

EDUCATION

- 1993-1996 **PhD in Developmental Psychology**
Clark University
Dissertation: *Communicative Processes in Cultural Identity Formation: A Mediated Action Account*
Chair: James V. Wertsch
Committee Members: James Paul Gee, Nancy Budwig
- 1991-1992 **EdM in Counseling Processes**
Harvard Graduate School of Education
Master's Project: *An Ethnographic Evaluation of an HIV/AIDS Prevention Program*
Advisor: Robert L. Selman
- 1988-1991 **BA in Psychology**
Clark University
Bachelor's Thesis: *Animals as Objects of Moral Concern: A Narrative Approach*
Advisor: Bernard Kaplan

HONORS AND AWARDS

2025 Wallace Lecture, American Educational Research Association (2025)
Outstanding Reviewer, *American Educational Research Journal* (2022)
Distinguished Professor, University of Colorado Boulder Regents (2020)
Outstanding Postdoc Mentor Award, University of Colorado Boulder (2020)
Elected Member, National Academy of Education (2019)
Fellow, International Society of the Learning Sciences (2019)
Fellow, International Society for Design and Development in Education (2015)
AERA Fellow (2014)
Jacob Hiatt Fellow in Psychology (1994-95)
Phi Beta Kappa (1991)
Graduated Summa Cum Laude from Clark University (1991)
Outstanding Undergraduate in Psychology (1991)

POSITIONS HELD

- 2020-present **Distinguished Professor of Learning Sciences and Human Development**
Institute of Cognitive Science and School of Education
University of Colorado-Boulder

POSITIONS HELD (Cont'd)

2011-2020	Professor of Learning Sciences and Human Development School of Education University of Colorado-Boulder
2006-2011	Director of Evaluation Research Center for Technology in Learning SRI International
2000-2006	Senior Education Researcher Center for Technology in Learning SRI International
1998-2000	Research Social Scientist Center for Technology in Learning SRI International
1997-98	Program Evaluator San Francisco Unified School District
1996-97	Program Evaluation Coordinator Metropolitan Nashville Public Schools

COURSES TAUGHT

Cognitive Science Research Practicum, University of Colorado
Advanced Qualitative Analysis, University of Colorado
Compassion and Dignity for Educators, University of Colorado
Designing Storylines for Curricular Transformation, University of Colorado
Psychological Foundations of Education, University of Colorado
Open Educational Resources in Science Education, University of Colorado
Educational Evaluation, University of Colorado
Seminar in Human Development, University of Colorado
Adolescent Development and Educational Psychology, University of Colorado
Adolescent Development for Teachers, University of Colorado
Learning with Technology in and out of School, University of Colorado
Contexts that Promote Youth Development, Stanford University
Technology in Science Education, University of South Carolina
Assessment of Student Multimedia Projects, Foothill College

MANUSCRIPTS IN PREPARATION

*Student author

Penuel, W. R., Pazera, C., & Campanella, M. (in preparation). Designing comparable transfer tasks of Next Generation Science Standards for curriculum evaluation.

Penuel, W. R. (in preparation). Preface to *Les partenariats recherche-practice en education*. Book author: Denis Pasco.

Penuel, W. R. (in preparation). The role of theory in classroom assessment. To appear in C. M. Evans (Ed.), *The SAGE Handbook of Research on Classroom Assessment*.

Penuel, W. R. (in preparation). Partnerships for justice-oriented K-12 STEM education. To appear in J. Ma & E. Tan (Eds), *The Oxford University Handbook of Justice-oriented STEM Education*.

Penuel, W. R., & Krumm, A. E. (in preparation). Strengthening formative and summative evaluation with evidence-centered design. To appear in E. Tucker & M. E. Oliveri (Eds.), *Modeling what matters: The research and legacy of Robert J. Mislevy*.

MANUSCRIPTS IN REVIEW

Anderson, E. A., Bohannon, A. X., & Penuel, W. R. (under review). What's the big idea? Conceptual uses of research in research-practice partnerships. *American Journal of Education*.

Buell, J. Y., Zhang, Y., Alzen, J., Griesemer, C., Pope, E., Edwards, K., Passmore, C., Penuel, W. R., & Reiser, B. J. (under review). Being and learning together: Epistemic care in service of sensemaking as a collective enterprise. *Science Education*.

Jacobs, J. *Glidewell, L., Allen, A.-R., Penuel, W. R., & Lo, A. S. (in revision). Defining Framework-aligned 5D science instruction: What does it look like and are teachers implementing it? *Journal of Science Teacher Education*.

Lo, A., Herrmann-Abell, C., Penuel, W. R., Allen, A.-R., Campanella, M., Cherbow, K.; Cooper, S.; Gardner, A.; *Glidewell, L.; Jacobs, J.; *O'Connor, K. (in revision). Building teachers' science assessment design capacity: Results of an experimental study of an online course for rural secondary educators. *American Educational Research Journal*.

REFEREED JOURNAL ARTICLES

Gholson, M., Reisman, A., Penuel, W. R., & Ma, J. (in press). Disciplinary learning that cultivates collective flourishing. *Review of Research in Education*.

