Homeyra R. Sadaghiani

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EDUCATION

Ph.D., Physics, The Ohio State University, Columbus, Ohio (2005)
M.S., Physics, The Ohio State University, Columbus, Ohio (2003)
B.S., Applied Physics, Amir-Kabir University of Technology, Tehran, Iran (1994)

ACADEMIC APPOINTMENTS/ EXPERIENCE

Dean Fellow, CPP College of Science Faculty Recruitment, Retention & Development (21-22)
Provost Fellow, New Faculty Success Program, California Poly Pomona (2019- 2020)
Professor of Physics, California State Polytechnic University Pomona (2017-Present)
Associate Professor of Physics, California State Polytechnic University Pomona (2013-2017)
Assistant Professor of Physics, California State Polytechnic University Pomona (2007-13)
Postdoctoral Research Associate, Dept. of Physics, University of Washington (2005-2007)
Graduate Research & Teaching Assistant, Department of Physics, The Ohio State University (2002-2005)
Graduate Research Assistant, Experimental Nuclear Physics on Heavy Ion Collision, Brookhaven National Laboratory (2000-2001)
High School Physics Teacher, Columbus Torah Academy (2004-2005)
Self-employed, Owner, President, The Manager, Corner Grill, Nosrati, Inc. (1997-2000)

SPECIAL TRAININGS

- Racial Equity Leadership Academy for STEM Faculty (RELA), a nine-month professional learning and strategic racial equity action planning experience for STEM faculty leaders at universities across the United States. USC Race and Equity Center (2022)
- First Year Experience Faculty Learning Community (FYE) faculty summer institute (2020)
- ACUE- Micro credentials 6 modules on Inclusive Supportive Online Environment (2021)
- ACUE- Micro credentials 6 modules on Promoting Active Learning Online (2019)
- APS Education & Diversity Programs, professional skills for women (2016-present)
- Women Faculty Leadership Affinity, CPP Presidential program (2018-19)
- CPP leadership pipeline faculty learning community (2017,18)
- Project Kaleidoscope STEM Leadership Institute- A weeklong residential (2017)

SUMMARY OF QUALIFICATIONS

- Highly analytical, energetic academic scientist with14 years of experience in public higher education as a teacher-scholar, researcher, advisor, mentor, program director, grant administrator, Provost Fellow for new faculty success, and fellow associate dean of college of science for faculty recruitments, retentions, and evaluations.
- Excellent organizational, creative thinking, problem solving, technical presentations skills, with strong communication and interpersonal skills that promote a positive work environment, and able to develop collaborative partnerships across multi-institutions.
- A student-centered, innovative educator, committed to promoting student interactive engagement, inquiry-based learning, success, equity, and inclusion.
- Utilized skills in research-based curriculum development, dissemination, faculty development, education consulting, and effective use of technology to improve educational outcomes for all students.
- Experience preparing, monitoring, administering grant budgets to ensure timely and efficient expenditure of funds.
- Experience working with a diverse population of students, using a range of pedagogical approaches, in both public and private (K-20) educational settings, optimizing STEM education using technology and student engagement.
- Proven records of impacting student motivation, persistence, and overall success by effective development of data driven frameworks for decision making in student success initiatives.
- Extensive experience in design and development and data analysis of formative and summative assessments, including qualitative, quantitative, observational, and attitude Surveys.

CURRENT AND PREVIOUS EXTERNAL FUNDING

1. NSF IUSE- *"Collaborative research: Research As A Base To Develop Adaptable Curricula Bridging Instructional Paradigms In Quantum Mechanics,"* in Collaboration with CU Boulder and Cal State Fullerton (total ~$900,000), Cal Poly Pomona Campus PI, (2016-2021)
2. NSF Robert Noyce, Master Teacher Fellowship (CPP MTF) grant, Co-PI, $1,438,805 (2011-2017)
3. Physics Teacher Education Coalition (PhysTEC) grant, *"Increasing the Number and quality of High School Physics Teachers Graduating From Cal Poly Pomona,"* PI, $74,934 (2012-2016)
4. NSF Math and Science Partnership (MSP) CPP ReSPECT) $7.8 million, Senior personnel- physics lead faculty (2014-2019)
5. Department of Education, Promoting Active Learning Strategies Through the Flipped Classroom Model in STEM Gateway Courses, $3.0 million, Senior personnel- physics lead faculty (2016-2020)

6. NSF Robert Noyce, STEM Scholarship Program (Phase II) grant, Co-PI, $597,000 (2010-2014)
7. CSU Chancellor, "Reducing Bottlenecks and Improving Student Success, Provo Redesign Courses e-Academy: Flipped Physics Introductory Courses, 92 WTU & $34,000 for the 23 faculty participants' stipends; additional (~$13,500) stipends for the 8 faculty who adopted the flipped format, additional resources, and funding for CPP campus through the Provost's office. As a lead faculty, I received 8 WTU reassigned time and $3,000 stipends (2013-2014). http://courseredesign.csuprojects.org/wp/physics-eacademy-summary/

NSF Grant Program Advisory Board

8. Large scale NSF Grant Program Advisory Board Member, *"Illinois Physics and Secondary Schools (IPaSS) Partnership Program,"* The IPaSS program mission is fostering and supporting a bright and vital physics teaching community throughout the State of Illinois and beyond- Tim Stelzer (PI) (2020-24)
9. NSF Grant Program Advisory Board Member, *"Collaborative Research: Connecting Spins-First Quantum Mechanics Instruction to Quantum Information Science."* The objective is to create and adopt flexible course materials for STEM majors interested in quantum information and technology. PIs Steve Pollock and Gina Passante (2020-24)

INVITED PRESENTATIONS

1. "Professional Skills and leadership For Woman in Physics" APS CUWiP at UC Merced, virtual (January 2022)
2. "Professional Skills and leadership For Woman in Physics" Stanford University, Stanford, CA (January 2019)
3. "Professional Skills For Woman, Negotiation Skills" CEMAST Brown bag series, Cal Poly Pomona (May 2018)
4. "Professional Skills For Woman, Negotiation Skills" National Conference for Undergraduate Woman in Physics Conference (CUWIP) Pomona College (January 2018)
5. "Student Use of Different Mathematical Representations For Expectation Values Of Physical Observables," National AAPT, Cincinnati OH (July 2017)
6. "Increasing Student Success In Science Education @ All Levels," International Conference the "Lower Mekong Initiative (LMI) Frontiers of Science Education Symposium" Bangkok, Thailand (April 2017)
7. "Reports on Cal Poly Pomona PhysTEC Program, *Talk & Panel Discussion*, National AAPT Sacramento, CA (July 2016)
8. "Supporting Student Success In Large Introductory Course," Cal Poly Pomona, presented to Provost Council (Nov 2016)

