

Cassandra Paul

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EDUCATIONAL BACKGROUND

Ph.D. in Physics, September 2012, *University of California-Davis*, Davis, California

- Concentration: Physics Education Research
- Advanced to Candidacy Effective March 2009

M.S. in Physics, December 2005, *University of Wyoming*, Laramie, Wyoming

- Concentration: Astrophysics, Post-Starburst Quasars

B.A. in Physics, May 2002, *Oswego State University*, Oswego, New York

- Minor in Astronomy
- Honors Program Graduate

RESEARCH EXPERIENCE

Dissertation: *Investigation of the Interactions Between Instructors and Students in an Introductory Interactive-Engagement College Physics Course.* Completed: August 2012
Examined instructor-student interactions in the physics classroom; Co-developed computer program called the Real-time Instructor Observing Tool (RIOT) to categorize and record instructor-student interactions during real-time classroom observations; Developed protocol for using this tool, and examined its strengths and weaknesses; Analyzed interaction trends across different instructors, students, curriculum and over time; Investigated the effect of different interactions on student attitudes and student achievement.

Doctoral Research

- **Instructor-Student Interaction effect on Student Achievement:** Do certain types of interactions correlate with student exam performance? *University of California-Davis*, 2010-2011
- **Instructor-Student Interaction Variability Study:** Do instructors have similar interactions with students over the length of the course? *University of California-Davis*, 2009
- **Instructor-Student Interaction Study:** What is the range of instructor behaviors in an interactive engagement course? *University of California-Davis*, 2008

Masters Research

- **Cataloging the Post-Starburst Quasar Population:** Classified thousands of objects as Post-Starburst Quasars. *University of Wyoming*, 2004-2006

PUBLICATIONS

Peer Reviewed Journal Articles

- **Paul, C., West, E. A., Using the Real-time Instructor Observing Tool (RIOT) for personal reflection on Teaching Practice** *The Physics Teacher* 56, 139 (2018)
- Roseler, K., Paul, C., Harwood-Theisen, C., Felton, M. **Knowing what to look for: Identifying the key features of evidence-based practices for STEM instructors.** (Accepted to *Journal of College Science Teaching* - April 2018)
- **Paul, C., Potter, W.H., Weiss, B. Grading by Response Category: A simple method for providing students with meaningful feedback on exams in large courses** *The Physics Teacher* 52 (8), 485-488 (2014)

- Potter, W.H. Webb, D. **Paul, C. A.**, West, E. A., Bowen, M., Weiss, B., Coleman, L., DeLeone, C., **Sixteen years of Collaborative Learning through Active Sense-making in Physics (CLASP) at UC Davis** *American Journal of Physics* 82 (2), 153-163 (2014)
- West, E. A., **Paul, C. A.**, Webb, D., Potter, W.H. **Variation of Instructor Student Interactions in an Introductory Interactive Physics Course** *Phys.Rev. ST Phys. Ed* (March 2013)
- S.L. Cales, M.S. Brotherton, Zhaohui Shang, Vardha Nicola Bennert, G. Canalizo, R.Stoll, R. Ganguly, D. Vanden Berk, **C. Paul**, A. Diamond-Stanic **Hubble Space Telescope Imaging of Post-Starburst Quasars** *The Astrophysical Journal*, Vol. 741, No. 2. (10 November 2011)

