, WA • Dr. Sarah McKagan. Filmed and produced virtual versions of the popular faculty workshop in physics. Produced four short films about the use of Tutorials in Introductory Physics, as well as two short introductory films for the website. <https://www.physport.org/nfw/> and <https://www.physport.org/recommendations/Entry.cfm?ID=93383>. 2015.

**MANUSCRIPT REVIEW.** Western Michigan University • Dr. Charles Henderson. Reviewed guide, "Increase the Impact; Designing Educational Innovations for Sustained Adoption." <http://www.increasetheimpact.com/>. 2015.

**I>CLICKER BLOG & WEBINARS.** i>clicker / MacMillan • James McNamee. Provided webinars and blog posts on topics relevant to clickers and peer instruction. <https://www1.iclicker.com/blog/>. 2011-2016.

**CIRTL MOOC PRODUCTION.** Center for Integration of Research, Teaching and Learning (CIRTL) • Dr. Derek Bruff. Created online "learning goals" module, and oversaw production of "assessment" module for Massive Open Online Course (MOOC) on research-based teaching practices, including video content delivery and student assignments. <http://stemteachingcourse.org/>. 2014.

**NATIONAL GEOGRAPHIC CONTENT REVIEW.** National Geographic TV • Dr. Paul Durbin. Reviewed physics content for television shows, "Science of Stupid" and "None of Above." 2013-2014.

**SERC LEARNING ASSISTANT MODULE.** Science Education Resource Center (SERC) • Dr. Cathy Manduca. Wrote a peer-reviewed online module about the use of Learning Assistants, with Valerie Otero. [http://serc.carleton.edu/sp/library/learning\\_assistants/index.html](http://serc.carleton.edu/sp/library/learning_assistants/index.html). 2012.

**SEPUP CURRICULAR REVIEW.** Lawrence Hall of Science SEPUP • Dr. Chris Keller. Reviewed science content in lesson plans for K-12 science. 2012-2013.

**PER PRESS RELEASES.** American Association of Physics Teachers • Physics Education Research Leadership Organizing Council. Created outreach effort to generate press releases on physics education research. <http://www.compadre.org/per/press/>. 2012.

**ANNENBERG PROFESSIONAL DEVELOPMENT GUIDE.** Harvard-Smithsonian Center for Astrophysics • Alex Griswold. Created a teacher workshop guide to accompany an online course on Annenberg Learner, *Physics for the 21<sup>st</sup> Century*. <https://www.learner.org/courses/physics/>. 2009-2010.

**NSDL PODCAST PRODUCER.** National Science Digital Library • Susan Van Gundy. Produced a monthly podcast on polar research for elementary teachers as part of the Beyond Polar Bears and Penguins project for the International Polar Year. <http://beyondpenguins.ehe.osu.edu/podcasts>. 2009-2010.

**TWIN CITIES PUBLIC TV RESEARCH ASSISTANT.** Twin Cities Public Television • Richard Hudson. Researched resources for a public television production on particle physics, 2003.

### *WORKSHOPS, FACILITATION, AND OUTREACH*

**ASCN PROJECT MANAGER.** Accelerating Systemic Change Network (ASCN) • Dr. Charles Henderson. Provided conference organization and project management for nascent organization, 2016.

**EMERGENT MATTER PROJECT COORDINATOR.** Emergent Matter Project • Dr. David Pines. Acted as central coordinator for an international group of scientists and communicators, 2005-2006.

**PEDAGOGICAL WORKSHOPS:** Facilitated over 60 pedagogical workshops for faculty and K12 teachers on effective pedagogy, including use of personal response systems (“clickers”), backwards-design, assessment, and education research for a variety of clients, including: University of California at Berkeley • i>clicker / MacMillan • Oregon State University • Duke University • University of DePauw • Middle Tennessee University • University of Oregon • Oregon Association of Physics Teachers • George Washington University • North Carolina A&T University • Sheridan County School District • CU-Boulder.

**FACULTY DISCUSSION FACILITATOR** APS Department, CU-Boulder • Dr. Douglas Duncan. Facilitated faculty conversations about course transformations and learning goals. 2012.

