

Contact Information

Marcos D. (Danny) Caballero (he/they)

Lappan-Phillips Professor of Math and Science Education

Michigan State University

Department of Physics & Astronomy

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CREATE for STEM Institute

Addresses

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Education

Georgia Institute of Technology (Atlanta, GA), Doctor of Philosophy in Physics, 2011; *Evaluating and Extending a Novel Course Reform of Introductory Mechanics*, supervised by Prof. Michael F. Schatz

Georgia Institute of Technology (Atlanta, GA), Master of Science in Physics, 2007

University of Texas at Austin (Austin, TX), Bachelor of Science in Physics, 2004

Academic Experience

Positions

- **2025 – Present**, Lappan-Phillips Professor Math and Science Education, Department of Physics and Astronomy & Department of Computational Mathematics, Science, and Engineering, Michigan State University
- **2023 – 2025**, Lappan-Phillips Professor of Physics Education, Department of Physics and Astronomy & Department of Computational Mathematics, Science, and Engineering, Michigan State University
- **2020 – 2023**, Associate Professor, Department of Computational Mathematics, Science, and Engineering
- **2018 – 2023**, Lappan-Phillips Associate Professor of Physics Education, Department of Physics and Astronomy, Michigan State University
- **2017 – Present**, Adjunct Associate Professor, Department of Physics, University of Oslo
- **2013 – Present**, Affiliated Faculty, CREATE for STEM Institute, Michigan State University
- **2013 – 2018**, Assistant Professor, Department of Physics and Astronomy, Michigan State University

versity

- **2011 – 2013**, Postdoctoral Researcher, Department of Physics, University of Colorado Boulder
- **2011 – 2013**, Research Affiliate, School of Physics, Georgia Institute of Technology
- **2005 – 2011**, Graduate Teaching and Research Assistant, School of Physics, Georgia Institute of Technology

Awards and Honors

- **2023** – Fellow of the American Physical Society, Group on Physics Education Research [\[Press\]](#)
“For foundational research and development on the roles of computation in physics education and contributions to research on undergraduate and graduate education in physics.”
- **2023** – APS Education Prize, Partnership for the Integration of Computing in Undergraduate Physics, Team Member [\[Press\]](#)
“For developing an active, inclusive, and supportive community of physics educators dedicated to integrating computation into their instruction; creating, reviewing, and disseminating instructional materials; and generating knowledge of computation in physics curricula and of effective practices.”
- **2022** – Physical Review PER Editor’s Suggestion (Topic: Computational Physics Education): *Student’ perspectives on computational challenges in physics class* [\[Paper\]](#)
- **2022** – Department Award for Improving Undergraduate Physics Education, Team Member, American Physical Society [\[Press\]](#)
- **2021** – Physical Review PER Editor’s Suggestion (Topic: Quantitative Methods for Education Research): *Framework for evaluating statistical models in physics education research* [\[Paper\]](#)
- **2021** – Physical Review PER Editor’s Suggestion (Topic: Graduate Physics Education): *Physics Graduate Record Exam does not help applicants “stand out”* [\[Paper\]](#)
- **2019** – Physical Review PER Editor’s Suggestion (Topic: Computational Physics Education): *Physics computational literacy: An exploratory case study using computational essays* [\[Paper\]](#)
- **2019** – Physics Education Research Conference Notable Paper [\[Press\]](#)
- **2019** – Featured in MSU Today for Teaching Innovation [\[Press\]](#)
- **2018** – President’s Distinguished Teaching Award, MSU [\[Press\]](#)
- **2018** – Teacher-Scholar Award, MSU [\[Press\]](#)
- **2017** – Featured in MSU Today for NSF grant [\[Press\]](#)
- **2016** – Physics Education Research Conference Notable Paper [\[Press\]](#)
- **2016** – College of Natural Science Teaching Prize, MSU
- **2015** – Thomas H. Osgood Memorial Awards for Faculty Excellence in Teaching, MSU
- **2014** – STEM Gateway Fellow, College of Natural Science, MSU