PRESENTATIONS & ABSTRACTS

Conference & Colloquium Talks

- **Paul, C.A. INVITED: “Impact of student-centered assessment techniques on student success in CLASP”** *American Association of Physics Teachers*, Washington D.C., Summer 2018
- **Paul, C.A.**, Webb, D., Chessey, M. “Are all grade-scales created equal?” *American Association of Physics Teachers*, San Diego, CA Winter 2018
- **Paul, C.A. INVITED PLENARY: “Thinking about equity and systemic change”** *Foundations and Frontiers of Physics Education Research – Bar Harbor, ME*, July 2017
- **Paul, C.A. INVITED: “Choosing to Attend College Forever: Life as a Professor and Physics Education Research at San Jose State University”** *University of California – Davis, Davis, CA*, May 19th, 2017
- **Paul, C.A., INVITED: “Reflecting on Active Classroom Environments”** *San Jose State University Academic Senate Annual Retreat*, San Jose, CA, January 27th, 2017
- **Paul, C.A.**, Roseler, K., Harwood Theisen, C. “**SPOTing Effective Teaching: An Engaging and Reflective Faculty Workshop Series**” *American Association of Physics Teachers, Sacramento, CA* July 17th-20th 2016
- Chase, A., **Paul, C.** “**The Effects of Grader Assessment Feedback on Student Self-Regulation**” *American Association of Physics Teachers, Sacramento, CA* July 17th-20th 2016
- **Paul, C. INVITED PLENARY: “STEM faculty professional development with RIOT and SPOT”** *Foundations and Frontiers of Physics Education Research Puget Sound - Diablo, WA*, June 16th - 19th 2016
- Hickok, E., **Paul, C.**, “**Guiding laboratory reform and professional development using RIOT data.**” *American Association of Physics Teachers, New Orleans, LA* Winter 2016
- Chase, A., **Paul, C.**, “**The effects of Grader Assessment Feedback on Student Self-Regulation**” *American Association of Physics Teachers, New Orleans, LA* Winter 2016
- Harwood Theisen, C., **Paul, C.**, Roseler, K. “**SPOTing Effective Teaching: Promoting Critical Reflection Using an Observation Tool**” *Professional and Organizational Development conference- San Francisco, CA* Fall 2015
- Chase, A., **Paul, C.** “**Adapting CLASP for San José State: Successes and Challenges**” *American Association of Physics Teachers, College Park, MA* Summer 2015
- Roseler, K., **Paul, C.**, Theisen, C. H. “**Developing SPOT: A tool for understanding student engagement STEM classrooms**” *American Association of Physics Teachers, College Park, MA* Summer 2015
- **Paul, C. INVITED: “SPOTing each other is a RIOT! – Using observational protocols to support pedagogical success in the classroom”** - *California State University – San Marcos*, April 28th, 2015

- **Paul, C. INVITED:** “Adapting the UC Davis CLASP curriculum for use at SJSU” - *California State University – San Marcos*, April 28th, 2015
- **Paul, C. INVITED:** “RIOTing the right SPOT for STEM education reform: How observation protocols can work as a catalyst for reform in Higher Education.” – *University of California – Berkeley*, CA April 27th, 2015
- **Paul, C. INVITED:** “The Real-time Instructor Observing Tool for Future Teachers” *PhysTEC Conference* Austin, TX: May 19-20, 2014
- **Paul, C.** “Workshop: How interactive is your classroom?” *Astronomical Society of the Pacific – Cosmos in the classroom*, July 2013
- **Paul, C.** “To what extent are TAs providing opportunities for students to engage in classroom discourse?” *American Association of Physics Teachers Conference*, New Orleans, January 2013
- **Paul, C. INVITED:** “Instructor Interaction: Implications for Teaching Assistants in an Interactive-Engagement Large-Enrollment Introductory Physics Course” *Foundations and Frontiers in Physics Education Research*, Bar Harbor, ME, June, 2011
- **Paul, C.** “Observing Instructor-Student Interactions using the Real-time Instructor Observing Tool (RIOT)” *University of Washington Physics Education Research Group*, June 2011
- **Paul, C.** “Effect of TA on Student Achievement in a Reformed Setting” *Mallinson Institute for Science Education, University of Western Michigan*, March, 2008

Poster Presentations

- Fuller, L., **Paul, C.A.** “Gendered and Racialized Narratives in a High School Physics Classroom” *American Association of Physics Teachers*, San Diego, CA January 2018 (submitted)
- Pink, M., **Paul, C.A.** “Exploring Engineering Course Enrollment Trends in High School” *American Association of Physics Teachers*, San Diego, CA January 2018 (submitted)
- Seremeta, O., **Paul, C.A.** “Real-time Instructor Observing Tool (RIOT) for Teacher Professional Development” *American Association of Physics Teachers*, San Diego, CA January 2018 (submitted)
- Smith, Z., **Paul, C.A.** “Updating the Real-time Instructor Observation Tool Usability and Collaboration Features” *American Association of Physics Teachers*, San Diego, CA January 2018 (submitted)
- **Paul, C.A.**, Webb, D., Chessey, M., Potter, W., “Demographics of success in CLASP courses at UC Davis” *annual Physics Education Research Conference, Cincinnati, OH*, July, 2017
- Hartman, K. D., **Paul, C.**, Smith, Z., Hickok, E. “Comparison of pedagogical features of introductory physics learning environments” *American Association of Physics Teachers, Atlanta, GA* July February, 2017
- **Paul, C.**, Hartman, K. D., Smith, Z., “Examining the utilities of different classroom observational protocols” *American Association of Physics Teachers, Atlanta, GA* July Winter 2017
- Cheney, K. A. , Chase, A., **Paul, C.** “The Effects of Grader Assessment Feedback on Student Motivation” *American Association of Physics Teachers, Sacramento, CA* July Summer 2016
- Hartman, K. **Paul, C.** “Examining the pedagogical fidelity of an adopted curriculum” *American Association of Physics Teachers, Sacramento, CA* July Summer 2016
- **Paul, C.** “Using RIOT data to understand interactive classroom pedagogy.” *American Association of Physics Teachers, New Orleans, LA* Winter 2016