**K12 COORDINATOR** Learn More About Climate, Outreach Office, CU-Boulder • Linda Molner-Kelley. Created K-12 outreach programs and initiatives for the Office of University Outreach, focused on university resources related to localized impacts of climate change. 2012.

### *CONFERENCE ORGANIZER*

**EMBEDDED EXPERT MODELS: IMPLEMENTING CHANGE INITIATIVES WHICH SUPPORT DEPARTMENTS FROM WITHIN,** thematic symposium organizer and presenter, Transforming Institutions conference, Philadelphia PA (April 3, 2019).

**ACCELERATING SYSTEMIC CHANGE NETWORK,** meeting organizer, HHMI Campus, Maryland, 2016.

**USING RESEARCH IN STEM EDUCATION TO IMPROVE TEACHING AND LEARNING:** A conference for community college faculty, Conference organizer, CU-Boulder, April 3, 2015.

**PRIORITIZATIONS AND STANDARDIZATIONS FOR NEXT-GENERATION PHET SIMULATIONS,** CU-Boulder, February 17-19, 2014, conference organizer.

# LEADERSHIP AND AWARDS

## *COMMITTEES & ADVISORY BOARDS*

**Journal peer reviewer.** Educational Policy, International Journal of Science Education, Journal of College Science Teaching, International Journal of Science Education, Physical Review Special Topics – Physics Education Research, The Physics Teacher. 2008-present.

**Executive Committee, APS Topical Group on Physics Education Research (GPER),** Secretary/Treasurer (2020-2023).

**American Journal of Physics Resource Letters Editor Board Member,** Physics Education Research representative (2019-2022).

**Leader, “Change Leaders” Working Group,** Accelerating Systemic Change Network (ASCN) “change leaders” working group (2016-present).

**Advisory board member, Mathematics Graduate Teaching Assistant Professional Development (ELITE),** Dr. Mary Beisiegel, NSF-IUSE (2021-present.)

**Advisory board member, Modeling Instructional Change Teams (TEAMS),** Alice Olmstead, NSF-IUSE (2019-present.)

**Editorial Board.** PhysPort.org, Seattle, WA, Dr. Sarah McKagan. Reviewed website content aimed at physics teachers and provided editorial feedback. 2016.

**Proposal reviewer, National Science Foundation,** 2018.

**Invited workshop participant, AAU Essential Questions and Measures,** Assessing Institutional Transformation of Undergraduate STEM Education (February 2019).

**Award committee member, Frascona teaching excellence awards,** University of Colorado Boulder LEEDS School of business (2017).

**Director, physics education consultant directory** (<http://physport.org/consultants>; 2017-present).

**Fellow, Center for STEM Learning (CSL),** University of Colorado Boulder (2015-present)

**Faculty associate, Faculty Teaching Excellence Program (FTEP),** University of Colorado Boulder (2014-2020)

**Selection committee, undergraduate education development program,** University of Colorado Boulder College of Arts & Sciences (2016-2017).

**Advisory board member, Physport.org,** 2014-2016.

## *EVALUATION PROFESSIONAL DEVELOPMENT*

As a mark of my professional engagement, I seek out many professional development opportunities as an evaluator.

**Member: American Evaluation Association (AEA).** 2017-present.

**Member: Colorado Evaluation Network (COEN).** 2018-present.

**Courses and conferences:**

- Aspire Summer Institute ([aspirealliance.org](http://aspirealliance.org)), 1 week professional development around inclusive practices for faculty and departments, completed June 17, 2022).