Publications

Citation Metrics



Marcos D Caballero

Other names >

Professor, [Michigan State University](#)
Verified email at msu.edu - [Homepage](#)

[STEM Education](#) [Physics Education](#) [Computing Education](#)

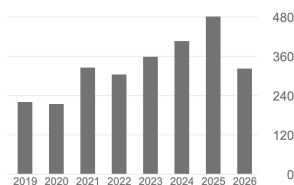
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Citations	3193	2200
h-index	32	26
i10-index	65	53

☐ TITLE	CITED BY	YEAR
☐ Characterizing college science assessments: The three-dimensional learning assessment protocol JT Lavery, SM Underwood, RL Matz, LA Posey, JH Carmel, ... PloS one 11 (9), e0162333	311	2016
☐ Challenge faculty to transform STEM learning MM Cooper, MD Caballero, D Ebert-May, CL Fata-Hartley, SE Jardeleza, ... Science 350 (6258), 281-282	202	2015
☐ Fostering students' epistemic agency through the co-configuration of moth research	144	2018



Google Scholar citation count as of August 17, 2026

Key Metrics

- Citations (Lifetime): 3193
- Citations (2025): 480
- h-index (papers cited 30+ times): 32
- i10-index (papers cited 10+ times): 65

Writing in Review

1. Wang, Y., Renbarger, R., Boyd, T., Bolger, E., Finkelstein, N., Henderson, C., Caballero, M. D., Beach, A., & Simkins, S. (2026). *Facilitating systemic change in undergraduate engineering education: A literature meta-synthesis on change strategies*.
2. Bolger, E., Renbarger, R., Boyd, T., Wang, Y., Caballero, M. D., Finkelstein, N., Simkins, S., Henderson, C., & Beach, A. (2026). *Integrating machine learning into systematic literature reviews: Advancing a human-in-the-loop framework*.

Books, Edited Volumes, and Chapters

1. Caballero, M. D. (Ed.). (2025). *Integrating computing into the undergraduate physics curriculum*. IOP Publishing. <https://doi.org/10.1088/978-0-7503-5372-4>
 - Caballero, M. D. (2025). Integrating computing in physics courses [Book Chapter]. In *Integrating computing into the undergraduate physics curriculum* (pp. 1-1 to 1-14). IOP Publishing. <https://doi.org/10.1088/978-0-7503-5372-4ch1>
 - Caballero, M. D. (2025). Where can we go from here? [Book Chapter]. In *Integrating computing into the undergraduate physics curriculum* (pp. 14-1 to 14-17). IOP Publishing. <https://doi.org/10.1088/978-0-7503-5372-4ch14>

Invited Articles and Papers

1. Caballero, M. D., & Odden, T. O. B. (2024). Computing in physics education. *Nature Physics*, 20(3), 339–341. <https://doi.org/10.1038/s41567-023-02371-2>
2. Young, N. T., Tollefson, K., & Caballero, M. D. (2023). Making graduate admissions in physics more equitable. *Physics Today*, 76(7), 40–45. <https://doi.org/10.1063/PT.3.5271>
3. Odden, T. O. B., & Caballero, M. D. (2023). Physics Computational Literacy: What, Why, and How? In *The International Handbook of Physics Education Research: Learning Physics*. AIP Publishing LLC. https://doi.org/10.1063/9780735425477_019
4. Knaub, A. V., Aiken, J. M., & Caballero, M. D. (2019). Editorial: Focused Collection: Quantitative Methods in PER: A Critical Examination. *Physical Review Physics Education Research*, 15, 020001. <https://doi.org/10.1103/PhysRevPhysEducRes.15.020001>
5. Caballero, M. D., & Hjorth-Jensen, M. (2018). Integrating a Computational Perspective in Physics Courses. In S. Magazù (Ed.), *New Trends in Physics Education Research* (pp. 47–76). Nova Science Publishers.
6. Caballero, M. D. (2017). Taking A Scientific Approach To Physics Education. *Student Journal of Physics*, 6(1). https://www.iopb.res.in/~sjp/sjp_past_issues/V6N1/1.pdf
7. Caballero, M. D., Kohlmyer, M. A., & F., M. (2011). Fostering Computational Thinking. In N. S. Rebello, P. V. Engelhardt, & C. Singh (Eds.), *2011 Physics Education Research Conference Proceedings* (pp. 15–18). <https://doi.org/10.1063/1.3679982>
8. Bujak, K. R., Caballero, M. D., Schatz, M. F., Marr, M. J., & Catrambone, R. (2011). Comparing the Matter and Interactions Curriculum with a Traditional Physics Curriculum: A Think Aloud Study. *2011 AERA Conference Proceedings*. <https://arxiv.org/abs/1011.5449v1>