- Roseler, K., Paul, C., Theisen, C. H., “Using the Student Participation Observation Tool (SPOT) for faculty professional development.” *Physics Education Research Conference*, College Park, MA Summer 2015
- Chase, A., Paul, C., “How grader assessment feedback affects student self-regulation” *Physics Education Research Conference*, College Park, MA Summer 2015
- Hickok, E., Paul, C., “Teaching practices of graduate teaching assistants” *Physics Education Research Conference*, College Park, MA Summer 2015
- Paul, C., Roseler, K., Ma, C., Lorelli, S. Theisen, C. “Using the Student Participation Observation Tool for Faculty Professional Development” *American Association of Physics Teachers*, San Diego, CA Winter 2015
- Chase, A., Paul, C. “Investigating Student Responses to the Grading by Category Assessment Method” *American Association of Physics Teachers*, San Diego, CA Winter 2015
- Reid, A., Roseler, K., Paul, C. “Examining the Impact of Assessment Format on Student Problem Solving” *American Association of Physics*, San Diego, CA Winter 2015
- Paul, C., Roseler, K., Reid, A., Harwood Theisen, C., and Felton, M. “Student Participation Observation Tool (SPOT): A new platform in the real-time suite” Poster presented at the Physics Education Research Conference, Minneapolis, MN, 2014
- Paul, C., Reid, A., “The Real-time Instructor Observing Tool; Instructor consistency and beta testing” *Foundations and Frontiers in Physics Education Research*, Bar Harbor, ME, June, 2013
- Paul, C., West, E.A., Webb, D., Potter, W. H. “Grading By Category: Enabling Assessment of Understanding (as used in the CLASP curriculum)” *American Association of Physics Teachers and Physics Education Research Conference*, Omaha, NE, Summer 2011
- Paul, C. West, E.A., Webb, D., Potter, W. H. “Important Types of Instructor-Student Interactions for Student Achievement in Reformed Courses” *American Association of Physics Teachers and Physics Education Research Conference*, Portland, OR, Summer Meeting 2010
- Paul, C. West, E.A., Webb, D., Weiss, B., Potter, W. H. “Graduate-Student Teaching Assistants: A Crucial Element in Improving Undergraduate Physics” *American Physical Society and American Association of Physics Teachers*, Washington D.C. February, 2010
- Paul, C. Ashbaugh, E. Webb, D., Potter, W. H. “TA Behaviors and their Effect on Student Achievement” *American Association of Physics Teachers and Physics Education Research Conference*, Edmonton, Alberta CAN, Summer 2008
- Paul, C. Brotherton, M. S., Diamond-Stanic, A. M., Vanden Berk, D., Canalizo, G. “The Post-Starburst Population” *American Astronomical Society*, San Diego, CA, Winter Meeting 2005

Conference Proceedings, Newsletters, and Bulletins

- Paul, C.A., Webb, D., Chessey, M., Potter, W., “Demographics of success in CLASP courses at UC Davis” *Conference Proceedings of the annual Physics Education Research Conference*, Cincinnati, OH, (revise and resubmit July, 2017)
- Paul, C.A., “An Entry S.P.O.T. for reform in the landscape of STEM Pedagogy” *American Physical Society Forum on Education Newsletter*, Fall 2016
- Brotherton, M., Cales, S., Ganguly, R., Shang, Z., Canalizo, G., Paul, C., Diamond-Stanic, A.M. **Post-Starburst Quasars** *International Astronomical Union Symposium*, Vol.267, May 2010, pp. 105-105