- Inclusive STEM Teaching Project MOOC (inclusivestemteachign.org), 6-week professional development, completed May 13, 2022.
- Preparing for a Successful Outcome Harvest, AEA Short Course, Feb 12 and 19, 2021.
- Adapting evaluations in the era of social distancing, webinar, Evalu-ATE, May 2020.
- Outcome evaluation, step-by-step, webinar, Evalu-ATE, March 2019.
- Presenting data and information, one-day course, Edward Tufte, Boston, MA, March 2019.
- Assumptions, Complexity and Culture, AEA E-study, Katrina Bledsoe, Jonathan Morell, and Apollo Nkwake, February 2019.
- Mixed methods for research and evaluation studies, Percontor workshop, Julie Posselt, September 2018.
- Survey question design, AEA E-study, Sheila Robinson and Kimberly Leonard, March 2018.
- Intermediate consulting skills, AEA E-study, Gail Barrington, January 2018.
- Eval 2019 Conference, American Evaluation Association, Minneapolis, MN, November 2019.
- Eval 2017 Conference, American Evaluation Association, Washington, DC, November 2017.
- 7 habits of highly utilized evaluations, AEA workshop, Kylie Hutchinson, November 2017.
- Utilization-focused evaluation, AEA workshop, Michael Quinn Patton, November 2017.
- Increasing web survey response rates, Percontor workshop, Paul Umbach, September 2017.
- Data dashboards, AEA E-Study, Ann Emery, August 2017.
- Data visualization, AEA webinar, Stephanie Evergreen, June 2017.

## GRANTS AWARDED

**PERTG mini grant**, *Physics Education Research Consultant Directory*, \$2,000. Creates an online directory of consultants in physics education research, to support education reform.

**PI TRESTLE project**. *Deep Roots: Wide-Spread Implementation of Community-Driven Evidence-Based Pedagogy*, \$286,239. Supports the broader use of research-based pedagogy in STEM courses at the University of Colorado, building on the work of the Science Education Initiative, <http://colorado.edu/csl/trestle>, 2015-2021.

**Chancellor's Award for Excellence in STEM Education**. *Framing the Active Learning Classroom*, CU-Boulder Center for STEM Learning, \$10,000. Researched and produced guides to engaging students in active learning, 2014-2016.

**PERTG mini grant**, *Learning about Teaching Physics Podcast*, American Association of Physics Teachers PER Topical Group, \$1000. Created podcast series about physics education research. <https://www.physport.org/podcasts/>, 2011.

## AWARDS AND FELLOWSHIPS

**NSF postdoctoral fellow**, physics department & science education initiative, cu-boulder, 2007-2010.

**Best professional development podcast**, awarded to science teaching tips podcast, by podcast for teachers, 2007.

**NSF postdoctoral fellow**, Exploratorium Museum of Science, 2005-2007.

**GAANN fellow**, University of California Santa Cruz, 2001-2004.

**AAAS Mass Media Fellow**, national public radio, 2003.

## PUBLICATIONS

### REPORTS, BOOKS, AND BOOK CHAPTERS

**How to work with external evaluators: A white paper for the physics education community.** S. V. Chasteen and A. V. Knaub. Endorsed by the AAPT Board of Directors, January 2, 2021.

<https://www.aapt.org/aboutaapt/organization/upload/How-to-work-with-external-evaluators-January-2021.pdf>

**Results from the 2020 EP3 Survey to Physics Department Chairs,** S. V. Chasteen, J. Corbo, R. Dalka, C. Turpen, American Physical Society. <https://www.aps.org/programs/education/ep3/presentations.cfm>

**Practical advice for partnering with and coaching faculty as an embedded educational expert,** S. V. Chasteen, W. Code, and S. B. Sherman, in White et al. (eds) *Transforming Institutions: Accelerating Systemic Change in Higher Education* (December 15, 2020). Accessed at <http://openbooks.library.umass.edu/ascnti2020/>

**Variations on embedded expert models: Implementing change initiatives that support departments from within,** A. F. Greenhoot, C. Aslan, S. V. Chasteen, W. Code, and S. B. Sherman, in White et al. (eds) *Transforming Institutions: Accelerating Systemic Change in Higher Education* (December 15, 2020). Accessed at <http://openbooks.library.umass.edu/ascnti2020/>.

**The Science Education Initiative Handbook: A guide to fostering change in courses and faculty by embedding discipline-based education specialists within departments,** S. V. Chasteen and W. Code, Accessed at <https://pressbooks.bccampus.ca/seihandbook> (2018).