- Penuel, W. R., Bakker, A., & Akkerman, S. (in press). Design research in between the past and future: Linking the epistemic, ontological, and axiological dimensions of generative projects. *Mathematical Thinking and Learning*.
<https://doi.org/10.1080/10986065.2025.2595715>
- Rubin, A., Puttick, G., Penuel, W. R., Henson, K., & Deverel-Rico, C. (in press). Using existing data to investigate ecosystem change. *Science Teacher*.
- Alzen, J., Buell, J. Y., Edwards, K., Griesemer, C., Zhang, Y., Passmore, C., Penuel, W. R., & Reiser, B. J. (2025). Developing science classroom expectations that encourage risk-taking for learning science together. *Science Education*, 109(6), 1716–1732. <https://doi.org/10.1002/sce.21990>
- Alzen, J., Buell, J. Y., Edwards, K., Reiser, B. J., Passmore, C., Penuel, W. R., & Griesemer, C. (2025). Characterizing variations in the figured worlds of teachers and students in science class. *Journal of Research in Science Teaching*, 62(6), 1654–1679. <https://doi.org/10.1002/tea.22022>
- Breideband, T., Bush, J., *Chandler, C., Chang, M., Hirshfield, L. M., Kann, K., Penuel, W. R., Reitman, J., Rose, S., Weatherly, J., & D’Mello, S. K. (2025). A feasibility and implementation integrity study of the Community Builder (CoBi): An AI-based collaboration support system in K-12 classrooms. *International Journal of Artificial Intelligence in Education*. <https://doi.org/10.1007/s40593-025-00509-2>
- *Ceperich, R., Allen, A.-R., *Tran, T., *Salinas del Val, Y., Penuel, W. R., *Leonhart, S., Rhinehart, A., & Davidson, K. L. (2025). Science education leaders’ sensemaking about equity through a vignette. *School Science and Mathematics*.
<https://doi.org/10.1111/ssm.70000>
- Farrell, C. C., Resnick, A. F., White, T., Arce-Trigatti, P., Penuel, W. R., Bochway, K. (2025). From brief to boundary object: A framework for designing boundary infrastructure for learning across research and practice. *Frontiers in Education*, 10, 1-15. <https://doi.org/10.3389/feduc.2025.1669123>
- *Glidewell, L., Jacobs, J., Allen, A.-R., Penuel, W. R., & Lo, A. S. (2025). A comparative case analysis of rural science teachers’ experiences with professional learning. *The Rural Educator*, 46(3), 43–59. <https://doi.org/10.55533/2643-9662.1529>
- Jornet, A., Penuel, W. R., Esteban-Guitart, M., & Akkerman, S. (2025). Socio-educational ecologies for learning, social change, and future thinking: Expanding educational psychology’s boundaries. *Acta Psychologica*.
<https://doi.org/10.1016/j.actpsy.2025.105156>
- Penuel, W. R. (2025). Education for flourishing: Building initiatives and partnerships for more just and sustainable futures. *Educational Researcher*.
<https://doi.org/10.3102/0013189X251386404> **2025 Wallace Foundation Distinguished Lecture**

- Penuel, W. R. (2025). From judging to attuning: Movements toward culturally sustaining assessment. [Peer reviewed invited commentary]. *Journal of the Learning Sciences*. <https://doi.org/10.1080/10508406.2025.2559836>
- Penuel, W. R., Neill, T. R., & Campbell, T. (2025). Supporting a state in developing a working theory of improvement for promoting equity in science education. *Frontiers in Education*, 29(10), 1-9. <https://doi.org/10.3389/feduc.2025.1431793>
- Penuel, W. R., *O'Connor, K., Allen, A.-R., Jacobs, J., & Lo, A. (2025). Examining science teachers' conceptions of student interest as a consideration in designing assessments. *Journal of Science Teacher Education* 36, (5), 643-663. <https://doi.org/10.1080/1046560X.2024.2435747>
- Penuel, W. R., Pazera, C., Buck Bracey, Z., Edelson, D. C., Henson, K., Reiser, B. J., Sumner, T., *Vick, N., Ryan, J., & Watkins, D. A. (2025). Organizing design and development research for relevance and impact. *Educational Designer*, 5(19), 1–29. <https://www.educationaldesigner.org/ed/volume5/issue19/article79/>
- Penuel, W. R., Philip, T. M., Chang, M. A., Sumner, T., & D'Mello, S. K. (2025). Responsible innovation in designing AI for education: Shifting from personalization to collaborative problem-solving. *Educational Researcher*. <https://doi.org/10.3102/0013189X251389879>
- Penuel, W. R., Rubin, A., Puttick, G., Henson, K., & Deverel-Rico, C. (2025). Balancing curriculum design goals for supporting students' work with data in a biology unit. *Educational Designer*, 5(19), 1–23. <https://www.educationaldesigner.org/ed/volume5/issue19/article78/>
- *Tran, T., Penuel, W. R., Singleton, C. A., Bell, P., & *Leonhart, S. (2025). Studying the implementation of equity projects in science education in divisive political contexts. *Science Education*, 109 (2), 627-649. <https://doi.org/10.1002/sci.21918>
- Farrell, C. C., Penuel, W. R., Arce-Trigatti, P., Soland, J., *Singleton, C., Resnick, A. F., Stamatis, K., Riedy, R., Henrick, E., Sexton, S., *Wellberg, S., & Schmidt, D. (2024). Designing measures of complex collaborations with participatory, evidence-centered design. *Frontiers in Research Metrics and Analytics*. 9, 1-11. <https://doi.org/10.3389/frma.2024.1210547>
- Penuel, W. R., Henson, K., Buck Bracey, Z., *Vick, N., & Rivet, A. (2024). Designing standards-aligned instructional materials that connect to students' interests and community priorities. *The Science Teacher*, 91 (5), 62-70. <https://doi.org/10.1080/00368555.2024.2390547>
- Penuel, W. R., *Raza, A., *Salinas Del Val, Y., Salinas-Estavez, R., Williamson, E., Smith, J., & Gill, Q. (2024). Making formative use of student experience data to

