Gina Passante

Professor of Physics | California State University, Fullerton
Department of Physics | gpassante@fullerton.edu | Work 657-278-7403

Education

2012 **Ph.D., Physics**
University of Waterloo, Canada
Thesis: On Experimental Deterministic Quantum Computation with One Quantum Bit

2007 **Certificate of Advanced Studies in Mathematics**
University of Cambridge, United Kingdom
Also known as Part III of the Mathematics Tripos

2006 **B.Sc. (Honours), Physics**
University of Winnipeg, Canada

Professional Experience

2025 - present **Professor, Physics**
California State University, Fullerton

2023 - 2026 **Director, Catalyst Center**
California State University, Fullerton

2020 - 2025 **Associate Professor, Physics**
California State University, Fullerton

2015 - 2020 **Assistant Professor, Physics**
California State University, Fullerton

2012 - 2015 **Postdoctoral Research Associate**
University of Washington, Physics Education Group, Dept. of Physics

Peer Reviewed Journal Articles

** CSUF student co-author † Other student co-author at time of writing*

J35. J.C. Meyer, M. Griston†, **G. Passante**, S.J. Pollock, and B. Wilcox, Measuring student understanding in quantum computing: Development and validation of the quantum computing conceptual survey, Phys. Rev. Phys. Educ. Res. (accepted, 2026) **DOI**

J34. J.C. Meyer, B. Wilcox, S.J. Pollock, **G. Passante**, Assessing student learning in quantum computing: Lessons from developing a test item on phase kickback, EPJ Quantum Technol. 13, 105 (2026) **DOI**

J33. S.S. Plueger†, B.R. Wilcox, S.J. Pollock, and **G. Passante**, Can a controlled-not gate affect the control qubit? Student resources for understanding controlled-not, Phys. Rev. Phys. Educ. Res. 22, 020145 (2026) **DOI**

J32. R. K. Fussell, J.S. Epstein†, **G. Passante** and N. G. Holmes, Open- versus closed-response methods of measuring students' reasoning: A case study using the Physics Measurement Questionnaire, Phys. Rev. Phys. Educ. Res. 22, 020132 (2026). **DOI**

J31. **G. Passante** and A. Kohnle, An interactive homework to support student learning of measurement uncertainty in quantum mechanics, Phys. Rev. Phys. Educ. Res. 20, 020131 (2024). **DOI**

J30. Stump, E.M.†, Hughes, M.*, Holmes, N.G., and **Passante, G.**, Do students think that objects have a true definite position? Phys. Rev. Phys. Educ. Res. 20, 010154 (2024). **DOI**

J29. Meyer, J.C.†, **Passante, G.**, and Wilcox, B., Disparities in access to U.S. quantum information education, Phys. Rev. Phys. Educ. Res. 20, 010131 (2024). **DOI**

J28. Meyer, J.C.†, **Passante, G.**, Pollock, S.J. et al., Introductory quantum information science coursework at US institutions: content coverage. EPJ Quantum Technol. 11, 16 (2024). **DOI**

J27. Emily M. Stump†, Matthew Dew†, **G. Passante**, and N. G. Holmes, Context affects student thinking about sources of uncertainty in classical and quantum mechanics, Phys. Rev. Phys. Educ. Res. 19, 020157 (2023). **DOI**

J26. Emily M. Stump†, Mark Hughes*, **G. Passante**, and N. G. Holmes, Comparing introductory and beyond-introductory students' reasoning about uncertainty, Phys. Rev. Phys. Educ. Res. 19, 020147 (2023). **DOI**

J25. Andy Schang†, Matthew Dew†, Emily M. Stump†, N. G. Holmes, and **G. Passante**, New perspectives on student reasoning about measurement uncertainty: More or better data, Phys. Rev. Phys. Educ. Res. 19, 020105 (2023). **DOI**

J24. J. Meyer†, **G. Passante**, S. Pollock, and B.R. Wilcox, How media hype affects our physics teaching: A case study on quantum computing, The Physics Teacher 61, 339-342 (2023). **DOI**