- Cales, S., Brotherton, M. S., Shang, Z., Bennert, N., Canalizo, G., Stoll, R., Ganguly, R., Vanden Berk, D., **Paul, C.**, Diamond-Stanic, A.M. **HST/ACS Snapshot Imaging of 29 Post-Starburst Quasars** *American Astronomical Society Meeting Abstracts*, BAAS Vol. 41, January 2009, pp. 454
- Brotherton, M. S., Stoll, R., **Paul, C.**, Diamond-Stanic, A., Shang, Z., Cales, S., Ganguly, R., Canalizo, G., Vanden Berk, D., **A Catalog of Post-Starburst Quasars** *American Astronomical Society Meeting Abstracts*, BAAS Vol. 38 (May 2007), pp. 95
- Stoll, R., Brotherton, M., **Paul, C.**, Shang, Z., Cales, S., **The Environments of Post-Starburst Quasars** *American Astronomical Society Meeting Abstracts*, BAAS Vol. 37, December 2005, pp.1354
- Dale, D., Barlow, R., **Paul, C.**, Rodgers, C., Allen, D., Canterna, R., Pierce, M., **WIRO Observations of GRB 050908** *GRB Coordinates Network*, Circular Service 3957, 1 (2005)

TEACHING EXPERIENCE

Assistant Professor

Duties: developed syllabus and all of course lectures; conducted lecture; held office hours; wrote quizzes and exams; graded student work

- **“Science Education Data Analysis Techniques”** (SCED 285) *San José State University*, Fall 2017 *note: different topic and format from previously 285 courses*
- **“Seminar on College Science Teaching and Learning”** (SCED 255) *San José State University*, Spring 2017
- **“Advanced Natural Science”** (SCI 255) *San José State University*, Spring 2015
- **“Methods of Research in Science Education”** (SCI/SCED 205) *San José State University*, Spring 2015, (Co-instructor Spring 2016)
- **“Theory and Practice in Science Education”** (SCI/SCED 220) *San José State University*, Fall 2014
- **“Seminar in Science Education”** (SCI/SCED 285) *San José State University*, Spring 2014, Spring 2015, Fall 2016
- **“Secondary School Science”** (SCED 173) *San José State University*, Spring 2013
- **“Foundations of Physics”** (PHY 2A) *San José State University*, Fall 2012, Fall 2013, Spring, 2014, Fall 2014, Fall 2015, Fall 2016
- **“Foundations of Physics Lab”** (PHY 2A) *San José State University*, Fall 2013, Fall 2017

Associate Instructor

Duties: independently developed syllabus and all of course lectures; conducted lecture; held office hours; wrote quizzes and exams; supervised graduate student teaching assistants; conducted teaching assistant meetings; oversaw labs and all grading; assigned final grades

- **“College Physics”** (PHY 007) Associate Instructor *University of California-Davis*, Summer 2008

Co-Instructor

Duties: co-developed syllabus, assessment, and lesson plans with instructor of record; lectured and conducted classroom activities/labs; graded assessments;

- **“Teaching Assistant Professional Development”** (PHY 371) Co-Instructor at *University of California-Davis*, Fall 2007, Fall 2008, Fall 2009
- **“Astronomy for Teachers”** Co-Instructor at *University of Wyoming*, Summer 2003

Teaching Assistant

Duties: conducted labs and classroom activities; graded exams/homework/labs; held office hours, ran extra help sessions; revised lab manual (Conceptual Physics)

- **“College Physics”** (PHY 007) Teaching Assistant at *University of California-Davis*, Fall 2006, Winter 2007, Spring 2007, Summer 2007, Spring 2008, Winter 2010, Summer 2010
- **“Engineering Physics”** Teaching Assistant at *University of Wyoming*, Fall 2005
- **“College Physics”** Teaching Assistant at *University of Wyoming*, Fall 2003, Spring 2004
- **“Conceptual Physics”** Teaching Assistant at *University of Wyoming*, Fall 2002, Spring 2003