9. "Development & Validation Of The Quantum Mechanism Concept Assessment," Summer National AAPT, Washington Dc (July 2015)
10. "Spin First Approach In Teaching Quantum Mechanics," Keynote speaker, Founders & Frontiers of Physics Education Research Conference (FFPER) Bar harbor, Maine (June 2015)
11. "Introductory physics course redesign: Is it time to flip? " The Ohio State University, Physics Education colloquium, Columbus, Ohio, Physics department (April 2014)
12. "From Spin-First Approach to Quantum Mechanics Concept Assessment (QMCA), Special Upper Division Focused Physics Education Research (PER) Conference, Oregano State University Physics Department, Corvallis, OR (June 2014)
13. "Teaching quantum mechanics: Spin first vs. wave-function approach," University of Colorado Boulder Physics Education webinar presenter, (October 2013)
14. "Is it time to flip our classroom?" Purdue University Physics Education colloquium, Lafayette, Indiana, Physics department colloquium (April 2013)
15. "Flipped classroom," Cal Poly Pomona Faculty Center, April 25, 2013.
16. "Redesign of Introductory Physics Courses at Cal Poly Pomona," CSU Northridge physics Colloquium (September 2013)
17. "Using online multimedia prelecture in teaching hybrid-online Introductory Physics Courses," CSU Fresno (October 2013)
18. "Cal Poly Pomona Graduation initiative workshop on physics recitation enrichment courses" (September 2013)
19. PhysTEC Regional Conference with CSU Math and Science Teacher Initiative and UC Cal-TEACH. Panel Discussion, Ontario CA, (February 2012)
20. "Is it time to flip your classroom?" Cal State Fullerton Physics department colloquium, (December 2012)
21. "The Effect of Early Field Experience For Pre-service Teachers," The 4th Physics Education Conference, California Polytechnic University, Pomona, CA (2009)
22. "Improving Student Lab Experiences by Incorporating the Findings of Physics Education Research," American Association of Physics Teachers National Meeting, Alberta, Canada (2008)
23. "Incorporating Technology: Using Online Material in Introductory Physics Courses," The 3rd Physics Education Conference, California Polytechnic University, Pomona, CA (2008)
24. "Improving Physics Education," Oregon State University, Corvallis, OR (2007)
25. "Student Mathematical and Conceptual Difficulties: Examples of Quantum Mechanics," California Polytechnic University, Pomona, CA (2007)

26. "The Role of Physics Education Research (PER) in Improving Student Learning in Physics: Examples of Quantum Wave-functions," Coastal Carolina University, Conway, SC (2007)
27. "Student Understanding of Probability Wave-Functions," University of Washington, Seattle, WA (2006)
28. "Students' Learning of Quantum Physics Examples from Quantum Measurement," Rhodes College, Memphis, TN (2005)
29. "Breaking the Barriers in Learning Quantum Mechanics," Miami University, Miami, OH (2005)
30. "Students' Conceptual and Mathematical Difficulties with Quantum Wave-Functions," The Ohio State University, Columbus, OH (2005)
31. "Barriers to Students Learning Quantum Mechanics," The Ohio State University, Columbus, OH (2004)

ABSTRACTS AND CONFERENCE PRESENTATIONS

American Association of Physics Teachers (AAPT) abstracts can be obtained from: http://www.aapt.org/AbstractSearch

**** Undergraduate student co-presenters***

1. "Spanning the Space of Student Ideas on Change-of-Basis in Quantum," Talk and Poster- G. Corsiglia*, B. Schermerhorn, H. Sadaghiani, G. Passante, and S. Pollock, National AAPT Summer Meeting - Virtual (2021)
2. "*From Cartesian to Hilbert Space: Improving Understanding of Quantum Basis,"* B. Schermerhorn, G. Corsiglia*, H. Sadaghiani, G. Passante, *National AAPT* Summer Meeting - Virtual (2021)
3. *"Spanning the space of student ideas on change-of-basis in quantum,"* G Corsiglia*, B. Schermerhorn, H. Sadaghiani, G. Passante, S. Pollock, PERC Summer - Virtual (2021)
4. "Exploratory Factor Analysis of the QMCA," A. Quaal*, G. Passante, S. Pollock, and H. Sadaghiani, Talk and Poster -AAPT Summer Meeting- Virtual (2020)
5. "Promoting Critical Thinking, "*Improved Scientific Reasoning Skills,"* T. Garcia*, H. Sadaghiani, California Undergraduate Research Conference (2019)
6. "Research in students' understanding of basis in the context of spin-1/2 quantum systems," H. Sadaghiani, B. Schermerhorn, G. Corsiglia*, National AAPT & PERC Summer Meeting, Provo, Utah (2019)
7. "Students' Perceptions of the Math-Physics Interactions through Spins-first Quantum Mechanics," H. Sadaghiani, B. Schermerhorn, National AAPT & PERC Summer Meeting, Provo, Utah (2019)
8. "Student Sense-Making of Expectation Values in Different Quantum Mechanical Contexts," B. Schermerhorn, H. Sadaghiani, G. Passante, and S. Pollock, National AAPT & PERC Summer Meeting, Provo, Utah (2019)

9. "Student Perceptions of Math-Physics Interactions Throughout Spins-First Quantum Mechanics," A. Villasenor*, D. Del Agunos*, B. P. Schermerhorn, and H. Sadaghiani, National AAPT & PERC Summer Meeting, Provo, Utah (2019)
10. "Representing Student Reasoning About Math in Physics," Moderators, National AAPT & PERC Summer Meeting, Provo, Utah (2019)
11. "Using EXPLICIT ACTIVITIES to Promote Critical Thinking, Students *Showed Improved Scientific Reasoning Skills,"* T. Garcia*, H. Sadaghiani, PERC Summer Meeting, Provo, Utah (2019)
12. "Research as a base to develop adaptable curricula bridging instructional paradigms in Quantum Mechanics,", H. Sadaghiani, S. Pollock, G. Passante, B. Schermerhorn, APS Meeting, Denver, CO (2019)
13. "Investigating Students' Implementation Of & Preference for The Methods of Solving for Expectation Values In Quantum Mechanics," with B. Schermerhorn & G. Passante, S. Pollock, APS National Meeting, Denver Colorado (2019)
14. "Comparing Different Methods for Computing the Expectation Value," with G. Passante, S. Pollock, and B. Schermerhorn, National AAPT National Meeting, Houston, Texas (2019)
15. "Student Sense-Making and Interpretation of Quantum Mechanical Expectation Values," PER Conference, Washington DC (2018)
16. "Designing, Validating, And Contrasting Closely Related Conceptual Quantum Mechanics Questions for Spin States and Spatial Wavefunctions," PER Conference, Washington DC (2018)
17. "Students' Choices When Solving Expectation Value Problems," with G. Passante, S. Pollock, and B. Schermerhorn, PER Conference, Washington DC (2018)
18. "Exploring Trends in Context Dependence on the QMCA," with A. Quaal* (CSUF), G. Passante, S. Pollock, PER Conference, Washington DC (2018)
19. "Research as a Base to Develop Adaptable Curricula Bridging Instructional Paradigms in Quantum Mechanics, with G. Passante, and S. Pollock, National AAPT San Diego, CA (2018)
20. "Cal Poly Pomona LA program as One of the PhysTEC Legacy Site" Reginal PhysTEC Conference, CSU Long Beach (2018)
21. "Scientific reasoning for Pre-service Elementary Teachers," Cal Poly Pomona Physics and Astronomy Department Annual PER Seminar series (May 2017)
22. "Flipped classroom: Increasing student success in introductory physics courses," NSF CA INCLUDES Conference (2017)
23. "Spin First vs. Position First instructional approaches to teaching introductory quantum mechanics," National American Physical Society (APS) meeting, Washington DC (2017)
24. "Synergy Between PhysTEC and LA Program Impacts Learning, Outcome," PhysTEC Meeting, Maryland, DC (2016)
25. "Elective Recitation Sections in Physics Freshman E&M Courses," National AAPT, presented by S. McCauley, Sacramento, CA (2016)
26. "Spin First Instructional Approach to Teaching Quantum Mechanics in Sophomore Level Modern Physics Courses," with *James Munteanu**, National AAPT Winter