J23. Giaco Corsiglia†, Steven Pollock, and **G. Passante**, Intuition in quantum mechanics: Student perspectives and expectations, Phys. Rev. Phys. Educ. Res. 19, 010109 (2023). **DOI**

J22. S. Pollock, **G. Passante**, and H. Sadaghiani, Adaptable research-based materials for teaching quantum mechanics, American Journal of Physics 91, 40 (2023). **DOI**

J21. J. Meyer†, **G. Passante**, S. Pollock, and B.R. Wilcox, Today's interdisciplinary quantum information classroom: Themes from a survey of quantum information science instructors, Phys. Rev. Phys. Educ. Res. 18, 010150 (2022). **DOI**

J20. 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, Phys. Rev. Phys. Educ. Res. 18, 010145 (2022). **DOI**

J19. G. Corsiglia†, B.P. Schermerhorn, H. Sadaghiani, A. Villaseñor†, S. Pollock, and **G. Passante**, Exploring student ideas on change-of-basis in quantum mechanics, Phys. Rev. Phys. Educ. Res. 18, 010144 (2022). **DOI**

J18. B. P. Schermerhorn, H. Sadaghiani, A. E. Mansour†, S. Pollock, and **G. Passante**, Impact of problem context on students' concept definition of an expectation value, Phys. Rev. Phys. Educ. Res. 17, 020141 (2021). **DOI**

J17. J. Wells, H. Sadaghiani, B. P. Schermerhorn, S. Pollock, and **G. Passante**, 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). **DOI**

J16. P.J. Emigh, E. Gire, C. A. Manogue, **G. Passante**, and P.S. Shaffer, Research-based quantum instruction: Paradigms and Tutorials, Phys. Rev. Phys. Educ. Res. 16, 020156 (2020). **DOI**

J15. A. Kohnle, S. E. Ainsworth, and **G. Passante**, Sketching to support visual learning with interactive tutorials, Phys. Rev. Phys. Educ. Res. 16, 020139 (2020). **DOI**

J14. **G. Passante**, B. P. Schermerhorn, S. J. Pollock, and H. R. Sadaghiani, Time Evolution in Quantum Systems: A Closer Look at Student Understanding, European Journal of Physics 41, 015705 (2020). **DOI**

J13. B. P. 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). **DOI**

J12. **G. Passante** and A. Kohnle, Enhancing student visual understanding of the time evolution of quantum systems, Phys. Rev. Phys. Educ. Res. 15, 10110 (2019). **DOI**

J11. P. J. Emigh, **G. Passante**, and P. S. Shaffer, Developing and assessing tutorials for quantum mechanics: Time dependence and measurements, Phys. Rev. Phys. Educ. Res. 14, 020128 (2018). **DOI**

J10. A. Kohnle and **G. Passante**. Characterizing representational learning: A combined simulation and tutorial on perturbation theory, Phys. Rev. Phys. Educ. Res. 13, 020131 (2017). **DOI**

J9. **G. Passante**, P. J. Emigh, and P. S. Shaffer. Student ability to distinguish between superposition states and mixed states in quantum mechanics, Phys. Rev. ST: Phys. Educ. Res. 11, 020135 (2015). **DOI**

J8. **G. Passante**, P. J. Emigh, and P. S. Shaffer. Examining student ideas about energy measurements on quantum states across undergraduate and graduate levels, Phys. Rev. ST: Phys. Educ. Res. 11, 020111 (2015). **DOI**

J7. P. J. Emigh, **G. Passante**, and P. S. Shaffer. Student understanding of time dependence in quantum mechanics, Phys. Rev. ST: Phys. Educ. Res. 11, 020112 (2015). **DOI**

J6. **G. Passante**, O. Moussa, and R. Laflamme. Measuring geometric quantum discord using one bit of quantum information. Phys. Rev. A, 85:032325 (2012). **DOI**

J5. B. Criger, **G. Passante**, D. Park, and R. Laflamme. Review article: Recent advances in nuclear magnetic resonance quantum information processing. Phil. Trans. R. Soc. A 370, 4620-4635 (2012). **DOI**

