

# STEPHANIE V. CHASTEEN

CURRICULUM VITAE

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## BACKGROUND SUMMARY

Ph.D. Physicist creating college educational reform through effective communication and support of research-based instructional techniques. Possess over 10 years' experience in communication and education, plus persistence, organization and creative passion.

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## PROVEN SKILLS

### RESEARCH AND EVALUATION

- Evaluation planning
- Surveys, interviews, focus groups
- Data analysis & basic statistics
- Reports & publications

### CREATIVE SKILLS

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

### HIGHER EDUCATION

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

### PROJECT MANAGEMENT

- Efficient completion of deliverables
- Group facilitation
- Event planning

## 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

SCIENCE EDUCATION CONSULTANT – *Chasteen Educational Consulting*. • Self-employed. 2002-present. Support research-based educational reform: See client list below.

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

COURSE TRANSFORMATION SPECIALIST - *Center for STEM Learning, CU-Boulder* • Dr. Anne-Barrie Hunter. 2015-2016. Provided professional development around teaching and learning for STEM faculty.

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

MEDIA DIRECTOR - *PhET Interactive Simulations, CU Boulder* • Dr. Kathy Perkins. 2013-2016. Produced video series aimed at K-12 and college instructors, about effective ways use of PhET simulations.

OUTREACH DIRECTOR - *Science Education Initiative, CU-Boulder* • Dr. Kathy Perkins. 2010-2012. Initiated outreach program aimed at college STEM instructors, including videos and short guides.

LECTURER. Science Discovery, University of Colorado Boulder. Inquiry-based physics class for children 8-10, 2008.

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*

APS GRADUATE EDUCATION CONFERENCE, Graduate Education and Bridge Conference in Physics, *American Physical Society*, Dr. Ted Hodapp, 2017.

BPUPP TASK FORCE, Best Practices for Undergraduate Physics (BPUPP) Task Force, *American Physical Society*, Dr. Ted Hodapp, 2017.

RIT TEACHING TRIADS: Building Community and Transforming Practice with Faculty Triads, *Rochester Institute of Technology*, Dr. Scott Franklin, 2016-2019.

PHYSTEC: Physics Teacher Education Coalition II (PhysTEC-II), and PhysTEC Conference *American Physical Society*, Dr. Monica Plisch, 2016-2017.

PSDW: Professional Skills Development Workshops for Women, *American Physical Society*, Dr. Ted Hodapp, 2016.

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

NEW FACULTY WORKSHOP: 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.

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

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

### *WRITING, EDITING AND RESEARCH*

J-TUPP 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.

EDITORIAL BOARD. PhysPort.org, Seattle, WA • Dr. Sarah McKagan. Reviewed website content aimed at physics teachers and provided editorial feedback. 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, “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.

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.

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

PUBLIC SCIENCE WRITING. JILA Communications Office, CU-Boulder • Julie Phillips. Wrote public-facing articles about scientific findings from JILA researchers. 2011.

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.

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.

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.

FREELANCE SCIENCE JOURNALIST. Variety of clients; see Online and Popular Press for list of publication. Published over a dozen articles on science for public audience in print, web, radio, and press-release format, 2000-2008.

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

### *PROJECT MANAGEMENT*

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

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

### *PROFESSIONAL DEVELOPMENT*

PEDAGOGICAL WORKSHOPS: See “Professional activities” for list of common 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.

# GRANTS, AWARDS, & FELLOWSHIPS

## LEADERSHIP POSITIONS

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

Founding member, Accelerating Systemic Change Network (ASCN) Working Group 3, “Leadership and professional development.”

Advisory board member, PhysPort.org, 2014-2016.

Reviewer: Journal of College Science Teaching, International Journal of Science Education, Physical Review Special Topics – Physics Education Research, The Physics Teacher. 2008-present.

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

Volunteer mentor: Adopt-a-Physicist. 2009-2011.

Founding member and steering committee, Boulder Area STEM Education Coalition, 2011-2014.

## GRANTS

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, NSF-IUSE, *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-present

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.

### *INTERVIEWS AND MENTIONS*

Seeking the Warm Spot: A nonlinear career in writing and education, Agora blog from L'Oreal Foundation. <http://bit.ly/GLLbe9>

STEMinist Profile, Blog about women in science, <http://bit.ly/GKtx4G>

How a scientist became a freelance science writer, National Association of Science Writers site.