Guest Lectures

- **“Theory and Practice in Science Education”** (SCI/SCED 220) *San José State University*, Topic: Current Research Efforts, Instructor of Record Dr. Elly Walsh, Fall 2015, Fall 2016, Fall 2017
- **“Methods of Research in Science Education”** (SCI/SCED 205) *San José State University*, Topic: Quantitative Research Techniques in Science Education, Instructor of Record Dr. Elly Walsh, Spring 2016, Resa Kelly, Spring 2017
- **“Secondary School Science”** (SCED 173) Topic; Models in Physics; Instructor of Record Prof. Paula Messina; *San José State University*, Fall 2012
- **“Introductory Astronomy”** Topic: Stellar Evolution; Instructor of Record; Prof. Mike Brotherton; *University of Wyoming*, Spring, 2006

ACADEMIC SERVICE

Graduate Program Coordinator Science Education Program *San José State University*, Fall 2014 – present

Description: Meet with all current Science Education graduate students yearly, advertise our MA program, upkeep MA program website, make decisions about accepting and rejecting new MA students, ensure proper paperwork is filed for all graduate students, hold info sessions for prospective graduate students

Coordinator of “Science Education Journal Club” *San José State University* Spring 2013, Fall 2013

Description: interdisciplinary collaboration of faculty, staff & students interested in current science educational research findings

Committees and Organizations

- **“Graduate Studies and Research Committee”** **University Committee, represented College of Science**, *San José State University* (Fall 2015-Spring 2016)
- **“Scholarship Committee”** Department of Physics & Astronomy *San José State University* (Spring 2016-present)
- **“Faculty Recruitment Committee”** Department of Physics & Astronomy *San José State University* (Fall 2014-Spring 2015)
- **“Program Assessment Committee”** Science Education Program *San José State University* (Fall 2014-Spring 2015)
- **“Assessment Committee”** Science Education Program *San José State University* (Fall 2016-present)
- **“Assessment Committee”** Department of Physics & Astronomy *San José State University* (2013-present)
- **“Curriculum Committee”** Department of Physics & Astronomy *San José State University* (2012-present)
- **“Graduate Education Task Force”** *University of California-Davis* (2011-2012)

- **Chair of “Chancellor’s Graduate and Professional Student Advisory Board”** (CGPSA) *University of California-Davis* (2010-2011)
- **“Graduate Student Association Executive Council”** *University of California-Davis* (GSA EC) (2010-2011)
- **“Graduate Council (Division of Academic Senate)”** *University of California-Davis* (2010-2011)
 - Graduate Council Sub-committee: **“Administrative Committee”**
Duties: deliberated and voted on student appeals regarding admission and qualifying exams
 - Graduate Council Sub-committee: **“Graduate Student Welfare Committee”**
Duties: brought issues of graduate student concern to larger Graduate Council

Creator and Facilitator of annual “Physics Graduate Student TA Pedagogy Workshop”
Department of Physics & Astronomy San José State University (2013, 2014, 2015, 2016, 2017)
Description: Full-day workshop for all physics graduate students with teaching responsibilities.

Graduate Student Assistant to the Dean and Chancellor

University of California-Davis (2011-2012) Duties: acted as a liaison between administration and graduate student body; organized informational and community events for graduate students;

- **Official Organizer for “Week of Orientation and Welcome”** (WOW) for new graduate students. WOW Details: Six days of both fun and informative events for over 400 students; organized all of the presentations, and handled all aspects of food, publicity and logistics.
- **Official Co-Director for the “Interdisciplinary Graduate and Professional student Symposium”** (IGPS) Event Details: campus-wide interdisciplinary with over 150 presenters, and a budget of more than \$20,000; Duties: coordinated all volunteer groups, solicited abstracts, assisted in paper selection,
- **Effectively changed Graduate Studies policy** regarding compensation plan for graduate students

Founder of “Graduate Teaching Community” *University of California-Davis* Spring 2009

Description: interdisciplinary collaboration of graduate students interested in improving their teaching, learning and educational skills

- **Facilitator of weekly discussions** on college teaching 2009-2010
- **Procured annual funds from Teaching Resources Center** (now: Center for Excellence in Teaching & Learning) for future facilitators of GTC to ensure program sustainability (\$1500 annually)
- At year three, GTC has more than two hundred fifty members on list-serve

Teaching Assistant Consultant Co-Coordinator, at *University of California-Davis*, 2009-2010
Duties: planned and facilitated weekly TA consultant meetings, paired and scheduled TA requests for TA consultants, engaged in conflict management between TACs