J4. **G. Passante**, O. Moussa, D.A. Trottier, and R. Laflamme. Experimental detection of non-classical correlations in mixed-state quantum computation. Phys. Rev. A 84:044302 (2011). **DOI**

J3. M.E. Carrington, R. Kobes, G. Kunstatter, D. Ostapchuk, and **G. Passante**. Geometric measures of entanglement and the Schmidt decomposition. J. Phys. A: Theor. 43 315302 (2010). **DOI**

J2. **G. Passante**, O. Moussa, C.A. Ryan, and R. Laflamme. Experimental Approximation of the Jones Polynomial with One Quantum Bit. Phys. Rev. Lett. 103:250501 (2009). **DOI**

J1. K. Choy, **G. Passante**, D. Ahrensmeir, M.E. Carrington, T. Fugleberg, R. Kobes, and G. Kunstatter. The dynamics of entanglement in the adiabatic search and Deutsch algorithms. Can. J. Phys. 85: 955-1021 (2007). **DOI**

Peer Reviewed Conference Proceedings

** CSUF student author † Other student author.*

P26. B. Cervantes*, **G. Passante**, G. Corsiglia†, and S. J. Pollock, Modified color frames for analyzing group interactions during an online quantum tutorial, 2022 PERC Proceedings [Grand Rapids, MI, July 13-14, 2022], edited by B. W. Frank, D. L. Jones, and Q. X. Ryan **DOI**

P25. J. C. Meyer†, **G. Passante**, S. J. Pollock, and B. R. Wilcox, Investigating student interpretations of the differences between classical and quantum computers: Are quantum computers just analog classical computers?, 2022 PERC Proceedings [Grand Rapids, MI, July 13-14, 2022], edited by B. W. Frank, D. L. Jones, and Q. X. Ryan **DOI**

P24. B. Cervantes*, **G. Passante**, B. Wilcox, and S. Pollock, An Overview of Quantum Information Science Courses at US Institutions, 2021 PERC Proceedings [Virtual Conference, Aug 4-5, 2021], edited by M. B. Bennett, B. W. Frank, and R. E. Vieyra **DOI**

P23. Y. Li†, A. Kohnle, and **G. Passante**, Student difficulties with quantum uncertainty in the context of discrete probability distributions, 2021 PERC Proceedings [Virtual Conference, August 4-5, 2021], edited by M. B. Bennett, B. W. Frank, and R. E. Vieyra **DOI**

P22. J. Meyer†, **G. Passante**, S. J. Pollock, M. Vignal, and B. R. Wilcox, Investigating students' strategies for interpreting quantum states in an upper-division quantum computing course, 2021 PERC Proceedings [Virtual Conference, August 4-5, 2021], edited by M. B. Bennett, B. W. Frank, and R. E. Vieyra **DOI**

P21. B. P. Schermerhorn, H. Sadaghiani, G. Corsiglia†, **G. Passante**, and S. Pollock, Exploring and supporting physics students' understanding of basis and projection. Proceedings of the 23rd Annual Conference on Research in Undergraduate Mathematics Education [Boston, MA, 26-28 February 2020], edited by S. Smith Karunakaran, Z. Reed, and A. Higgins. (pp. 926-932)

P20. Ainsworth, S., Kohnle, A., & **Passante, G.** (2020). Designing Drawing Activities to Support Simulation-based Learning in Quantum Mechanics. In Gresalfi, M. and Horn, I. S. (Eds.), The Interdisciplinarity of the Learning Sciences, 14th International Conference of the Learning Sciences (ICLS) 2020, Volume 3 (pp. 1581-1584). Nashville, Tennessee: International Society of the Learning Sciences.