**A study of thriving physics teacher education programs,** S.V. Chasteen, R. E. Scherr and M. Plisch, (American Physical Society, College Park, MD, 2018). [Full text.](#)

**The Physics Teacher Education Program Analysis (PTEPA) Rubric,** (Versions 1.0 and 2.0). S.V. Chasteen, R. E. Scherr and M. Plisch, (American Physical Society, College Park, MD, 2018). [Full text.](#)

**The Science Education Initiative: An Experiment in Scaling Up Educational Improvements in a Research University,** S. V. Chasteen, C. E. Wieman, K. K. Perkins and W. Code, in *Transforming Institutions*, Purdue University Press (2015). [Full text.](#)

**Change from Within: The Science Education Initiative,** S. V. Chasteen, and K.K. Perkins. Book Chapter, in McDaniel, M., Frey, R., Fitzpatrick, S., and Roediger, H.L. (Eds.), *Integrating Cognitive Science with Innovative Teaching in STEM Disciplines* [e-reader version], 298-370 (2014). [PDF.](#)

### REFEREED JOURNAL ARTICLES

**Insights from the Physics and Astronomy New Faculty Workshop: How do new physics faculty teach?** S. V. Chasteen and R. Chattergoon, *Physical Review Physics Education Research*, 16, 020164 (2020). [Full text.](#)

**Developing the physics teacher education program analysis rubric: Measuring features of thriving program.** S. V. Chasteen & R. E. Scherr, *Physics Review Physics Education Research*, 16, 010115, (2020). [Full text.](#)

**Initial findings of the physics teacher education program analysis rubric: What do thriving physics teacher education programs do?** R. E. Scherr & S. V. Chasteen, *Physics Review Physics Education Research*, 16, 010116, (2020). [Full text](#)

**Measuring faculty attitude change towards active learning with a retrospective pre-test,** S. V. Chasteen and R. Chattergoon, 2019 Physics Education Research Conference Proceedings (2019). [Full text.](#)

**Development and validation of the Physics Teacher Education Program Analysis (PTEPA) Rubric,** R. E. Scherr and S. V. Chasteen, 2018 Physics Education Research Conference Proceedings (2018). [Full text](#)



**Anatomy of STEM Teaching in North American Universities**, M. Stains, J. Harshman, M. K. Barker, S. V. Chasteen, R. Cole, S. E. DeChenne-Peters, M. K. Eagan Jr., J. M. Esson, J. K. Knight, F. A. Laski, M. Levis-Fitzgerald, C. J. Lee, S. M. Lo, L. M. McDonnell, T. A. McKay, N. Michelotti, A. Musgrove, M. S. Palmer, K. M. Plank, T. M. Rodela, E. R. Sanders, N. G. Schimpf, P. M. Schulte, M. K. Smith, M. Stetzer, B. Van Valkenburgh, E. Vinson, L. K. Weir, P. J. Wendel, L. B. Wheeler, A. M. Young, *Science*, 359 (2018). [Full text](#).

**Evaluation Methodology and Results for the New Faculty Workshops**, S. V. Chasteen, R. Chattergoon, E. Prather and R. Hillborn, 2016 Physics Education Research Conference Proceedings (2017). [Full text](#).

**Faculty Online Learning Communities to support physics teaching**, A. Rundquist, J. C. Corbo, S. Chasteen, M. S. Martinuk, C. R. Henderson and M. H. Dancy, Proceedings of the 2015 Physics Education Research Conference, 279 (2015). [Full text](#)

**Educational transformation in upper-division physics: The Science Education Initiative model, outcomes, and lessons learned**, S. V. Chasteen, B. Wilcox, M. D. Caballero, K. K. Perkins, S. J. Pollock and C. E. Wieman, *Phys. Rev. ST: Phys. Educ. Res.* 11, 020110 (2015). [Full text](#).

**Development and uses of upper-division conceptual assessment**, B. R. Wilcox, M. D. Caballero, C. Baily, H. Sadaghiani, S. V. Chasteen, Q. X. Ryan and S. J. Pollock, *Phys. Rev. ST: Phys. Educ. Res.* 11, 020115 (2015). [Full text](#).

**Examining the use of PhET interactive simulations in US College and High School classrooms**, K. K. Perkins, E. Moore, S. V. Chasteen, Proceedings of the 2014 Physics Education Research Conference (2014).