Spotlight on Hidden Physicists: Stephanie Chasteen. Radiations magazine of Sigma Pi Sigma (The Physics Honors Society), Fall, 2009.

Members in the News, American Association of Physics Teachers eNNOUNCER, September 2010. Mention and link to sciencegeekgirl blog.

Educators that Rock series for findingEducation, March 2010. <http://bit.ly/bL3Gka>

Forum on Graduate Student Affairs, American Physical Society, 2007. <http://bit.ly/bTTLdo>

NetWatch: The NanoBeat. Science Magazine: Random Samples. SmallTalk podcast featured, March 2007. <http://bit.ly/bjrKYW>

## PROFESSIONAL ACTIVITIES

### *CONFERENCE ORGANIZER*

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.  
<http://www.colorado.edu/csl/community-college-conference>

Prioritizations and Standardizations for Next-Generation PhET Simulations, CU-Boulder, February 17-19, 2014, conference organizer, <http://spot.colorado.edu/~chasteen/Moore/index.html>

What Can We Learn About Learning from Research in Museums, Media, and Other Informal Environments? Session organizer, AAPT Winter Meeting, Ontario, CA, February 8, 2012.

### *WORKSHOPS*

These workshops have been offered dozens of times.

Are Clickers Right for You?

Writing Great Clicker Questions

Facilitating Clicker Questions Effectively

Teaching Faculty about Effective Clicker Use

Writing Learning Goals to Drive Instruction and Assessment.

Techniques for Monitoring Understanding and Evaluating Students.

Make Clickers Work for You: 4-8 hour workshop series

Learning Goals and Assessment: 4-8 hour workshop series

Other workshops include:

Getting Around Student Pushback and Passiveness in Active Learning Classrooms, Faculty Teaching Excellence Program, Boulder CO (2016).

The Art & Science of Teaching: Some ideas from (physics) education research, with Steve Pollock, A Career Development Workshop for NSF Geoscience Postdoctoral Researchers, UCAR, Boulder CO (March 10, 2016).

Assessment in College Physics, Workshop for New Faculty in Physics and Astronomy, Washington DC (June 16, 2014).

Making the Global Local: Evidence for Climate Change in Colorado. Science Hubs, Colorado Springs, CO (March 6, 2012); CSC, Denver CO (November 11, 2011); Teaching Outside the Box, Boulder, CO (April 30, 2011).

Using Clickers in Museum Environments. Pacific Science Center, Seattle, WA (January 10, 2011).

Inquiry Structure for Learning Science Content (with Barry Kluger-Bell). Colorado Science Conference, Denver CO (November, 2010); Resource Area for Teachers (RAFT), Denver CO (August, 2010).

What Every Teacher Should Know About Cognitive Research. University of Oregon Science Literacy Group, Eugene, OR (April, 2012); Computer Science GK12 Fellows meeting, University of Colorado at Boulder (February, 2010); Project EXTREMES GK12 Fellows meeting, University of Colorado at Boulder (November, 2011); CSC, Denver, CO (November, 2009 and November, 2011).

Using PhET in the Classroom, NSTA, Minneapolis, MN (October, 2009); NSTA, Phoenix, AZ (December, 2009); Technology in Education Conference, Copper Mountain, CO (July, 2009).

Solid Ways to Teach Fluids, CSC, Denver, CO (November, 2007).

Demonstrations and Ideas from the Exploratorium, CO-AAPT, Wheat Ridge, CO (October, 2008)

Using and Making Audio Podcasts in the Mathematics Classroom, California Mathematics Council, Asilomar CA (June, 2007)

Attack of the Podpeople: Creating and using podcasts in the classroom, Exploratorium, San Francisco (May, 2007).

Sparking Excitement for Electricity: Electrostatic activities that work. CMSESMC Math/Science Conference, Redwood City (June, 2007).



## PROFESSIONAL TALKS

Twenty years of influencing change: Evolution and impact of the AAPT/APS Workshop for New Faculty in Physics and Astronomy, National Association of Biology Teachers, Denver CO (November 5, 2016).