P19. E. M. Stump†, C. White*, **G. Passante**, and N. G. Holmes, Student reasoning about sources of experimental measurement uncertainty in quantum versus classical mechanics, 2020 PERC Proceedings [Virtual Conference, July 22-23, 2020], edited by S. Wolf, M. B. Bennett, and B. W. Frank **DOI**

P18. C. White*, E. Stump†, N. Holmes, and **G. Passante**, Student evaluation of more or better experimental data in classical and quantum mechanics, presented at the Physics Education Research Conference 2020, Virtual Conference, 2020 **DOI**

P17. A. Quaal*, **G. Passante**, S. J. Pollock, and H.R. Sadaghiani, Exploratory factor analysis of the QMCA, 2020 PERC Proceedings [Virtual Conference, July 22-23, 2020], edited by S. Wolf, M. B. Bennett, and B. W. Frank **DOI**

P16. G. Corsiglia†, T. Garcia†, B. Schermerhorn, **G. Passante**, H. Sadaghiani, and S. Pollock, Characterizing and monitoring student discomfort in upper-division quantum mechanics, 2020 PERC Proceedings [Virtual Conference, July 22-23, 2020], edited by S. Wolf, M. B. Bennett, and B. W. Frank **DOI**

P15. M. Stein†, C. White*, **G. Passante**, and N. G. Holmes, Student interpretations of uncertainty in classical and quantum mechanics experiments, 2019 PERC Proceedings 2019 [Provo, UT, July 24-25, 2019], edited by Y. Cao, S. Wolf, and M. B. Bennett **DOI**

P14. B. Schermerhorn, A. Vollasenor†, D. Del Agunos†, **G. Passante**, S. Pollock, and H. Sadaghiani, Student perceptions of math-physics interactions throughout spins-first quantum mechanics, 2019 PERC Proceedings [Provo, UT, July 24-25, 2019], edited by Y. Cao, S. Wolf, and M. B. Bennett **DOI**

P13. **G. Passante**, H. R. Sadaghiani, S. J. Pollock, and B. P. Schermerhorn, Students' choices when solving expectation value problems, 2018 PERC Proceedings [Washington, DC, August 1-2, 2018], edited by A. Traxler, Y. Cao, and S. Wolf **DOI**

P12. H. R. Sadaghiani, **G. Passante**, and S. J. Pollock, Student understanding of quantum mechanical expectation values in two different curricula, 2018 PERC Proceedings [Washington, DC, August 1-2, 2018], edited by A. Traxler, Y. Cao, and S. Wolf **DOI**

P11. S. Pollock, H. Sadaghiani, A. Quaal*, and **G. Passante**, Designing, validating, and contrasting closely related conceptual quantum mechanics questions for spin states and spatial wavefunctions, 2018 PERC Proceedings [Washington, DC, August 1-2, 2018], edited by A. Traxler, Y. Cao, and S. Wolf **DOI**

P10. C. Green* and **G. Passante**, The use of ACER to develop and analyze student responses to expectation value problems, 2017 PERC Proceedings [Cincinnati, OH, July 26-27, 2017], edited by L. Ding, A. Traxler, and Y. Cao **DOI**

P9. Q. X. Ryan, T. Chau†, H. R. Sadaghiani, and **G. Passante**, Students' use symbolic forms when constructing Boundary conditions, 2017 PERC Proceedings [Cincinnati, OH, July 26-27, 2017], edited by L. Ding, A. Traxler, and Y. Cao **DOI**

P8. **G. Passante**, Energy measurement resources in spins-first and position-first quantum mechanics, 2016 PERC Proceedings [Sacramento, CA, July 20-21, 2016], edited by D. L. Jones, L. Ding, and A. Traxler **DOI**

P7. M. Vega*, W. Christensen, B. Farlow†, **G. Passante**, and M. Loverude, Student understanding of unit vectors and coordinate systems beyond Cartesian coordinates in upper division Physics courses, 2016 PERC Proceedings [Sacramento, CA, July 20-21, 2016], edited by D. L. Jones, L. Ding, and A. Traxler **DOI**

P6. T. Wan†, P. J. Emigh†, **G. Passante**, and P.S. Shaffer, Student understanding of period in introductory and quantum physics courses, 2016 PERC Proceedings [Sacramento, CA, July 20-21, 2016], edited by D. L. Jones, L. Ding, and A. Traxler **DOI**

P5. P. J. Emigh†, **G. Passante**, and P.S. Shaffer, Student understanding of superposition: Vectors and wave functions, 2016 PERC Proceedings [Sacramento, CA, July 20-21, 2016], edited by D. L. Jones, L. Ding, and A. Traxler **DOI**