Conference Reports

1. Caballero, M. D., Engelhardt, L., Knaub, A. V., Kuchera, M., Puerto, M. L. del, Lunk, B., Roos, K., & Zimmerman, T. (2022). *2021 PICUP Virtual Capstone Conference Report* (R. C. Hilborn, Ed.). American Association of Physics Teachers. https://www.compadre.org/picup//events/pdfs/2021_PICUP_Capstone_Report_Final_Final_220502.pdf
2. Caballero, M. D., Engelhardt, L., Hilborn, R., Puerto, M. L. del, & Roos, K. (2019). PICUP. The Partnership for the Integration of Computation into Undergraduate Physics. *APS News*, 28(3). <https://www.aps.org/publications/apsnews/201903/backpage.cfm>
3. Caballero, M. D., Dounas-Frazer, D. R., Lewandowski, H. J., & Stetzer, M. R. (2018). Labs are Necessary, and We Need to Invest in Them. *APS News*, 27(5). <https://www.aps.org/publications/apsnews/201805/backpage.cfm>

Articles Appearing in Peer-Reviewed Journals

1. Stroupe, D., Byun, S., Christensen, J., Ortiz, N., Willison, J., Reinholz, D. L., & Caballero, M. D. (2026). Supporting teachers to integrate computational practices and design opportunities for equitable participation in science classrooms. *Cognition and Instruction*, 44(2), 110–152. <https://doi.org/10.1080/07370008.2026.2630727>
2. Byun, S., Brennan, L., Christensen, J., Ortiz, N., Shah, N., Reinholz, D., Stroupe, D., & Caballero, M. D. (2026). Equity-focused coaching: Negotiating teachers' interpretations of racialized and gendered participation patterns. *Journal of Teacher Education*, 77(3), 212–229. <https://doi.org/10.1080/00220272.2026.2120000>