meeting, New Orleans, LA (2016)
27. "Spin First Instructional Approach to Teaching Quantum Mechanics in Sophomore Level Modern Physics Courses," National AAPT, New Orleans, LA (January 2016)
28. "Elective Recitation Sections in Physics Freshman Service Courses," National AAPT, Presented by S. McCauley, Maryland (July 2015)
29. "Impact Of Cal Poly Pomona LA Program on Enhancing Content Knowledge of Las And Students," PhysTEC Meeting, Seattle (February 2015)
30. "Developing STELLA Format Lesson Plans on Force and Interaction," J. Howarth, J. Yeh, S. Yeh, and H. Sadaghiani, National AAPT, San Diego CA (2015)
31. "Quantum Mechanics Concept Assessment (QMCA): Development and Validation Study," National AAPT meeting, San Diego CA (2015)
32. "Learning Assistant (LA) program: A passage for high school teacher education and recruitment," National Winter AAPT, Orlando, FL (2014)
33. "Constructing a Multiple-Choice Assessment for Upper division Quantum Physics from and Open-ended Tool," National Winter AAPT, Orlando, FL (2014)
34. "Learning Assistant (LA) program: A passage for high school teacher education and recruitment," APS and Physics Teacher Education Coalition Leadership join Conference, Austin, TX (2014)
35. "Investigation of Spin First Instructional Approach to Teaching Quantum Mechanics," National Summer AAPT, Minneapolis, MN (2014)
36. "Investigation of Spin First Instructional Approach to Teaching Quantum Mechanics," Phys. Education Research Conference (PERC), Minneapolis, MN (2014)
37. "Development of Quantum Mechanics Concept Assessment," Physics Education Research Conference (PERC), Minneapolis, MN (2014)
38. "Using of Claim and Evidence in Middle School Science Classes" Western Regional Robert Noyce Annual meeting, November 8th, San Francisco CA (2014)
39. "Quantum Mechanics Concept Assessment: Development and Validation," Provost Symposium on Faculty Scholarship Program, Cal Poly Pomona (2014)
40. "Report on Learning Assistant Program Achievements," Cal Poly Pomona Physics and Astronomy Department Annual PER Seminar series (2014)
41. "Development of a Learning Assistant (LA) Program at Cal Poly Pomona," National Winter AAPT, New Orleans (2013)
42. "Teaching undergraduate quantum mechanics: contents, textbooks, and teaching methods," PERC, Portland OR (2013)
43. "The Impact of Learning Assistants on Student Learning and Engagement" With Sara Garcia* and April Hankins*, National AAPT Summer meeting, Portland (2013)
44. "Undergraduate Quantum Physics Curricula, Modern vs. Tradition" (Frontier and Founders of Physics Education Research (FFPER) biannual conference Bar Harbor, Maine (2013)
45. "Constructing A Multiple-Choice Assessment for Upper Division Quantum Physics from an Open-Ended Tool," with J. Miller *(UG), S. Pollock, and D. Rehn*, Physics Education Research Conference (PERC), Portland (2013)

46. "Utilizing Learning Assistant (LA) Program to Increase Number and Quality of High School Physics Teachers in CA," Southern California National AAPT (SCAAPT) (2013)
47. "Active Engagement and Interactive Classroom Techniques in Reformed Upper-Division Quantum Mechanics Courses: Connecting Concepts with Mathematical Processes," AAPT National Conference, Philadelphia, PA (2012)
48. "Mathematical vs. Conceptual Understanding: Where Do We Draw the Line?" with N. Aguilera*, PERC National Conference, Philadelphia, PA (2012)
49. "Teaching Force and Motion by Inquiry In 2nd Grade," with J. Aranda (A second grade teacher) AAPT National meeting, Ontario, CA (2012)
50. "The Impact of the History of Physics on Student Attitude and Conceptual Understanding of Physics," with Hankins* and Garcia*, AAPT National meeting, Ontario CA (2012)
51. "So, You Want to Be A High School Teacher?" Cal Poly Pomona Physics and Astronomy Weekly Seminars (2012)
52. "Engaging Student In Upper Division Quantum Physics For Optimal Understanding: Choices Of Class Format, Textbook, Topics, And Technology," Cal Poly Pomona Physics and Astronomy Department 5th Annual Physics Education Seminar (2012)
53. *"Panel Discussion*: "Use of Tutorials in Introductory Physics," American Association of Physics Teachers Southern CA section, Pierce College, Woodland Hills, CA (2011)
54. The Effect of Supplementary Web-based Multimedia Prelectures in Teaching Introductory Mechanics," National AAPT Winter meeting, Jacksonville, FL (2011)
55. *"Employing Learning Assistances (LAs) to Increase Student Success in Physics Gateway Courses*," Homeyra Sadaghiani and Steve McCauley**,** Cal Poly Pomona Provost's symposium on faculty scholarship and teaching, Cal Poly Pomona (2010)
56. "History of Physics," S. Garcia*, A. Hankins*, and H. Sadaghiani, National AAPT Summer meeting, Portland Oregon (2010)
57. "Use of Multimedia Learning Modules in Teaching Electricity and Magnetism," National AAPT Winter meeting, DC (2010)
58. "Multimedia PreLab Tutorials in Conservation Laws," Gordon Research Conference in Experimental Research and Labs in Physics Education, Hartford CT (2010)
59. "Critical and Scientific Thinking for Pre-service Elementary Teachers" Physics Education Research National Conference, Portland, OR (2010)
60. "Efficacy of Research-Based Multimedia Learning Modules on Student Achievement in Introductory Physics Courses," The Ohio State University, Columbus, OH (2010)
61. "Using Multimedia Learning Modules (MLM) as Part of a Hybrid-Online Course in Electricity & Magnetism," National AAPT National Meeting, Ann Arbor, MI (2009)
62. "Early Field Experience for Pre-Service Teachers: Knowledge and Attitude," National AAPT Summer Meeting, Ann Arbor, MI (2009)
63. "Education Research: Computational Physics Undergraduate Research Experience," PERC, Ann Arbor, MI (2009)
64. "Teaching Hybrid E&M Using Multimedia Learning Modules (MLM)," Foundations and Frontiers of Physics Education Research (FFPER), Bar Harbor Maine (2009)