P4. **G. Passante**, P. J. Emigh†, Tong Wan†, and P.S. Shaffer, Investigating student understanding of perturbation theory and inner products of functions, 2015 PERC Proceedings [College Park, MD, July 29-30, 2015], edited by P. V. Engelhardt, A. D. Churukian, and D. L. Jones. (2016). **DOI**

P3. **G. Passante**, P. J. Emigh†, and P.S. Shaffer, Tutorials in Quantum Mechanics: Benefit to students regardless of academic performance, 2014 PERC Proceedings [Minneapolis, MN, July 30-31, 2014], edited by P. V. Engelhardt, A. D. Churukian, and D. L. Jones. (2015). **DOI**

P2. **G. Passante**, P. J. Emigh†, and P.S. Shaffer, Investigating student understanding of basic quantum mechanics in the context of time-dependent perturbation theory, 2013 PERC Proceedings [Portland, OR, July 17-18, 2013], edited by P. V. Engelhardt, A. D. Churukian, and D. L. Jones. (2014) **DOI**

P1. P. J. Emigh†, **G. Passante**, and P.S. Shaffer, Student Understanding of Blackbody Radiation and Its Application to Everyday Objects, 2013 PERC Proceedings [Portland, OR, July 17-18, 2013], edited by P. V. Engelhardt, A. D. Churukian, and D. L. Jones. (2014). **DOI**

Collaborative Publications

Publications reflecting a supporting or tangential role in the collaboration.

C1. Clarice D Aiello et al, Achieving a quantum smart workforce, Quantum Sci. Technol. 6 030501 (2021). **DOI**

Popular Science Communication

Non-peer-reviewed public scholarship.

N1. B. Wilcox, **G. Passante**, and J. Meyer, Who has access to quantum computing education. The Conversation (July 2024). **Article**

Research Grants

External Awards

2025 **Scaling Engagement and Learning in Quantum Science Through PhET Interactive Simulations**
Co-PI | NSF DUE - Improving Undergraduate STEM Education
Total award $1,500,000 | CSUF $410,435 | Award **DUE-2439569**

2024 **Supporting Faculty and Student Learning of Equity-minded and Student-centered Pedagogy through Iterative Curricular Co-design**
PI | NSF: DUE - IUSE
Total award $399,896 | CSUF $399,896 | Award **DUE-2417077**

2024 **Collaborative Research: The impact of instruction on student thinking about measurement in classical and quantum mechanics experiments**
PI | NSF: DUE - IUSE Exploration & Design: Engaged Student Learning
Total award $492,307 | CSUF $194,578 | Award **DUE-2336136**

2020 **Collaborative Research: Connecting Spins-First Quantum Mechanics Instruction to Quantum Information Science**
PI | NSF: PHY Investigator-Initiated Research Projects
Total award $829,940 | CSUF $347,901 | Award **PHY-2011958**

2018 **Collaborative Research: Student Thinking About Measurements Across the Physics Curriculum**
PI | NSF: DUE - IUSE Exploration & Design: Engaged Student Learning
Total award $297,494 | CSUF $137,494 | Award **DUE-1809178**

2016 **Collaborative Research: Research as a base to develop adaptable curricula bridging instructional paradigms in Quantum Mechanics**
PI | NSF: DUE - IUSE Development & Implementation II: Engaged Student Learning
Total award $840,685 | CSUF $275,788 | Award **DUE-1626594**

Invited Talks and Colloquia

"Expanding Access and Understanding in Quantum Computing Education"

33. California Polytechnic University SLO, Physics Colloquium (October 15, 2026)
32. California Polytechnic University, Pomona, Physics Colloquium (April 16, 2026)
31. University of Southern California, Physics Colloquium (March 30, 2026)

"Teaching and Learning Quantum Information Science"

30. Simon Fraser University, Physics Colloquium (October 11, 2024)
29. University of British Columbia, Physics Colloquium (October 10, 2024)
28. University of Victoria, Physics Colloquium (October 9, 2024)
27. "Student thinking about measurement uncertainty in quantum and classical experiments", Chapman University, Science Forum (February 23, 2024)