Support structures for embedded experts, Transforming Education, Stimulating Teaching and Learning Excellence (TRESTLE) national meeting, Boulder CO, October 21, 2016.

Embedded Experts: A productive approach to transforming undergraduate STEM education, AAPT, Sacramento CA (Summer 2016).

The Science Education Initiative: An Experiment in Scaling up Educational Improvements in a Research University, *invited speaker*, Rutgers University, New Jersey (March 22, 2016). Transforming Institutions conference, Purdue University (October 23, 2014)

The Quasi-Linear Dynamics of a Career in Science Education. *Invited Speaker*, University of California Santa Cruz Women in Physics Conference (January 22, 2015), *Plenary Speaker*, University of Oregon Women in Science Group, Portland, OR (April 28, 2012); *Invited speaker*, University of Oregon Women in Science Group, Portland, OR (November 11, 2011); *Invited Speaker*, Duke University Graduate Group, Durham, NC (September 27, 2013).

Eight years of change: Outcomes from the Science Education Initiative, AAPT, Minneapolis MN (Summer, 2014).

A scholarly approach to science education: A research-validated approach to transforming junior E&M, Colloquium, Duke University (September 24, 2013).

Introducing students to active learning: "Framing" strategies, AAPT, Portland, OR (2013).

Getting the Word Out: Effective Communication of the Results of Our Work in Physics Education Research. *Plenary Speaker*, Foundations and Frontiers of Physics Education Research, Puget Sound, Seattle, WA (March 2011); *Invited speaker*, Global Physics Department, online (November 2, 2011); AAPT, Ontario, CA (February 6, 2012). University of Maryland special talk (December 10, 2013).

Clickers in context: How is peer instruction used in the classroom (and what works?) Special seminar, University of California at Santa Cruz (January 23, 2012).

Clickers in context: How is peer instruction used in the classroom (and what works?) *Invited speaker*, Department Colloquium, Oregon State University Physics Dept. (October 17, 2011)

Adopt, Adapt, or Abandon? Instructors' Decisions to use Research-Based Materials, AAPT, Omaha, NE (August, 2011).

Speaking of Physics: The Art of Science Communication. University of West Virginia Colloquium, Morgantown, WV (March 2, 2012); *Invited panelist*, AAPT, Omaha NE (August, 2011); , Department Colloquium, Physics Dept., San Jose State University, San Jose CA (October, 2006).

Learning Goals and Bloom's Taxonomy. Guest lecturer, "Teaching and Learning of Biology" course, CU-Boulder biology department (Feb. 11, 2011).

Alternative Careers in Media. Beyond Boulder student career panel. *Invited panelist*, (Feb. 25, 2011).

Translating Discipline-Based Education Research to K12 Teachers, S. Chasteen and T. Loeblein. iSTEM Teacher Professional Development Mini-Symposium. *Invited speaker*, Boulder CO (Sept 2, 2010).

Facing Facebook: Using Social Media In and Out of the Classroom. *Invited panelist and speaker*, AAPT, Portland OR (July, 2010).

What (most) Physicists (don't) Do: Alternative Careers in Science. *Invited speaker*, Carleton College, MN (April 2010).

Flirt Harder, I'm a Physicist. *Invited speaker*, Women in JILA group, CU Boulder (October, 2009).

Thinking Like a Physicist: Transforming Upper-Division Electricity and Magnetism, Carleton College Colloquium, MN (April 2010); New England AAPT, Durham NH (October, 2009).

A Research-Based Transformation of Junior Electricity and Magnetism. APS, Denver CO (March, 2009).

Clicker Use in Upper-Division Courses, *Invited speaker*, AAPT, Chicago, IL (February, 2009); Colorado Learning and Teaching with Technology Conference, Boulder CO (August, 2009).

Transforming Upper-Division Electricity & Magnetism, APS, Denver, CO (March, 2007).

Transforming Upper-Division E&M, AAPT, Edmonton, AB (July, 2008).

Get the Word Out: My Life as a Scientist Communicator, *invited speaker*, Ecological Society of America, San Jose, CA (March, 2007)

Hear Me Out: Communicating Nanotechnology through Podcasts. Communicating Science to Broader Audiences, Lincoln, NE (December, 2007)

SmallTalk: Conversations about Nanotechnology through Podcasts, AAPT, Seattle WA (July, 2007).