65. "The Impacts of Intensive Research Experience on Student Understanding and Attitude Towards Physics," National AAPT Meeting, Chicago, IL (2009)
66. "Multimedia PreLab Tutorials in Conservation Laws," National AAPT National Meeting, Chicago, IL (2009)
67. "Computational Physics Undergraduate Research Experience (A case Study)," APS March Meeting, Pittsburgh, PA (2009)
68. "Multimedia Prelectures in Teaching Magnetism: A Pilot Study," Provost's Symposium on Faculty Scholarship, Cal Poly Pomona, CA (2008)
69. "Pilot Enrichment Courses to Enhance Student Success in Freshman Physics," McCauley, Abramzon and Sadaghiani, Provost Teaching Symposium, California Polytechnic University, Pomona, CA (2009)
70. "The Effect of Web-based Multimedia Learning Modules in Teaching Magnetism," E-learning Fair, California Polytechnic University, Pomona, CA (2009)
71. "PreLab Tutorials on Conserved Quantities," E-learning Fair, California Polytechnic University, Pomona, CA (2009)
72. "Physics By Inquiry in Diverse Populations: Addressing Student Learning and Attitude," Physics Education Research National Meeting, Edmonton, Canada (2008)
73. "Incorporating Technology: Using Online Material in Introductory Physics Courses," The 3rd Physics Education Conference, Cal Poly Pomona, CA (2008)
74. "Teaching Physics by Inquiry," Sharing Our Stories of Success, California Polytechnic University, Pomona, CA (2008)
75. "Challenges of Adopting Physics by Inquiry," American Association of Physics Teachers National Meeting, Baltimore, Maryland (2008)
76. "Improving Student Performance in Quantum Mechanics: Practice Problems in Lecture vs. Discussion Problems in Small-groups," Southern California Section of the AAPT (SCAAPT) Mt. San Antonio College, Pomona (2007)
77. "What Should We Teach in Quantum Mechanics and Why?" Foundation and Frontiers of Physics Education Research Conference (FFPER) H. Sadaghiani, P. Shaffer, and L. Mc Dermott, Bar Harbor Maine (2007)
78. "Examining Student Understanding of quantum wave functions," H. Sadaghiani, P. Shaffer, L. McDermott, National AAPT Winter Meeting, Seattle, WA (2007)
79. "Examining Student Understanding of Basic Topics in Quantum Mechanics in Different Populations," H. Sadaghiani, P. Shaffer, L. McDermott, APS Northwest, Tacoma, WA (2006)
80. "Mathematical Tools Needed to Understand Quantum Mechanics," National Summer AAPT, Salt Lake City, UT (2005)
81. "Students' Understanding of Symmetry in Mathematics and Quantum Mechanics," National AAPT, Salt Lake City, UT (2005)
82. "A Three-Year Investigation on Teaching and Learning Quantum Mechanics," National AAPT, Salt Lake City, UT (2005)
83. "Addressing Student Difficulties in Understanding Phase and Phase Difference," National AAPT, Albuquerque, NM (2005)

84. "Tutorials on quantum probability and wave function in different potential wells," National AAPT, Albuquerque, NM (2005)
85. "Student Understanding of Phase and Phase Difference in a Variety of Contexts," National AAPT, Albuquerque, NM (2005)
86. "Developing Voting Machine Questions for Introductory Physics Courses," National AAPT, Albuquerque (2005)
87. "Student Learning of Quantum Mechanics," National AAPT, Sacramento, CA (2004)
88. "Student Understanding of Fourier Analysis," National AAPT, Sacramento, CA (2004)
89. "Student Understanding of Probability-Wave Distribution and Measurement Uncertainty," National AAPT, Sacramento, CA (2004)
90. "Enhancing Engagement in High School Physics Classes Using Virtual Reality," National AAPT, Sacramento, CA (2004)
91. "Knowing Our Students in Upper-Level Undergraduate Quantum Courses," National AAPT, Miami, FL (2004)
92. "Student Difficulty in Extracting Physical Meaning from Linear-Algebra in Undergraduate Quantum Class," National AAPT, Miami, FL (2004)
93. "Evaluation of Model Analysis Theory as a Statistical Tool for Assessment of Qualitative Data," National AAPT, Miami, FL (2004)
94. "Probing Students Mental Models in a Modern Physics Class Using Voting Machines," National AAPT, Madison, WI (2003)
95. "Developing Conceptually-Based Questions in Quantum Mechanics," National AAPT, Madison, WI (2003)
96. "Interactive Recitations: Incorporating Conceptual Learning into Problem solving," National AAPT, Austin, TX (2003)
97. "Incorporating Conceptual Learning into Problem Solving," National AAPT, Austin, TX (2003)
98. "Instructional Treatment to Emphasize Effective Textbook Reading," National AAPT, Austin, TX (2003)
99. "Student Motivations and Learning Style in Problem Solving Settings," National AAPT, Austin, TX (2003)
100. "Effect of Increased Freedom in Homework assignments," National AAPT, Austin, TX (2003)
101. "Immediate Informative Feedback Using a New Homework System," National AAPT, Boise, ID (2002)
102. "The Effect of a New Homework System on Student Motivation and Learning Behavior," National AAPT, Boise, ID (2002)

INTERNATIONAL CONFERENCES PRESENTATIONS

1. "Research As a Base To Develop Adaptable Curricula Bridging Instructional Paradigms In Quantum Mechanics," Group International de Research Sur l'Enseignement de la Physique (GIREP), International Research Group on Physics Teaching, Budapest, Hungary (2019)