org/10.1177/00224871261417322

3. Sabo, H. C., Odden, T. O. B., & Caballero, M. D. (2026). How do we assess computation in physics? *The Physics Teacher*, 64(3), 200–203. <https://doi.org/10.1119/5.0174333>
4. Bolger, E., Nwobi, M., & Caballero, M. D. (2025). Characterizing faculty online learning community interactions using social network analysis. *Phys. Rev. Phys. Educ. Res.*, 21, 020133. <https://doi.org/10.1103/n3yf-5h29>
5. Geschwind, G., Vignal, M., Caballero, M. D., & Lewandowski, H. J. (2024). Evidence for validity and reliability of a research-based assessment instrument on measurement uncertainty. *Phys. Rev. Phys. Educ. Res.*, 20, 020125. <https://doi.org/10.1103/PhysRevPhysEducRes.20.020125>
6. Geschwind, G., Vignal, M., Caballero, M. D., & Lewandowski, H. J. (2024). Using a research-based assessment instrument to explore undergraduate students' proficiencies around measurement uncertainty in physics lab contexts. *Phys. Rev. Phys. Educ. Res.*, 20, 020105. <https://doi.org/10.1103/PhysRevPhysEducRes.20.020105>
7. Cooper, M. M., Caballero, M. D., Carmel, J. H., Duffy, E. M., Ebert-May, D., Fata-Hartley, C. L., Herrington, D. G., Lavery, J. T., Nelson, P. C., Posey, L. A., Stoltzfus, J. R., Stowe, R. L., Sweeder, R. D., Tessmer, S., & Underwood, S. M. (2024). Beyond active learning: Using 3-dimensional learning to create scientifically authentic, student-centered classrooms. *Plos One*, 19(5), e0295887. <https://doi.org/10.1371/journal.pone.0295887>
8. Vignal, M., Geschwind, G., Pollard, B., Henderson, R., Caballero, M. D., & Lewandowski, H. J. (2023). Survey of physics reasoning on uncertainty concepts in experiments: An assessment of measurement uncertainty for introductory physics labs. *Phys. Rev. Phys. Educ. Res.*, 19, 020139. <https://doi.org/10.1103/PhysRevPhysEducRes.19.020139>
9. Young, N. T., Verboncoeur, N., Lam, D. C., & Caballero, M. D. (2023). Rubric-based holistic review represents a change from traditional graduate admissions approaches in physics. *Phys. Rev. Phys. Educ. Res.*, 19, 010134. <https://doi.org/10.1103/PhysRevPhysEducRes.19.010134>
10. Young, N. T., Tollefson, K., Zegers, R. G. T., & Caballero, M. D. (2022). Rubric-based holistic review: A promising route to equitable graduate admissions in physics. *Phys. Rev. Phys. Educ. Res.*, 18, 020140. <https://doi.org/10.1103/PhysRevPhysEducRes.18.020140>
11. Hamerski, P. C., McPadden, D., Caballero, M. D., & Irving, P. W. (2022). Students' perspectives on computational challenges in physics class. *Phys. Rev. Phys. Educ. Res.*, 18, 020109. <https://doi.org/10.1103/PhysRevPhysEducRes.18.020109>
12. Weller, D. P., Bott, T. E., Caballero, M. D., & Irving, P. W. (2022). Development and illustration of a framework for computational thinking practices in introductory physics. *Phys. Rev. Phys. Educ. Res.*, 18, 020106. <https://doi.org/10.1103/PhysRevPhysEducRes.18.020106>
13. Wilson, J., Pollard, B., Aiken, J. M., Caballero, M. D., & Lewandowski, H. J. (2022). Classification of open-ended responses to a research-based assessment using natural language processing. *Physical Review Physics Education Research*. <https://doi.org/10.1103/PhysRevPhysEducRes.18.010141>
14. Sand, O. P., Caballero, M. D., Mørken, K. M., & Lockwood, E. (2022). Three Cases That Demonstrate How Students Connect the Domains of Mathematics and Computing. *Journal of Mathematical Behavior*. <https://doi.org/10.1016/j.jmathb.2022.100955>
15. Sand, O. P., Lockwood, E., Caballero, M. D., & Mørken, K. M. (2022). Students' Development of a Logarithm Function in Python Using Taylor Expansions: A Teaching Design Case Study. *Digital Experiences in Mathematics Education*. <https://doi.org/10.1007/s40751-022-00104-3>