**The Colorado Upper-Division Electrostatics (CUE) Diagnostic: A conceptual assessment for the junior level**, S. V. Chasteen, R. E. Pepper, M. D. Caballero, S. J. Pollock and K. K. Perkins, *Phys. Rev. S.T.: Phys. Educ. Res.*, 8, 020108 (2012). [Full text](#).

**Thinking Like a Physicist: A Case Study in Transforming Upper-Division Electricity and Magnetism**, S. V. Chasteen, R.E. Pepper, S. J. Pollock, and K. K. Perkins, *Am. J. Phys.*, 80, 923 (2012). [Full text](#).

**Observations on Student Difficulties with Mathematics in Upper-Division Electricity & Magnetism**, R. E. Pepper, S. V. Chasteen, S. J. Pollock and K. K. Perkins, *Phys. Rev. Spec. Top.: Phys Ed. Rsrch*, 8, 010111 (2012). [Full text](#).

**Transforming the Junior Level: Outcomes from research and instruction in E&M**, S. V. Chasteen, R.E. Pepper, S. J. Pollock, and K. K. Perkins, *Phys. Rev. Spec. Top.: Phys Ed. Rsrch*, 8, 020107 (2012). [Full text](#).

**Teasing Out the Effects of Tutorials via Multiple Regression**, S. V. Chasteen, PERC Proceedings 2011, AIP Press, 2012. [Full text](#).

**Multiple Roles of Assessment in Upper-Division Physics Course Reforms**, S. J. Pollock, R. E. Pepper, S. V. Chasteen, K. K. Perkins, PERC Proceedings 2011, AIP Press, 2012. [PDF](#).

**Facilitating Faculty Conversations: Development of Consensus Learning Goals**, R. E. Pepper, S. V. Chasteen, S. J. Pollock, K. K. Perkins, PERC Proceedings 2011, AIP Press, 2012. [PDF](#)

**But Does It Last? Sustaining a Research-Based Curriculum in Upper-Division Electricity & Magnetism**, S. V. Chasteen, R. E. Pepper, S. J. Pollock, K. K. Perkins. PERC Proceedings 2011, AIP Press, 2012. [PDF](#).

**Upper-Division Students' Difficulties with Ampere's Law**, C. Wallace and S. V. Chasteen, *Phys. Rev. Spec. Top.: Phys Ed. Rsrch* 6, 020115. [PDF](#).

**A Thoughtful Approach to Instruction: Course Transformation for the Rest of Us**, S. V. Chasteen, K. K. Perkins, S. J. Pollock, C.E. Wieman. *J. Coll. Sci. Teach.* March/April 2011. [PDF](#).

**Our Best Juniors Still Struggle with Gauss' Law**, R. E. Pepper, S. V. Chasteen, S. J. Pollock, and K. K. Perkins, *PERC Proceedings 2010*, AIP Press, 2010. [PDF](#).

**The Use of Concept Tests and Peer Instruction in Upper-Division Physics**, S. J. Pollock, S. V. Chasteen, K. K. Perkins, M. Dubson, *PERC Proceedings 2010*, AIP Press, 2010. [PDF](#).

**Tapping into Juniors' Understanding of E&M: The Colorado Upper-Division Electrostatics (CUE) Diagnostic**, S. V. Chasteen, and S. J. Pollock, *PERC Proceedings 2009*, AIP Press (2009). [PDF](#).

**A Research-Based Approach to Assessing Student Learning Issues in Upper-Division Electricity & Magnetism**, S. V. Chasteen, and S. J. Pollock, *PERC Proceedings 2009*, AIP Press, 2009.

**Longer term impacts of transformed courses on student conceptual understanding of E&M**, S. J. Pollock and S. V. Chasteen, *PERC Proceedings 2009*, AIP Press, 2009.

**Transforming Upper-Division Electricity & Magnetism**, S. V. Chasteen, & S.J. Pollock, *PERC Proceedings 2008*, AIP Press, 2008.

**Cognitive Issues in Upper-Division Electricity & Magnetism**, S.J. Pollock & S.V. Chasteen, *PERC Proceedings 2008*, AIP Press, 2009. [PDF](#).