2. "Improving Student Learning Gains and Attitudes Using Flipped Format Instructional Approach," Group International de Research Sur l'Enseignement de la Physique (GIREP), International Research Group on Physics Teaching, San Sebastian, Spain (2018)
3. "Increasing Student Success in Science Education @ all Levels," Lower Mekong Initiative (LMI) Frontiers of Science Education Symposium and Networking Session for LMI Young Scientist Program, Bangkok, Thailand (2017)
4. "Teaching and Learning Quantum Mechanics: Assessments, Curriculum Development, Learning Difficulties and Teaching Strategies," Symposia at The Second World Conference on Physics Education (WCPE) San Pãlo, Brazil (July 2016)
5. "Connecting The Use of Technology to Academic Achievement," The World Conference on Physics Education (WCPE) Istanbul, Turkey (2012)
6. "Use of Multimedia Learning Modules in Teaching Electricity and Magnetism," Group International de Research Sur l'Enseignement de la Physique (GIREP), International Research Group on Physics Teaching, Reims, France (2010)

WORKSHOPS GIVEN

1. "Striking work & Life Balance," CPP NSF SEES mentoring (2020 & 21)
2. "Staking work & Life Balance" CPP NSF SEES mentoring (2019)
3. "Quantum Mechanics Learning Goals Workshop," Collaborative NSF IUSE Project: Research As A Base To Develop Adaptable Curricula That Bridge Instructional Paradigms In Quantum Mechanics," University Of Colorado Boulder, (2017)
4. "How to Flip Physics Courses," Designed and led a three-days discipline-based education research and Provo redesign course workshop for 22 CSU physics faculty system wide CSU Provo Course Redesign e-Academy workshop (2013)
5. "Teaching Electric Circuit: Scientific Modeling," This half a day hands on activity course on Electric Circuit was an invited workshop for elementary science teachers, presented in Cortez Elementary School (K-6) Pomona Unified School District, Pomona CA (2008)
6. "Tutorials in Introductory Physics: A Research-Based Approach to increasing Student Learning," Lillian McDermott, Peter Shaffer, and Homeyra Sadaghiani, American Association of Physics Teachers National Meeting, Alberta, Canada (2008)
7. "Student Success in Secondary Science (7-12)," The workshop was presented at Ganesha High School, Pomona Unified School District Professional Development Day, Pomona, CA (2007)

PEER- REVIWED PUBLICATIONS

* Student co-author

1. G. Corsiglia*, B. Schermerhorn, **H. Sadaghiani**, et al. "Exploring student ideas on change of basis in quantum mechanics, submitted " Phys. Rev. (2022)
2. B. Schermerhorn, G. Corsiglia*, **H. Sadaghiani**, G. Passante, and S. Pollock, "From Cartesian coordinates to Hilbert space: Supporting student understanding of basis in quantum mechanics," accepted Phys. Rev. (2022)
3. J. Wells, **H. Sadaghiani**, B. Schermerhorn, et al. "A Deeper look at question categories, concepts, and context covered: Modified module analysis of quantum mechanics concept assessment," Phys. Rev. Phys. Educ. Res. 17, 020113 –(2021), 10.1103/PhysRevPhysEducRes.17.020113
4. B. Schermerhorn, **H. Sadaghiani**, A. Mansour*, G. Passante, and S. Pollock, "Impact of context on students' sense-making of expectation values," Phys. Rev. Phys. Educ. Res. 17, 020141 (2021), 10.1103/PhysRevPhysEducRes.17.020141
5. G. Passante, B. Schermerhorn, S. Pollock, and **H. Sadaghiani**, "*Time Evolution in Quantum Systems: A Closer Look at Student Understanding"*, European Journal of Physics **41**, 015705 (2020).
6. **H. Sadaghiani**, B. Schermerhorn, G. Corsiglia*, G. Passante, and S. Pollock, "Exploring and Supporting Physics Students' Understanding of Basis and Projection, Research in Undergraduate Mathematics Education (RUME) Boston (2020)
7. B. Schermerhorn, G. Passante, **H. Sadaghiani**, and S. Pollock, "*Exploring student preferences when calculating expectation values using a computational features framework*," Phys. Rev. Phys. Educ. Res. **15**, 020144 (2019).
8. B. Schermerhorn, A. Villasenor*, D. Agunos*, **H. Sadaghiani**, G. Passante, and S. Pollock, "Student Perceptions Of Math-Physics Interactions Throughout Spins-First Quantum Mechanics," PERC Proceedings [Provo, UT, July 24-25, 2019], edited by Y. Cao, S. Wolf, and M. B. Bennett, doi:10.1119/perc.2019.pr.Schermerhorn (2019)
9. **H. Sadaghiani,** G. Passante, and S. Pollock, "Student sense-making and interpretation of quantum mechanical expectation values," *AIP Proceeding, Phys. Edu. Conference*, 2018 Physics Education Research Conference Proceedings, doi:10.1119/perc.2018.pr.Sadaghiani Washington DC (2018)
10. G. Passante, **H. Sadaghiani**, S. Pollock, and B. Schermerhorn, "Students' choices when solving expectation value problems," *Phys. Edu. Conference*, 2018 Physics Education Research Conference Proceedings, doi:10.1119/perc.2018.pr.Passante, DC (2018)
11. S. Pollock, **H. Sadaghiani**, and G. Passante, **"**Designing, validating, and contrasting closely related conceptual quantum mechanics questions for spin states and spatial wavefunctions," *AIP Proceeding, Phys. Edu. Conference*, 2018 Physics Education Research Conference Proceedings, doi: 10.1119/perc.2018.pr.Pollock, DC (2018)