"Research as a tool to improve the teaching and learning of quantum mechanics"

26. University of Colorado Boulder, Physics Colloquium (November 16, 2022)
25. Cornell University, Physics Colloquium (September 12, 2022)
24. "Improving Quantum Information Science Education", STEM-NET Webcast: CSU Exemplars in Physics (October 6, 2022)
23. "The interdisciplinary quantum information classroom", Division of Atomic, Molecular and Optical Physics, American Physical Society Meeting (June 2022, Orlando)
22. "Active Learning in Quantum Mechanics: Before, During, and After Lecture", American Physical Society April Meeting (April 2022, NYC and Online)

"Student Thinking about Measurements and Uncertainty in Physics"

21. Oregon State University, Physics Colloquium (May 2021, Online)
20. University of Winnipeg, Physics Colloquium (March 2021, Online)
19. Texas Tech University, Physics Colloquium (February 2021, Online)
18. "Student Learning in Spins-First Quantum Mechanics" Open Quantum Frontier Institute Virtual Workshop: Quantum Education (May 2020, Online)
17. Invited Plenary Speaker at Foundations and Frontiers of Physics Education Research (June 2019, Bar Harbor, Maine)
16. "Improving Conceptual Understanding Through Visual Reasoning", Canadian Association of Physicists Annual Congress (June 2019, Burnaby, Canada)
15. "Using Research to Improve the Teaching of Quantum Mechanics", California State University Long Beach Physics Colloquium (September 2018)
14. "Research as a Guide to Improve the Teaching & Learning of QM", Plenary Speaker at INTRIQ Fall Meeting, Bromont, Quebec, Canada
13. "Mathematization of Matrices in Quantum Mechanics", Physics Education Research Conference (July 2017)

"Using Research to Improve the Teaching and Learning of Quantum Mechanics"

12. CSUF Department of Chemistry and Biochemistry Seminar (February 2017)
11. Michigan State University (November 2016)
10. SACNAS 2016, Long Beach, CA (October 2016)
9. CSU San Marcos Colloquium (October 2016)
8. California Polytechnic University Pomona (May 2016)
7. California State University LA (February 2016)
6. "Discussant: State of Quantum Mechanics PER", American Association of Physics Teachers Summer Meeting, Sacramento, CA (July 2016)
5. "Improving quantum mechanics instruction using tutorials", American Physical Society NW Annual Meeting, Pullman, WA (May 2015)
4. "Research as a guide to improving student understanding: An example from quantum mechanics", The College of New Jersey (November 2014)
3. "A research based approach to improving the teaching of physics", University of Portland (March 2014)
2. "Detecting quantum correlations in a system that does not contain entanglement", University of Winnipeg Colloquium (May 2010)
1. "Approximating the Jones polynomial with a nuclear magnetic resonance quantum computer", University of Winnipeg Colloquium (May 2009)

Research Advising and Evaluation

2023-2026 **Evaluator**
NSF-Funded Project # 2235464 "Evidence-based Materials for Teaching Quantum Information Science and Technology"
Texas Tech University

2022-2027 **Advisory Board**
NSF-Funded Project # 2219109 "The CSUF-led partnership for inclusion of underrepresented groups in gravitational-wave astronomy"
California State University, Fullerton

2023-2026 **Advisory Board**
NSF-Funded Project # 2333074 "Advancing Quantum Metrology and Sensing Education: Concepts, Curricula, and Research on Student Learning"
Rochester Institute of Technology

Courses Taught and Instructional Roles

California State University Fullerton

Quantum Computing for Everyone (PHYS 155) | Fall 2026; Fall 2025; Spring 2024

Quantum Mechanics 2 (PHYS 555B) | Fall 2026; Spring 2021

Elementary Physics (PHYS 212) | Spring 2026

Quantum Mechanics 1 (PHYS 555A) | Spring 2026; Spring 2024; Spring 2021; Spring 2020; Spring 2019

Quantum Physics 1 (PHYS 355) | Fall 2025; Fall 2024

Elementary Physics (PHYS 211) | Spring 2025; Fall 2019; Fall 2018; Spring 2018

Modern Physics (PHYS 340) | Fall 2023; Fall 2021; Fall 2019; Fall 2018; Fall 2017; Fall 2016; Fall 2015