16. Pollard, B., Hobbs, R., Henderson, R., Caballero, M. D., & Lewandowski, H. J. (2021). Introductory physics lab instructors' perspectives on measurement uncertainty. *Physical Review Physics Education Research*, 17, 010133. <https://doi.org/10.1103/PhysRevPhysEducRes.17.010133>
17. Young, N. T., & Caballero, M. D. (2021). Predictive and Explanatory Models Might Miss Informative Features in Educational Data. *Journal of Educational Data Mining*, 13(4), 31–86. <https://doi.org/10.5281/zenodo.5806830>
18. Young, N. T., & Caballero, M. D. (2021). Physics Graduate Record Exam does not help applicants “stand out”. *Physical Review Physics Education Research*, 17, 010144. <https://doi.org/10.1103/PhysRevPhysEducRes.17.010144>
19. Aiken, J. M., De Bin, R., Lewandowski, H. J., & Caballero, M. D. (2021). Framework for evaluating statistical models in physics education research. *Physical Review Physics Education Research*, 17, 020104. <https://doi.org/10.1103/PhysRevPhysEducRes.17.020104>
20. Mikkelsen, N. J., Young, N. T., & Caballero, M. D. (2021). Investigating institutional influence on graduate program admissions by modeling physics graduate record examination cutoff scores. *Physical Review Physics Education Research*, 17, 010109. <https://doi.org/10.1103/PhysRevPhysEducRes.17.010109>
21. Aiken, J. M., De Bin, R., Hjorth-Jensen, M., & Caballero, M. D. (2020). Predicting time to graduation at a large enrollment american university. *PLOS ONE*, 15(11). <https://doi.org/10.1371/journal.pone.0242334>
22. Irving, P. W., McPadden, D., & Caballero, M. D. (2020). Communities of practice as a curriculum design theory in an introductory physics class for engineers. *Physical Review Physics Education Research*, 16, 020143. <https://doi.org/10.1103/PhysRevPhysEducRes.16.020143>
23. Odden, T. O. B., Marin, A., & Caballero, M. D. (2020). Thematic analysis of 18 years of physics education research conference proceedings using natural language processing. *Physical Review Physics Education Research*, 16, 010142. <https://doi.org/10.1103/PhysRevPhysEducRes.16.010142>
24. Pawlak, A., Irving, P. W., & Caballero, M. D. (2020). Learning assistant approaches to teaching computational physics problems in a problem-based learning course. *Physical Review Physics Education Research*, 16, 010139. <https://doi.org/10.1103/PhysRevPhysEducRes.16.010139>
25. Bain, K., Matz, R. L., Fata-Hartley, C. L., Caballero, M. D., Ebert-May, D., Underwood, S. M., Carmel, J. H., Herrington, D. G., Lavery, J. T., Duffy, E. M., Stoltzfus, J. R., Bender, L., Posey, L. A., Urban-Lurain, M., Stowe, R. L., Sweeder, R. D., Tessmer, S. H., & Cooper, M. M. (2020). Characterizing College Science Instruction: The Three-Dimensional Learning Observation Protocol. *PLOS ONE*, 15(6), e0234640. <https://doi.org/10.1371/journal.pone.0234640>
26. Odden, T. O. B., Lockwood, E., & Caballero, M. D. (2019). Physics computational literacy: An exploratory case study using computational essays. *Physical Review Physics Education Research*, 15, 020152. <https://doi.org/10.1103/PhysRevPhysEducRes.15.020152>
27. Funkhouser, K., Martinez, W., Henderson, R., & Caballero, M. D. (2019). Design, Analysis, Tools, and Apprenticeship (DATA) Lab. *European Journal of Physics*, 40(6), 065701. <https://doi.org/10.1088/1361-6404/ab2f0d>
28. Caballero, M. D., Chonacky, N., Engelhardt, L., Hilborn, R. C., Lopez del Puerto, M., & Roos, K. R. (2019). PICUP: A Community of Teachers Integrating Computation into Undergraduate Physics Courses. *The Physics Teacher*, 57(6), 397–399. <https://doi.org/10.1119/1.5124281>
29. Aiken, J. M., Henderson, R., & Caballero, M. D. (2019). Modeling student pathways in a physics