- Effectively changed the term new Teaching Assistant Consultants are introduced from Fall to Spring so that they were more prepared to facilitate the campus-wide TA Orientation

Teaching Assistant Consultant at *University of California-Davis*, 2008-2009, 2009-2010

Duties: observed graduate students in the classroom, interviewed students about their graduate student instructors; met with graduate students to discuss their teaching; designed and facilitated professional development workshops, and TA orientation;

- **Facilitator of Campus-Wide Teaching Assistant Orientation** Fall 2008, Fall 2009
- Workshop Leader: **“Active Inclusivity: Benefit from diversity in the classroom”** Spring 2010

- Workshop Leader: “**Crafting your Teaching Philosophy**” Winter 2010
- Workshop Leader: “**Coupling Assessment with Learning Goals**” Spring 2009
- Workshop Leader: “**Transitioning from Graduate Student to Professor: Becoming an Engaging Lecturer.**” Winter 2009

Graduate Student Mentoring

- **Chair** of Masters Committee: Zairac Smith MS Physics & Astronomy *San José State University* Fall 2016-present (Expected Graduation Summer 2018)
- **Chair** of Masters Committee: Oana Seremeta MA Science Education Program *San José State University* Fall 2016-present (Expected Graduation Summer 2018)
- **Chair** of Masters Committee: Loni Fuller MA Science Education Program *San José State University* Fall 2016-present (Expected Graduation Summer 2018)
- **Chair** of Masters Committee: Dawn Wright MA Science Education Program *San José State University* Spring 2015-present (Expected Graduation Spring 2018)
- **Chair** of Masters Committee: Marie Pink MA Science Education Program *San José State University* Fall 2014-present (Expected Graduation Spring 2018)
- **Chair** of Masters Committee: Tanveer Dhillon MA Science Education Program *San José State University* Fall 2015-2017 **Graduated Summer 2017**
- **Chair** of Masters Committee: Deborah Sater Science Education Program *San José State University* Fall 2013-2017 **Graduated Summer 2017**
- **Chair** of Masters Committee: Annie Chase MS Physics & Astronomy *San José State University* Fall 2014-2017 **Graduated Summer 2017**
- Masters Committee: Robert Iverson MA Natural Science Program *San José State University* Spring 2015-2016 **Graduated Summer 2016**
- Masters Committee: Jessica Potter MA Science Education Program *San José State University* Fall 2015-2016 **Graduated Spring 2016**
- **Chair** of Masters Committee: Eric Hickok MS Physics & Astronomy *San José State University* Spring 2014-2015 **Graduated Fall 2016**
- **Chair** of Masters Committee: Andrew Reid MS Physics & Astronomy *San José State University* Spring 2013-2015 **Graduated Spring 2015**
- **Chair** of Master Committee: Kate Nichols MS Science Education Program *San José State University* Fall 2012, Spring 2013-2015 **Graduated Spring 2013**
- Facilitator of **Departmental Teaching Assistant Training**, *University of California-Davis*, CA, Fall 2007, 2008, 2009, 2010, 2011
- “Teaching Assistant Mentorship Advantage:” **Mentor for new Teaching Assistants** *University of California-Davis*, Fall 2010

Undergraduate Student Mentoring

- **Undergraduate Research Advisor** – Kevin Hartman (2016-present)
 - SJSU Undergraduate Research Grant Advisor
- **Undergraduate Research Advisor** – Kaala Cheney (2016-present)
- **Undergraduate Research Advisor** – Stephanie Lorelli (2014-2015)
 - SJSU Undergraduate Research Grant Advisor
 - Advisor for AAAS student poster
- **Undergraduate Research Advisor** – Celeste Ma (2014-2015)
 - SJSU Undergraduate Research Grant Advisor
 - Advisor for AAAS student poster
- **Undergraduate Research Advisor** – Zairac Smith (2014-2015)
 - SJSU Undergraduate Research Grant Advisor
 - Advisor for AAAS student poster
- **Undergraduate Research Advisor** – Kyle Blyth (Spring 2015)

- SJSU Undergraduate Research Grant Advisor
- **Mentor for Undergraduate Students in “Research Experience for Undergraduates”**
University of Wyoming, Summer 2003 & 2004