Independent Research | PHYS 499, 597, and 599: Spring 2021; Fall 2020; Spring 2020; Fall 2019; Spring 2019; Fall 2018; Spring 2018; PHYS 597 and 599: Spring 2017; Fall 2016; Spring 2016; PHYS 499: Fall 2015

Think Like Einstein (CNSM 101) | Fall 2020

Quantum Mechanics (PHYS 455) | Spring 2018; Spring 2017; Spring 2016

University of Washington

Instructor, co-instructor, and tutorial coordinator in graduate, upper-division, and introductory physics | 2012-2015

University of Waterloo

Graduate Instructional Developer and quantum information summer-school instructor | 2010-2011

Student Research Supervision

California State University Fullerton

Graduate Students

Daniel Lew (2026 – present)
Nicolas Salkin (2025 – 2027)
Samantha Lee (2024)
Mark Hughes (2021 - 2025)
Courtney White (2019 - 2021)
Anthony Arruda (2018 - 2020)
Zong Yu Wang (2017 - 2019)
Adam Quaal (2016 - 2020, part time)
Chrystin Green (2015 - 2017)

Undergraduate Students

Roman Bautista (2026 – present)
Jameson Nation (2026 – present)
Bruno Dethier (2026 – present)
Matthew Hitt (2025-2026)
Alan Cortez (2023)
Bianca Cervantes (2020 - 2023)
Bryan Gworek (2020 - 2021)
Sean Young (2019 - 2021)
Miguel Ramirez (2019 - 2021)
Courtney White (2018 - 2019)
Anthony Arruda (2016 - 2018)
Misael Calleja (2017)
Marlene Vega (2015)

Community College Students

Selina Jaimes Davila (2016)
Kyle Pannone (2016)

University of Washington

2012 - 2015 Graduate Student: Paul J. Emigh (Faculty advisor: Peter Shaffer)
2013 Undergraduate Student: J. Johnson

University of Waterloo

2010 Undergraduate Student: D. A. Trottier

Selected Awards

2025 Carol Barnes Excellence in Teaching Award, California State University, Fullerton
2025 Outstanding Teaching Award, College of Natural Sciences and Mathematics, CSUF
2025 Outstanding Referee, American Physical Society
2009 - 2012 Vanier Canada Graduate Scholarship, University of Waterloo

Service

Professional Service

Physics and Astronomy Faculty Teaching Institute (FTI) | Presenter and Facilitator Team, 2026-present

American Journal of Physics | Guest Associate Editor, special issue celebrating the International Year of Quantum Science and Technology, 2024-2025

APS GPER Nominating Committee | Member, 2023-2024

QIST FOLC | Facilitator, 2023-2024

Physics Education Research Conference (PERC) | Organizing Committee, 2020-2021 (PERC 2021)

National Science Foundation | Panel reviewer, 2016 and 2020

Research in Physics Education Committee, AAPT | Member, 2017-2018; Vice Chair, 2018-2019; Chair, 2019-2020

Physics Education Research Local Organizing Committee, AAPT | Ex-officio member, 2019-2020

Additional reviewing: Physical Review PER, Physical Review A, The Physics Teacher, European Journal of Physics, Canadian Journal of Physics, American Journal of Physics, and the National Science Foundation

University Service

California State University Fullerton

University level

Faculty Personnel Committee | Member, 2026-2029

Faculty Development Center Board | Member, 2023-2025

University Awards Committee | Member, 2023-2025

Instructionally Related Activities Committee | NSM faculty representative, 2020-2021

College level

NSM College Personnel Committee | 2026-present

NSM Curriculum Committee | 2019-2020; 2024-2025

NSM Assessment Committee | 2016-2020; 2023-2025

NSM Awards Committee | 2023-2024

Department level

Physics Department Curriculum Committee | 2015-2019; 2020-2021; 2024-2025

Department Personnel Committee | 2023-2024

SI Faculty Liaison, Physics | 2019-2022, 2026-present

Faculty Search Committee | 2019-2020