12. Q. Ryan, T. Chau*, **H. Sadaghiani,** and G. Passante, "Investigate Students' use of Boundary Conditions using Symbolic Forms," *AIP Proceeding, Phys. Edu. Conference*, pp. 344-347, doi:10.1119/perc.2017.pr.081 (2017)
13. T. Jayasinghe*, **H. Sadaghiani,** "Students' understanding of continuous charge distributions," *American Institute of Physics (AIP) Proceeding, Phys. Edu. Conference*, Cincinnati, OH (2017)
14. **H. Sadaghiani,** "Spin First Vs. Position First Instructional Approaches To Teaching Introductory Quantum Mechanics" *American Institute of Physics (AIP) Proceeding, Phys. Edu. Conference*, Washington DC. (2016)
15. **H. Sadaghiani,** J. Munteanu* "Spin First instructional approach to teaching quantum mechanics in sophomore level modern physics courses," *AIP Proceeding, Phys. Edu. Conference*, pp. 287-290 (2015)
16. **H. Sadaghiani,** S. Pollock, "Quantum Mechanics Concept Assessment: Development and Validation Study," *Phys. Rev. Spec. Top. Phys. Educ. Res.* **11**, 1 (2015).
17. B. Wilcox, M. Caballero, C. Baily, **H. Sadaghiani,** S. Chasteen, Q. Ryan, S Pollock. "Development and Uses of Upper-division Conceptual Assessment," *Phys. Rev. ST Phys. Educ. Res.* ***11***, 020115 (2015)
18. **H. Sadaghiani,** John Miller*, Steve Pollock, D. Reh "*Constructing a Multiple-Choice Assessment for Upper-Division Quantum Physics From An Open-Ended Tool,"*, AIP Proceeding, *Phys. Edu. Conference* 2013- Portland OR (2013)
19. **H. Sadaghiani, "**Online Prelectures: An Alternative to Textbook Reading Assignments" *The Physics Teacher*, Vol. 50 (2012)
20. **H. Sadaghiani,** "A Controlled Study on the Effectiveness of Multimedia Learning Modules for Teaching Mechanics," *Phys. Rev. Special Topics: Physics Education Research 8*, 010103 (2012)
21. B. Lindsey, L. Hsu, **H. Sadaghiani**, Taylor, and K. Cummings**,** "Positive Attitudinal Shifts with the Physics by Inquiry Curriculum Across Multiple Implementations," *Phys. Rev. Special Topics: Physics Education Research 8*, 010102 (2012)
22. **H. Sadaghiani,** "Mathematical vs. Conceptual Understanding: Where Do We Draw The Line?" American Institute of Physics (AIP) *AIP Conf. Proc.*, Philadelphia, Sadaghiani and Nicholas Aguilera*, July (2012)
23. **H. Sadaghiani,** *"Using Multimedia Learning Modules In A Hybrid-Online Course In Electricity A Phys. Rev. Special Topics: Physics Education Research 7, 010102 (2011)*
24. **H. Sadaghiani**, *"Online Prelectures: An Alternative to Textbook Reading Assignments" The Physics Teacher (2011)*
25. **H. Sadaghiani,** "Scientific Reasoning for Pre-service Elementary Teachers," *AIP Proceeding, Phys. Edu. Conference, (PERC) Invited paper* (2010)
26. **H. Sadaghiani,** "Online Multimedia PreLab Tutorials in Conservation Laws," *AIP Proceeding, Phys. Edu. Conference* (2010)
27. Sara Garcia*, April Hankins*, **H. Sadaghiani,** "The Impact of the History of Physics on Student Attitude and Conceptual Understanding of Physics,", *AIP Proceeding, Phys. Edu. Conference* (2010)

28. **H. Sadaghiani,** Sarai Costley "The Effect of an Inquiry-Based Early Field Experience on Pre-Service Teachers' Content Knowledge and Attitudes Toward Teaching," *AIP Proceeding, Phys. Edu. Conference* (2009)
29. **H. Sadaghiani,** "Physics By Inquiry: Addressing Student Learning and Attitude," *AIP Proceeding, Phys. Edu. Conference* (2008)
30. L. Bao, S. Stonebraker, **H. Sadaghiani**, "A Flexible Homework Method," *American Journal of Physics, Vol. 76*, No. 9 (2008)
31. **H. Sadaghiani,** L. Bao "Student Difficulties in Understanding Probability in Quantum Mechanics", *AIP Proceeding, Phys. Edu. Conference* (2005)
32. **H. Sadaghiani,** L. Bao, "Lecture Demonstrations in Modern Physics: Quality vs. Quantity," *AIP Proceeding, Phys. Edu. Conference* (2003)
33. **H. Sadaghiani,** "Immediate Informative Feedback Using a New Homework System," *AIP Proceeding, Phys. Edu. Conference* (2002)

SELECTED STUDENTS RESEARCH PROJECTS

1. Armando Villasenor, B.S. 2019
   AVID Tutor at CHAFFEY- Research presentations:
   a. "Students' Perceptions of the Math-Physics Interactions Throughout Spins-First Quantum Mechanics," Cal Poly Pomona, College of Science Symposium, Physics Senior Project (May 2019), and National AAPT/PERC Conference in Utah (2019)
2. Tyler Garcia, B. S. 2020
   PhD student in PER at Kansas State University. Research presentations:
   a. "The Effect of Explicit Instruction on Scientific Reasoning Skills," Cal Poly Pomona, College of Science Symposium Poster (2019)
   b. SCCUR 2019 "The Effect of Explicit Activities Affected Students' Scientific Reasoning Skills," Oral Presentation (2019)
   c. CPP college of science research presentations "The Effect of Explicit Activities Affected Students' Scientific Reasoning Skills," Oral Presentation (2019)
3. Darwin Del Agunos, B. S. 2019
   Co-Founder @ Glacier. Research presentations:
   a. Students' Perceptions of the Math-Physics Interactions Throughout Spins-First Quantum Mechanics," Cal Poly Pomona, College of Science Symposium.
4. Anise Mansour, B. S. 2019
   Master student at CSULB. Co-authored publications:
   Impact of context on students' sense-making of expectation values," Phys. Rev. Phys. Educ.
5. Kevin T. McCondichie, B. S. 2018
   Mathematics and Physics Teacher at ACI prep. Presentations:
   a. "An Investigation of Teaching Practices in Introductory Physics Courses," Senior Project Seminar, CPP (June 2018)
6. Lauren Kim, B. S. 2017
   PhD student UC San Diego, Scripps Institution of Oceanography- Presentations:

a. "Analyzing The Effects of Spin First Versus Position First Instructional Approaches To The Teaching Of Quantum Mechanics," Physics Senior Project (June 2017)
b. "Examining Gender Biases Within the Physics Learning Assistant Program," National PER Conference, Sacramento, CA (July 2016)
c. "Examining Gender Biases Within the Physics Learning Assistant Program, Cal Poly Pomona, College of Science Symposium, & also at Physics and Astronomy 10th Annual PER Seminar, CPP (Spring 2016)

7. Tharindu Jayasinghe, B.S. 2017
PhD student at The Ohio State University & OSU Presidential Fellow
Presentation and Co-authored publication:
a. "Students' Understanding of Continuous Charge Distributions," Cal Ply Pomona, College of Science Symposium, & also at Physics and Astronomy 10th Annual PER Seminar (Spring 2016) & Published in Peer reviewed *American Institute of Physics (AIP) Proceeding, Phys. Edu. Conference*, Cincinnati, OH (2018)

8. Seth Hilliard, B. S. 2018
PhD student at Irell & Manella Graduate School of Biological Science. Presentation:
a. "Post Lecture flights: Immediate Assessment of Students' Retentions of Concepts After Class Discussions and Lectures in Modern Physics," Cal Ply Pomona, College of Science Symposium, & also at Physics and Astronomy 10th Annual PER Seminar (Spring 2016)

9. Nicole Gage, B. S. 2018
EMT at American Medical Response. Presentations:
a. "Item Analysis of Student Responses to Quantum Mechanics Conceptual Questions Using I-Clickers," CPP College of Science Symposium (2013)