Academic Community Positions

- **Chair of Research in Physics Education (RIPE) committee** of American Association of Physics Teachers Spring 2017 – Spring 2018
- **Physics Education Research Leadership Organizing Council (PERLOC)** member spring 2017-present
- **Vice Chair of Research in Physics Education (RIPE) committee** of American Association of Physics Teachers Spring 2016 – Spring 2017
- **American Association for the Advancement of Science** member 2015
- **Astronomical Society of the Pacific** member 2013
- **American Association of Physics Teachers** member 2008-present
 - **Physics Education Research Topical Group** member 2012-present
- **American Association of Physics Teachers Northern California & Nevada** member 2012-2013
- **Physics Education Research Job Blog** editor (perjobs.blogspot.com) 2011-2014
- **“Wyoming Infrared Observatory (WIRO) Open House”** Volunteer, *University of Wyoming*, Fall 2002, 2003, 2004, 2005

K-12 Outreach

- **“Ask an Astrophysicist”** Guest Speaker via skype, *Fulton Junior High, Fulton NY*, Fall 2011
- **“Women in Science Day”** *University of Wyoming* 2004, 2005, 2006
 - Workshop Leader: **“Our Extraordinary Solar System”** Spring 2006
 - Workshop Leader: **“Why don’t the planets fall?”** Spring 2005
 - Workshop Leader: **“Let’s Travel to a Black Hole!”** Spring 2004
- **“Gender Equity in Math and Science”** Workshop Leader, *Loveland, CO* 2004
- **“Wyoming Astrocamp”** Volunteer, *University of Wyoming*, Summer 2003, 2004, 2005
Assisted elementary school students with rocket building, construction in weightlessness environment (SCUBA), astrophotography and data reduction, operating computer controlled rovers
 - Workshop Leader: **Writing Science Fiction** 2004, 2005

Science Education Teacher Support

- **“Next Generation Science Standards Workshop”** assistant/facilitator, San José State University, San José, CA (May 5th, 2014 and Nov. 4th, 2013)
- (*See also “Astronomy for Teachers” under Teaching Experience*)
- **“Sacramento Area Science Project,”** professional development series for high school teachers, *McClatchy High School, Sacramento CA*
 - Workshop Leader: **“Beginnings and Structure of the Universe”**
(March 6th, 2012)
- **“Science in River City”** professional development series for elementary and high school teachers, *California State University, Sacramento CA*
 - Workshop Leader: **“Interactive Astronomy: Moon Phases and Seasons”**
Winter 2011
 - Workshop Leader: **“Energy Conservation and Energy Transformation”**
Spring 2009
 - Workshop Leader: **“Energy Interaction Diagrams”** Winter 2008

SERVICE IN SUPPORT OF DIVERSITY & GENDER EQUITY

Committees

- **Co-chair of “Graduate Ally Coalition”** *University of California-Davis* (2010-2011)
Graduate Ally Coalition is an organization of graduate students and staff at UC Davis committed to fostering graduate student community, educating graduate students about the resources available to them, and ensuring accessibility of these services to graduate students of every ethnicity, race, gender, LGBT status, age, ability, ect.
 - Organized first annual **“Hungry for Heritage”** and **“International Student Dinner”** events;
 - Organized annual **“Graduate Ally Training,”** 2010, 2011 for new members;
 - Facilitated bi-weekly discussions devoted to increasing the accessibility of campus resources
- **“Campus Council on Community and Diversity”** *University of California-Davis* (2010-2011)
- **“Graduate Student Retention Task Force”** *University of California-Davis* (2010-2011)

Guest talks

- (See also: *“Women in Science Day”* and *“Gender Equity in Math and Science under”* K-12 outreach)
- Invited speaker at **“Black Graduate and Professional Students Welcome Dinner,”** 2010

Reports and Initiatives

- **Presentation to Graduate Council regarding UC Davis Graduate Studies default compensation plan policy for graduate students** (June 2011); Standard compensation plan below University of California Office of the President’s calculated cost of living
Outcome: Minimum graduate student default compensation plan increased above cost of living in Davis, increasing accessibility (effective January 2012)
- **Written Report on female pass-rate of UC Davis Physics Department graduate student written preliminary exam** (Fall 2009); females fail at higher rate than males
Outcome: Increased departmental awareness on topic.