- bachelor's degree program. *Physical Review Physics Education Research*, 15, 010128. <https://doi.org/10.1103/PhysRevPhysEducRes.15.010128>
30. Young, N. T., Allen, G., Aiken, J. M., Henderson, R., & Caballero, M. D. (2019). Identifying features predictive of faculty integrating computation into physics courses. *Physical Review Physics Education Research*, 15, 010114. <https://doi.org/10.1103/PhysRevPhysEducRes.15.010114>
 31. Caballero, M. D., & Merner, L. (2018). Prevalence and nature of computational instruction in undergraduate physics programs across the united states. *Physical Review Physics Education Research*, 14, 020129. <https://doi.org/10.1103/PhysRevPhysEducRes.14.020129>
 32. Matz, R. L., Fata-Hartley, C. L., Posey, L. A., Lavery, J. T., Underwood, S. M., Carmel, J. H., Herrington, D. G., Stowe, R. L., Caballero, M. D., Ebert-May, D., & Cooper, M. M. (2018). Evaluating the extent of a large-scale transformation in gateway science courses. *Science Advances*, 4(10). <https://doi.org/10.1126/sciadv.aau0554>
 33. Stroupe, D., Caballero, M. D., & White, P. (2018). Fostering students' epistemic agency through the co-configuration of moth research. *Science Education*, 1–25. <https://doi.org/10.1002/sce.21469>
 34. Lavery, J. T., & Caballero, M. D. (2018). Analysis of the most common concept inventories in physics: What are we assessing? *Physical Review Physics Education Research*, 14, 010123. <https://doi.org/10.1103/PhysRevPhysEducRes.14.010123>
 35. Pawlak, A., Irving, P. W., & Caballero, M. D. (2018). Development of the Modes of Collaboration framework. *Physical Review Physics Education Research*, 14, 010101. <https://doi.org/10.1103/PhysRevPhysEducRes.14.010101>
 36. Irving, P. W., Obsniuk, M. J., & Caballero, M. D. (2017). P³: a practice focused learning environment. *European Journal of Physics*, 38(5), 055701. <https://doi.org/10.1088/1361-6404/aa7529>
 37. Caballero, M. D., Doughty, L., Turnbull, A. M., Pepper, R. E., & Pollock, S. J. (2017). Assessing learning outcomes in middle-division classical mechanics: The colorado classical mechanics and math methods instrument. *Physical Review Physics Education Research*, 13, 010118. <https://doi.org/10.1103/PhysRevPhysEducRes.13.010118>
 38. Lavery, J. T., Underwood, S. M., Matz, R. L., Posey, L. A., Carmel, J. H., Caballero, M. D., Fata-Hartley, C. L., Ebert-May, D., Jardeleza, S. E., & Cooper, M. M. (2016). Characterizing College Science Assessments: The Three-Dimensional Learning Assessment Protocol. *PLOS ONE*, 11(9), e0162333. <https://doi.org/10.1371/journal.pone.0162333>
 39. Cooper, M. M., Caballero, M. D., Ebert-May, D., Fata-Hartley, C. L., Jardeleza, S. E., Krajcik, J. S., Lavery, J. T., Matz, R. L., Posey, L. A., & Underwood, S. M. (2015). Challenge faculty to transform STEM learning. *Science*, 350(6258), 281–282. <https://doi.org/10.1126/science.aab0933>
 40. Chasteen, S. V., Wilcox, B., Caballero, M. D., Perkins, K. K., Pollock, S. J., & Wieman, C. E. (2015). Educational transformation in upper-division physics: The Science Education Initiative model, outcomes, and lessons learned. *Physical Review Special Topics – Physics Education Research*, 11, 020110. <https://doi.org/10.1103/PhysRevSTPER.11.020110>
 41. Wilcox, B. R., Caballero, M. D., Baily, C., Sadaghiani, H., Chasteen, S. V., Ryan, Q. X., & Pollock, S. J. (2015). Development and uses of upper-division conceptual assessments. *Physical Review Special Topics – Physics Education Research*, 11, 020115. <https://doi.org/10.1103/PhysRevSTPER.11.020115>
 42. Caballero, M. D., Wilcox, B. R., Doughty, L., & Pollock, S. J. (2015). Unpacking students' use of mathematics in upper-division physics: Where do we go from here? *European Journal of*