## POSTERS

The "embedded expert" model of educational transformation: The SEI and TRESTLE. S.V. Chasteen and K. K. Perkins, AAPT, Sacramento CA (Summer 2016).

Evaluating the Workshop for New Physics and Astronomy Faculty, S.V. Chasteen, R. Chattergoon, E. Prather, B. Hilborn, AAPT, Sacramento CA (Summer 2016).

The CU Science Education Initiative: Examining the Model and its' Impact, S. V. Chasteen, D. Caballero, K. Perkins, C. E. Wieman, , AAPT, Minneapolis MN (Summer, 2014).

The University of Colorado Science Education Initiative free instructor, course and workshop materials, S. V. Chasteen and K. K. Perkins, AAPT, Portland OR (August 2013).

“Framing” strategies for promoting a productive active learning classroom, S. V. Chasteen, A. Boudreau, J. Gaffney, AAPT, Portland OR (August 2013).

Teasing Out the Effect of Tutorials, S. V. Chasteen, PERC, Omaha, NE (August 2011).

Learning About Teaching Physics: A new audio podcast on physics education research for teachers. S. V. Chasteen and M. Fuchs, AAPT, Omaha, NE (August, 2011) and Ontario, CA (February, 2012).

But Does it Last? Sustaining Upper-Division Transformations in Electricity and Magnetism. S. V. Chasteen, R. E. Pepper, S. J. Pollock, K. Perkins. Center for Integration of Research, Teaching and Learning, Madison, WI (October, 2011); Foundations and Frontiers of Physics Education Research, Puget Sound, Seattle, WA (March 2011).

Translating Discipline-Based Education Research to K12 Teachers, S. Chasteen, K. Perkins, C. Wieman. iSTEM Teacher Professional Development Mini-Symposium, Boulder CO (Sept 2, 2010).

New Ways of Teaching Junior E&M – Descriptions and Results. S. V. Chasteen, S. J. Pollock, M. Dubson, E. Kinney, P. Beale and K. K. Perkins. AAPT, Portland OR (July 2010).

An Inside Look: Practical strategies for personal response systems (“clickers”). S.V. Chasteen. AAPT, Portland OR (July 2010); AAPT, Omaha, NE (August, 2011); AAPT, Ontario, CA (February, 2012).

But Does it Last? Sustaining Upper-Division Transformations in Electricity and Magnetism. S. V. Chasteen, R. E. Pepper, S. J. Pollock, K. Perkins. PERC, Portland OR (July, 2010).

Upper Division Transformations in Physics. S.V. Chasteen, S. Goldhaber, M. Dubson, E. Kinney, O. DeWolfe, P. Beale, K. Perkins, STEM Education Symposium, Boulder CO (August, 2009)

Thinking Like a Physicist: Transforming Upper Division Electricity & Magnetism, S. V. Chasteen, S. J. Pollock, M. Dubson, E. Kinney, P. Beale and K. Perkins, PERC, Ann Arbor, MI (July 2009);

Tapping into Juniors’ Understanding of E&M: Development of the CUE Assessment, S. V. Chasteen and S.J. Pollock, PERC, Ann Arbor, MI (July 2009).

Cognitive Issues in Upper Division E&M, S.J. Pollock and S.V. Chasteen, invited poster, PERC, Ann Arbor, MI (July 2009)

Transforming Upper Division E&M, S.V. Chasteen, S. Pollock, W. Handley, D. Tarshis, P. Beale, AAPT, Edmonton AB (July 2008)

Assessing Student Understanding in Upper Division E&M, S. V. Chasteen and S. J. Pollock, PERC, Edmonton AB (July 2008).

## REFEREED JOURNAL ARTICLES AND BOOK CHAPTERS

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 (in press).

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).

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).

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).

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).

Change from Within: The Science Education Initiative, S. V. Chasteen, and K.P. 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).

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).

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).

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).

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).

Teasing Out the Effects of Tutorials via Multiple Regression, S. V. Chasteen,, PERC Proceedings 2011, AIP Press, 2012.

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.

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.

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.

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

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.

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.

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.

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).

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.

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