FELLOWSHIPS & AWARDS

- **Grant Development Institute, San José State University** Spring 2013 (\$500)
- **Dissertation Year Fellowship, University of California-Davis,** 2011-2012 (\$20,000)
- **Best Talk** (1st Place) Interdisciplinary Graduate Symposium, *University of California-Davis,* 2010 (\$250)
- **Exceptional Poster** (3rd Place) Interdisciplinary Graduate Symposium, *University of California-Davis,* 2010 (\$50)
- **Katherine Fadley Pusateri Memorial Travel Award** *University of California-Davis,* 2010(\$600)
- **Professors For the Future Graduate Studies Fellowship, University of California-Davis** 2009 (\$3000)
- **Outstanding Graduate Student Teaching Award** *University of California-Davis* 2009 (\$250)
- **Teaching Assistant Consultant** Teaching Resources Center, *University of California-Davis,* 2008, 2009 (\$3000)
- **Elbogen Outstanding Teaching Assistant Award** *University of Wyoming,* 2004 (\$1600)
- **Excellence in Teaching Award** Physics Department, *University of Wyoming,* 2003(\$100)

GRANTS

- **Research, Scholarship, and Creative Activity award:** How do faculty use RIOT

- data to improve their teaching? Spring 2017 (\$5000)
- **Research, Scholarship, and Creative Activity award:** How do educators use the RIOT observation protocol web application? *San José State University*, Spring 2014 (\$5000)
 - **Undergraduate Research Grants**
 - Categorizing Teaching Assistants Interactions in Physics Lab Classrooms – Kevin Hartman, **Spring 2016** (\$1000)
 - Understanding Student Study Habits – Kyle Blyth, **Spring 2015** (\$1000)
 - Analysis of instructor perception of Student Participation Observation Tool – Celeste Ma, **Spring 2014**, (\$1000)
 - Instructor observation/reflection pairs constructed through SPOT – Stephanie Lorelli, **Spring 2014**, (\$1000)
 - Development of classroom interaction data visualization and analysis software – Zairac Smith, **Spring 2014**, (\$1000)
 - **Textbook Alternatives Project (TAP)**, *San José State University* Spring 2014 (\$1000)
 - **PI - NSF PRIME DRL 1337069** Development of a classroom observation format and protocol to assess student participation and interactivity in undergraduate STEM courses Spring 2013 (\$249,283)
 - Co-author of successful **Department Student Success grant** *San José State University* Spring 2013 (\$20,000)
 - **Grant Development Institute**, *San José State University* Spring 2013 (\$500)
 - **Innovative Teaching – Course Redesign** *San José State University* Spring 2013 (\$2000)
 - Co-author of successful **Undergraduate Instruction Improvement Program Grant:** “Determining the role of TA teaching behaviors on learning outcomes in a large enrollment physics course, part II” PI: David Webb (Physics Faculty), Teaching Resources Center, University of California-Davis, 2009 (\$3,153.75)
 - Co-author of successful **Undergraduate Instruction Improvement Program Grant:** “Determining the role of TA teaching behaviors on learning outcomes in a large enrollment physics course, part I” PI: David Webb (Physics Faculty), Teaching Resources Center, University of California-Davis, 2008 (\$12,147)

ASTRONOMICAL OBSERVING EXPERIENCE

Wyoming InfraRed Observatory (WIRO) *Jelm Mountain, Wyoming*

- 2.3 meter Cassegrain
- Duties: Assisted in all operations of the telescope and instruments including; opening and closing the facility; operating the movement of the telescope; instrument preparation (N₂ and He cooling); telescope collimation; collecting images
- Observed approximately 20 nights between 2003 and 2005

Red Buttes Observatory (RBO) *Laramie, Wyoming*

- F/8-24 Inch Reflector
- Duties: Assisted in all operations of the telescope and instruments including; opening and closing the facility; operating the movement of the telescope; collecting images; collecting spectra
- Observed approximately 10 nights between 2003 and 2005

2.1 meter at Kitt Peak *Kitt Peak, Arizona*

- F/2.6 2.1 meter Cassegrain
- Duties: opening and closing the facility; operating the movement of the telescope; collecting images

- Observed 4 nights in 2003

NASA InfraRed Telescope Facility (IRTF) *Mauna Kea, Hawaii*

- 3.0 meter telescope
- Duties: collecting images
- Observed 4 nights in 2005
- Observed 2 night (remotely) in 2004