- Physics*, 36(6), 065004. <https://doi.org/10.1088/0143-0807/36/6/065004>
43. Ding, L., & Caballero, M. D. (2014). Uncovering the hidden meaning of cross-curriculum comparison results on the force concept inventory. *Physical Review Special Topics – Physics Education Research*, 10, 020125. <https://doi.org/10.1103/PhysRevSTPER.10.020125>
 44. Hoskinson, A.-M., Couch, B. A., Zwickl, B. M., Hinko, K. A., & Caballero, M. D. (2014). Bridging physics and biology teaching through modeling. *American Journal of Physics*, 82(5), 434–441. <https://doi.org/10.1119/1.4870502>
 45. Caballero, M. D., & Pollock, S. J. (2014). A model for incorporating computation without changing the course: An example from middle-division classical mechanics. *American Journal of Physics*, 82(3), 231–237. <https://doi.org/10.1119/1.4837437>
 46. Caballero, M. D., Burk, J. B., Aiken, J. M., Thoms, B. D., Douglas, S. S., Scanlon, E. M., & Schatz, M. F. (2014). Integrating Numerical Computation into the Modeling Instruction Curriculum. *The Physics Teacher*, 52(1), 38–42. <https://doi.org/10.1119/1.4849153>
 47. Wilcox, B. R., Caballero, M. D., Rehn, D. A., & Pollock, S. J. (2013). Analytic framework for students' use of mathematics in upper-division physics. *Physical Review Special Topics – Physics Education Research*, 9, 020119. <https://doi.org/10.1103/PhysRevSTPER.9.020119>
 48. Hoskinson, A.-M., Caballero, M. D., & Knight, J. K. (2013). How can we improve problem solving in undergraduate biology?: Applying lessons from 30 years of physics education research. *Cell Biology Education - Life Science Education*, 12(2), 153–161. <https://doi.org/10.1187/cbe.12-09-0149>
 49. Chasteen, S. V., Pepper, R. E., Caballero, M. D., Pollock, S. J., & Perkins, K. K. (2012). Colorado upper-division electrostatics diagnostic: A conceptual assessment for the junior level. *Physical Review Special Topics – Physics Education Research*, 8, 020108. <https://doi.org/10.1103/PhysRevSTPER.8.020108>
 50. Caballero, M. D., Kohlmyer, M. A., & Schatz, M. F. (2012). Implementing and assessing computational modeling in introductory mechanics. *Physical Review Special Topics – Physics Education Research*, 8, 020106. <https://doi.org/10.1103/PhysRevSTPER.8.020106>
 51. Caballero, M. D., Greco, E. F., Murray, E. R., Bujak, K. R., Marr, M. J., Catrambone, R., Kohlmyer, M. A., & Schatz, M. F. (2012). Comparing large lecture mechanics curricula using the Force Concept Inventory: A five thousand student study. *American Journal of Physics*, 80(7), 638–644. <https://doi.org/10.1119/1.3703517>
 52. Kohlmyer, M. A., Caballero, M. D., Catrambone, R., Chabay, R. W., Ding, L., Haugan, M. P., Marr, M. J., Sherwood, B. A., & Schatz, M. F. (2009). Tale of two curricula: The performance of 2000 students in introductory electromagnetism. *Physical Review Special Topics – Physics Education Research*, 5, 020105. <https://doi.org/10.1103/PhysRevSTPER.5.020105>
 53. Cochran, A. L., Barker, E. S., Caballero, M. D., & György-Ries, J. (2009). Placing the Deep Impact Mission into context: Two decades of observations of 9P/Tempel 1 from McDonald Observatory. *Icarus*, 199(1), 119–128. <https://doi.org/10.1016/j.icarus.2008.08.015>

Articles Appearing in Peer-Reviewed Conference Proceedings

1. Renbarger, R., Wang, Y., Boyd, T., Bolger, E., Ison, M., Finkelstein, N., Henderson, C., Beach, A., Simkins, S., & Caballero, M. D. (2026). ECR: Creating transformational STEM education: A metasynthesis mapping a decade of systemic change research. *Proceedings of the American Society for Engineering Education Annual Conference*.

2. Wang, Y., Renbarger, R., Boyd, T., Bolger, E., Finkelstein, N., Henderson, C., Caballero, M. D., Beach, A., & Simkins, S. (2026). Change strategies in undergraduate STEM education: A meta-synthesis and update of a decade of research. *Proceedings of the American Educational Research Association Annual Meeting*.
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