10. James Munteanu, B. S. 2016
Master Student at University of North Texas. Presentations and publications:
a. "Analysis of Learning Assistant Views on Teaching," Physics Senior Project Seminar (June 2016)
b. "Spin First Instructional Approach to Teaching Quantum Mechanics in Sophomore Level Modern Physics Courses," National PER Conference, Maryland (July 2015) -Published in Peer Reviewed *AIP Proceeding, Phys. Edu. Conference*, pp. 287-290 (2015)

11. John Miller, B. S. 2013, PhD from UCLA
PhD- Physics and Engineering Faculty at My San Antonio College. Presentations and publications:
a. *Constructing a Multiple-Choice Assessment for Upper-Division Quantum Physics From An Open-Ended Tool,"*, AIP Proceeding, *Phys. Edu. Conference* 2013- Portland OR (2013)

12. Sara Garcia, B. S. 2012
Lecturer at CPP & AP Physics teacher at San Dimes High School. Presentations & Publications:
a. "The Impact of Learning Assistants On Student Learning & Engagement" National AAPT Portland, OR (2013)

b. "The Impact of the History of Physics on Student Attitude and Conceptual Understanding of Physics," *AIP Proceeding, Phys. Edu. Conference* (2010)

13. April Hankins, B. S. 2012 (CPP) , Master 2015 (CSUF)
Principal Systems Engineer at Northrop Grumman. Co-authored publications:
a. "The Impact of the History of Physics on Student Attitude and Conceptual Understanding of Physics," *AIP Proceeding, Phys. Edu. Conference* (2010)
14. Josh Zeeman, B. S. 2012
Lecturer at CPP & High school Physics Teacher at Monrovia High School. Presentations:
a. "The Effect of Web-based Multimedia Learning Modules in Teaching Magnetism," College Research Symposium, CPP 2012
15. Chris Anderberg, B. S. 2013
Web Analytics Engineer at Autodesk. Presentations:
a. "Study of Student Interaction with Simulations Using The Simulation As The Method Of Data Collection," Physics Senior project (Spring 2013)
16. Nick Aguilera B. S. 2012
Program manager- Next Gen OPIR; Previous high school teacher. Presentations and Co-Authored publications:
a. "Mathematical vs. Conceptual Understanding: Where Do We Draw The Line?" American Institute of Physics (AIP) AIP Conf. Proc., Philadelphia,
17. Albert Esparza 2012,
a. "Designing and Studying Effective Graphical Representations In Online Physics Multimedia-Based Homework" College of Science Symposium (2013)

Additional eight (8) Undergraduate Students that did research projects with me: Gavik Ayvazians (2009), John Sorlie and Nicholas Laurenti (2011), Joseph Girardini and Kevin Toner (2017), Chris Baez and Jetiny Ngo, and Kyle Sparhawk (2021)

Graduate Students (3) (Remote): Giaco Corsiglia, University of Colorado (2020-23), Tong Wan University of Washington (2016-17), Sarai Costley California State Fullerton (2008-09)

Postdoctoral Researcher (1): Dr. Benjamin Schermerhorn (2018-2020)

SERVICE & OUTREACH

National Science Foundation (NSF) Proposal Review Panel, Washington DC.:

- NSF Noyce Master teacher Fellow Proposals (2013)
- NSF Research Experience for Undergraduate (REU) Proposals (2011)
- NSF SCI Education Research Proposals (2007)

International Conference:

- Symposium Organizer, Teaching and Learning Quantum Mechanics International Physics Education Conference, Budapest, Hungry (2019)
- Session Presider, Physics Education Conference, Budapest, Hungry (2019)

- Conference Session Chair, The World Physics Education Conference, Istanbul, Turkey (2012)
- Abstracts Referee, The World Conference on Physics Education, Istanbul, Turkey (2012)

National Conferences:

- Focused Session Organizer, Phys. Edu. Res. Con. (PERC) Provo Utah (2019)
- Session Organizer, Phys. Edu. Res. Con. (PERC) Portland Oregon (2010)
- Conference Panel Organizer and Lead; Foundations & Frontiers of Physics Education Research Conference (FFPER), Bar Harbor Main (2007)

Referee for peer-reviewed journals (35 articles at CPP):

- Physics Education Research Conference Proceedings (2005-present)
- Physical Review Physics Education Research (2005-present)
- American Journal of Physics (2007-present)
- The Physics Teach (2010-present)

CA Network Improving Teaching & Evaluation Professional Development (2016-17)
Science Teacher Professional development Activities, Pomona School Distr. CA (2007-09)
Physics Textbook Symposium, Mc Graw Hill Publishers, Dubuque Iowa (2009)
Science Olympiad Judge (2007)
Public Relations, the Ohio State University Physics Department (2002-2004)
Judge, "State Science Day" Competitions, The Ohio State University (2004)
Judge, "Science Olympiad" Competitions, The Ohio State University (2003)
Council of Graduate Student, The Ohio State University (2004-2005)

Service CPP College of Science

Assessment committee, Chair - Physics & Astronomy Department (2022)
Industry Relations Committee - Physics & Astronomy Department (2021-2022)
Assessment Committee, chair, Physics & Astronomy Department (2021-2022)
College of Science Strategic Initiative Project (2019-2020)
College of Science, Tenure, and Promotion (RTP) Committee member (2020-2021)
Faculty Learning Community Lead, semester conversion- FCRSSS PHY 1510 (2018-19)
Search committee, CPP Physics and Astronomy – (2013-14/Astro) (2014-15/PER-chair), (2017-18/Astro) , (2018-2019/ High Energy)
Academic Senate, Faculty Affair committee (2015-20)
Academic Senate, College of Science Senator (2009–2012, 2013–2016, 2017-2020)
Assessment Coordinator, Cal Poly, Physics Department (2009-2015)
Outreach committee chair, CPP Physics and Astronomy (2007-2015)
Tenure and Promotion Committee Member& Chair, CPP Physics & Astro. (2014-15)
College of Science Distinguished Teaching Award Committee, Member (2007-2012)
Assessment Coordinator, Physics Department (2009-2014)
Outreach committee chair, CPP Physics and Astronomy (2007-2014)
Tenure and Promotion Committee Member& Chair, CPP Physics & Astro. (Several times)

College of Science CEMaST White Paper Working Group, Chair (2008-09)
The Physics Learning Assistant (LA) Program (2010-Present)
Physics Help/Tutor Room Physics & Astronomy Department (2011-present)
Undergraduate Academic Advisor & Research Mentor (2007-Present)
SEES Undergraduate Transfer Student Mentor (2011-Present)