**The Salty Science of the Aluminum-Air Battery**, S. V. Chasteen, N.D. Chasteen, P. Doherty, *The Physics Teacher*, December 2008.

**Toward optimization of device performance in conjugated polymer photovoltaics: Charge generation, transfer and transport in poly(*p*-phenylene-vinylene) polymer heterojunctions.** S. V. Chasteen, V. Sholin, S. A. Carter, G. Rumbles. *Sol. Energy Mat. & Sol. Cells* (92), 651-659, 2008.

**The effect of broken conjugation on the excited state due to ether-linkage in a cyano-substituted poly(*p*-phenylene vinylene) conjugated polymer: CN-PPV vs. CN-ether-PPV**, S. V. Chasteen, G. Rumbles, S. A. Carter, J. Chem. Phys. (24), 214704, 2006.

**Blended versus Layered Structures in Polymer Photovoltaics**, S. V. Chasteen, J. O. Haerter, G. Rumbles, C. Scott, S. A. Carter. *J. Appl. Phys.* (99), 033709, 2006.

**Numerical Simulations of Layered and Blended Organic Photovoltaic Cells**, J. O. Haerter, S. V. Chasteen, S. A. Carter, J. C. Scott, *Applied Physics Letters* (86), 164101, 2005.

**Exciton Dynamics in Conjugated Polymer Photovoltaics: Steady-State and Time-Resolved Optical Spectroscopy**, S. V. Chasteen, *Ph.D. Dissertation*, December 2005.

**Exciton Dynamics and Device Performance in Polythiophene Heterojunctions for Photovoltaics**. S. V. Chasteen, S. A. Carter, G. Rumbles, *Proc. of SPIE* (5938), 59380J-1, 2005.

## NON-REFEREED PUBLICATIONS

### Education & Education Research

**Change Theory: Characteristics of Dissemination Success (CODS) Framework**. S. V. Chasteen, [ascnhighered.org](http://ascnhighered.org), published March 2022. [Full text](#).

**How do I develop student learning outcomes for physics courses?** S. V. Chasteen, [PhysPort.org](http://PhysPort.org), published August 12, 2021. [Full text](#).

**Review: A landmark study reconsidered**, S. V. Chasteen (Book Review, *Physics Today*, 74(1), 2021). [Full text](#).

**Introduction to the Physics Teacher Education Program Analysis (PTEPA) Rubric**, R. E. Scherr, S. V. Chasteen and M. Plisch (American Physical Society, College Park, MD, 2018). [Full text](#).

**How do I help students engage productively in active learning classrooms?** Series of Expert Recommendations, 9 articles, [PhysPort.org](http://PhysPort.org). <http://bit.ly/FramingProject>

**Review: *Teaching and Learning STEM* by Richard Felder and Rebecca Brent**, Book review, *Physics Today*, 2017.  
[Full text.](#)

**Using PhET Interactive Simulations**, Series of Expert Recommendations, 6 articles, PhysPort.org.  
<http://bit.ly/29shiDn>

**PER Press Releases**, *Physics Education Research Leadership Organizing Council*, 2012.  
<http://www.compadre.org/per/press/>

**Teaching with Learning Assistants online module**, *SERC* (2010). <http://bit.ly/atzeHU>

**Professional Development Guide: Physics for the 21<sup>st</sup> Century**. *Harvard-Smithsonian Center for Astrophysics and Annenberg Media*. (2010). <https://www.learner.org/courses/physics/>

**Speaking of Physics: The Art of Science Communication**. *American Physical Society Forum on Education newsletter*, Spring 2010.

**Physicists' Guide for *Adopt a Physicist* program**. *American Institute of Physics*. December, 2009.

**Response to Classroom Clickers and the Cost of Technology**, Letter to the Editor, *The Chronicle of Higher Education*, January 2009.

**Why Physics Teachers Should Read Blogs**, Websights column, *The Physics Teacher*, December 2008.

**Podcasts in the Mathematics Classroom**, *The California Mathematics Council Communicator*, December 2008.

**Blogger**, Sciencegeekgirl blog. <http://blog.sciencegeekgirl.com>, twitter @sciencegeekgirl, 2008-present.

## Evaluation

**Enhancing Learning by Requiring Written Project Responses**. Blog post on American Evaluation Association "AEA 365" blog. [Full text.](#)

**Helping clients develop Theories of Change as an external evaluator**. Two-part blog series on American Evaluation Association "AEA 365" blog. Full text [post 1](#) and [post 2](#).