Service CPP University

University, Tenure, and Promotion (RTP) Committee member (2018-2020)Provost's Awards Selection Committee (PASC) Excellence in Teaching (2021).
University Retention, Tenure, and Promotion (RTP) Committee member (2018-2021)
Foundation Board of Directors, Program Committee (2020-2022)
Academic Affairs Division Budget Advisory Committee (AADBAC)
Faculty Equity Liaison for Physics & Astronomy Faculty Search (2018-19)
Search Committee, (College of Science Associate Dean 2019)
Search Committee, Director, Office of Research & Sponsored Programs (2019)
Search Committee, AVP, Strategic Enterprise Risk Management, (2019)
Academic Senate Faculty Affairs Committee (2016-2019)
Academic Senate, Academic Affair Committee CPP (2014-2015)
Learning Assistant (LA) Program Director (2011-2019)
Academic Senate, Academic Affairs Committee (2008–2012)
University Outstanding Staff Award Committee, Member (2008-2009)
Academic Senate, Senator (2009–2012, 2013–2016, 2019-2020)
Faculty Community to Revamp Students Success in Semester Lead Faculty (2017-2019)
WASC essay 5 writing group, California State University, Pomona, Fall l2017

TEACHING EXPERIENCE

Cal Poly Pomona, Physics Department (2007-Present)

1. First Year Experience
2. Senior level Quantum Mechanics
3. Physics Senior Seminar course
4. Spin Paradigm, Upper Division Elective Quantum Mechanics
5. Special Topics in Physics Education Research
6. Modern Physics and Introduction to Quantum Mechanism
7. History Of Physics, Upper Division Synthesis Ge
8. Upper Division- Sophomore, And Introductory Recitations
9. Calculus-Based Introductory Physics
10. General Physics Laboratory
11. Physics Concepts and Activates – Science For K-8 Preservice Teachers
12. Learning Assistant (LA) Seminar Course

University of Washington, Physics Department (2005-2007)

13. Physics By Inquiry, Electric Circuit
14. Physics By Inquiry, Kinematics And Dynamics
15. Physics By Inquiry, Light And Colors, And Mechanical Waves
16. Tutorials in Physics, Mechanics

17. Tutorials in Physics, Electricity and Magnetism
18. Tutorials in Physics, Waves and Oscillations

The Ohio State University, Physics Department TA (2001-2005)

19. Introductory Algebra and Calculus-Based Physics Labs and Lectures
20. Physics By Inquiry, Properties Of Matter
21. Upper-Level Undergraduate Quantum Mechanics

Physics and Mathematics Teacher (2004-2005)

22. High School Physics and Physical Science teacher, Columbus Torah Academy

ESPECIAL TA AND TEACHER TRAINNING COURSES

1. **Learning Assistant Program (2010-present)**
   - Professional Development Courses For future high school teachers
   - Build CPP Learning Assistant (LA) Program
   - Designed and taught pedagogical courses for Las
   - Assisted faculty in Biological Science and Mathematics and Statistics departments in launching and adopting the program
2. **Professional Development Research Based Courses For K-12 Teachers CPP (2007-2017)**
   - CPP ReSPECT Math & Science Partnership (MSP), Summer Institute (2014-2019)
   - Noyce Master Teacher Fellow (MTF) teacher prep and leadership development Summer Institute, 6- 8 weeks (2011-2016)
   - West Ed curriculum, Understanding Force and Motion, teacher-prep Institute (2009)
   - Developed Early Field Experience courses for pre-service teachers (2009-2015)
   - Developed Wave and Optics curriculum for high school physics teachers (2008)
3. **Professional Development, Summer Institute for In-service Teachers University of Washington (2005- 2007)**
   - UW Summer Institute is a nationally known, intense six weeks long NSF granted program in the physics department of University of Washington for K-12 In-service teachers:
   - Physics by Inquiry, Heat & Temperature, Lead instructor (2007)
   - Physics by Inquiry, Electric Circuit II, Lead instructor (2007)
   - Physics by Inquiry, Light an Geometrical Optics, Lead instructor (2006)
   - Physics by Inquiry, Properties of Matter (2006)
   - Physics 407, 408, and 409; A three quarters long discovery-based course (in laboratory environment) for Pre-service science and mathematics teachers
   - Supervised and scheduled teaching assignments for over 65 physics TAs quarterly
4. **Designed and developed of TA Seminars, The Ohio State University (2000-2005)**
   - Facilitated University TA Orientations, Topics include, Cross-Cultural Communication Skills in the Classroom, Active Learning in Science, Teaching in the Lab, and leading a class discussion (2002-2004)

AFFILIATIONS TO PROFESSIONAL SOCIETY

Groupe International de Recherche sur l'Enseignement de la Physique (GIREP) (2011-Present)
APS Physics Teacher Education Coalitions (PhysTEC) (2010-present)
American Association of Physics Teachers (AAPT) (2002-present)
AAPT Teacher-prep Committee (2013-2016)
AAPT Physics Education Research Committee (2002-present)
AAPT International Physics Education Committee (2004-2007)
American Physical Society (APS) (2004-2017)
APS Forum on Education (2009-2010)

HONORS & AWARDS

Dean Fellow, College of Science Faculty Retention and Development, CPP (2021-22)
American Physical Society (APS) PhysTEC Program Senior Advisor (2021-2022)
Provost Fellow, New Faculty Success Program, CPP (2019- 2020)
APS Negotiation Skills Seminar Leader (2016-present)
CSU Chancellor- e-Academy Lead Faculty, Physics Flipped Class (2013-14)
Provost Teacher Scholar, CPP (2010-2011), (2017-18), (2018-19)
Investigating Teaching & Learning Fellowship (ITAL) (2007-2008)
Center for Excellence in Mathematics and Science teaching, Faculty Fellow, (2010-2016)
Graduate Teaching Fellowship, The Ohio State University (2003-2004)
Physics Department Excellent Senior Graduate Research Presentation Award (2004)
Ray Award Committee, The Ohio State University (2004-2005)
First Ranked GPA Undergraduate Physics, Amir-Kabir University of Technology (1994)
Undergraduate Physics Fellowship, Amir-Kabir University of Technology (1992-1994)

COLLABORATORS & OTHER AFFILIATIONS

Dr. Bao L., Department of Physics, The Ohio State University
Dr. Furnstahl R., Physics Department, The Ohio State University
Dr. McDermott L., Department of Physics, University of Washington
Dr. Heron P., Department of Physics, University of Washington
Dr. Rothberg J., Department of Physics, University of Washington
Dr. Shaffer P., Department of Physics, University of Washington
Dr. Stelzer T., Physics Department, University of IL Urban Champaign
Dr. Pollock S., Department of Physics, University of Colorado Bolder
Dr. Passante G., Department of Physics, Cal State Fullerton.
Dr. Wilcox B., Department of Physics, University of Colorado Bolder
Dr. Schermerhorn B., Department of Physics, Monroe Community College, Rochester
Dr. James Wells, Department of Physics, University of Connecticut
Dr. Edward Price, Department of Physics, CSU San Marcus

last saved 3/1/22