**Visualizing results from an evaluative rubric**. Two-part blog series on American Evaluation Association "AEA 365" blog. Full text [post 1](#) and [post 2](#).

## Video and Podcast Productions

**PhET Video series**: Series of over 20 videos about PhET, teaching with PhET, and facilitating activities in K12 classrooms (2012-2016). <https://www.youtube.com/user/PhETInteractiveSims/playlists>

**Virtual New Faculty Workshop**, PhysPort (2015). <https://www.physport.org/nfw/>

**Tutorials in Introductory Physics Video Series**, PhysPort (2015). <http://bit.ly/1OiNvMG>

**MOOC Module: Writing Learning Goals**, CIRTl, (2015). <http://stemteachingcourse.org>

**SEI Clickers and Group Work Video Series** (2010-2014). <http://stemvideos.colorado.edu>

**Learning about Teaching Physics Podcast Series** (2011). <https://www.physport.org/podcasts/>

**Beyond Penguins Podcast**, NSDL (2008-2010). <http://beyondpenguins.nsdl.org/podcast>

**SmallTalk podcast**, NISE Net (2007-2008). <http://www.nisenet.org/podcasts>

**Science Teaching Tips podcast**, Exploratorium (2006-2007). <http://exploratorium.edu/ti/podcasts>

## Popular Press

- Variation on an Infinity of Triangles.** *JILA Research Highlights*, February, 2012.
- No Free Lunch for Entangled Particles.** *JILA Research Highlights*, January 2012.
- Schrodinger Cats Light the Way.** *JILA Research Highlights*, January 2012.
- Simulating a Starquake,** *JILA Research Highlights*, December 2012.
- Cracking the Story of Fracture.** *Physical Review Focus*, January 29, 2010.
- How a Scientist Becomes a Freelance Science Writer,** *National Association of Science Writers website*, January 2010.
- Cool Facts about Heat.** *Beyond Penguins and Polar Bears webzine*, December, 2009.
- Nuclear Waste Management after Yucca Mountain,** *Science Magazine Podcast*, July 17, 2009.
- Tiger Moths Jam Bat Sonar,** *Science Magazine Podcast*, July 10, 2009.
- Inside Mother of Pearl,** *Physical Review Focus* (an APS publication), July 2007.
- Inside a Solar Cell,** web interactive for *PBS NOVA* (2007), <http://www.pbs.org/wgbh/nova/solar/inside.html>
- Causal Relations: HIV in Guinea,** *Science & Spirit* (bimonthly magazine), May/June 2005.
- You're Not as Great as You Think You Are,** *Science & Spirit*, May/June 2004.
- Light Wave Outlasts Itself,** *Physical Review Focus*, May 12, 2004.
- Life Beyond Bars,** *Science & Spirit*, March/April 2004.
- Electronic Voting Unreliable Without Receipt,** *Stanford Report*, Feb. 18, 2004.
- Who Owns the Wind?** *Science & Spirit*, January/February 2003.
- City Buildings Rely on Renewable Power Sources,** *Santa Cruz Sentinel*, May 16, 2003.
- Bait & Switch,** *Science & Spirit*, May/June 2003.
- Sex and Gender Scientists Explore a Revolution in Evolution,** *Stanford Report*, Feb. 16 2003.
- Future Farmers,** *Santa Cruz Sentinel*, February 1, 2003.
- Cosmos "Big Bubble" Theorist Alan Guth to Lecture,** *The Stanford Report*, Jan. 22, 2003.
- Down on the (Research) Farm,** *Science's Next Wave* (AAAS), Nov. 21, 2002.
- Solar Power Still Too Expensive,** *Santa Cruz Sentinel*, November 10, 2002.
- Solar Energy Research Heats Up,** *Santa Cruz Sentinel*, Page 1, Nov. 10, 2002.