- promote equity in a cycle of collaborative teacher inquiry. *Science Scope*, 47 (2), 34-39. <https://doi.org/10.1080/08872376.2024.2314675>
- Penuel, W. R., Krumm, A. E., Pazera, C., *Singleton, C., Allen, A.-R., & *Deverel-Rico, C. (2024). Belonging in science classrooms: Investigating its relation to students' contributions and influence in knowledge building. *Journal of Research in Science Teaching*, 61(1), 228-252. <https://doi.org/10.1002/tea.21884>
- Potvin, A., Teeters, L. P., Penuel, W. R., & Dimidjian, S. (2024). Humanizing co-design through attention to educators' affective and relational experiences. *Journal of the Learning Sciences*. <https://doi.org/10.1080/10508406.2024.2318557>
- *Raza, A., Sumner, T., & Penuel, W. R. (2024). The Science Student Electronic Exit Ticket (SEET) System: Visualizations to help teachers notice and reflect on classroom inequalities. *Journal of Learning Analytics*, 11 (1) 87-100. <https://doi.org/10.18608/jla.2024.8199>
- *Riedy, R., & Penuel, W. R. (2024). Dignity-affirming care in research-practice partnerships. *Peabody Journal of Education*, 99 (3), 259-273. <https://doi.org/10.1080/0161956X.2024.2357008>
- *Singleton, C., *Deverel-Rico, C., Penuel, W. R., Krumm, A., Allen, A.-R., & Pazera, C. (2024). The role of equitable classroom cultures for supporting interest development in science. *Journal of Research in Science Teaching*, 61(5), 998-1031. <https://doi.org/10.1002/tea.21936>
- Soland, J., Penuel, W. R., Farrell, C. C., & *Wellberg, S. (2024). Developing a measure to evaluate education research-practice partnerships. *Research Evaluation*, 33, 1-15. <https://doi.org/10.1093/reseval/rvae042>
- Alvarez, A., Teeters, L. P., Penuel, W. R., & Esteban-Guitart, M. (2023). Principles to engage a funds of identity approach as a vehicle toward epistemic justice in educational settings. *Language, Culture, and Social Interaction*, 40, 100718. <https://doi.org/10.1016/j.lcsi.2023.100718>
- Alzen, J., Edwards, K., Penuel, W. R., Reiser, B. J., Passmore, C., Griesemer, C., *Zivic, A., *Murzynski, C., & Buell, J. Y. (2023). Characterizing relationships between collective enterprise and student epistemic agency in science: A comparative case study. *Journal of Research in Science Teaching*, 60(7), 1520-1550. <https://doi.org/10.1002/tea.21841>
- Farrell, C. C., *Singleton, C., Stamatis, K., *Riedy, R., Arce-Trigatti, P., & Penuel, W. R. (2023). Conceptions and practices toward equity in research-practice partnerships. *Educational Policy*, 37 (1), 200-224. <https://doi.org/10.1177/08959048221131566>

- Mawasi, A., Penuel, W. R., Cortez, A., & *McKoy, A. (2023). “They were learning from us as we were learning from them”: Perceived experiences in co-design process. *Mind, Culture, Activity*. <https://doi.org/10.1080/10749039.2023.2246039>
- Penuel, W. R., Allen, A. R., *Deverel-Rico, C., *Singleton, C., & Pazera, C. (2023). How teachers’ knowledge of curriculum supports partnering with students in their science learning. *Journal of Science Teacher Education*. <https://doi.org/10.1080/1046560X.2023.2167508>
- Farrell, C. C., Penuel, W. R., Allen, A.-R., Anderson, E., *Bohannon, A., Coburn, C. E., & Brown, S. (2022). Learning at the boundaries of research and practice: A framework for understanding research-practice partnerships. *Educational Researcher*, 51 (3), 197-208. <https://doi.org/10.3102/0013189X211069073>
- Farrell, C. C., Penuel, W. R., & Davidson, K. L. (2022). “What counts” as research? Comparing policy guidelines to the evidence education leaders report as useful. *AERA Open* 8 (1), 1-17. <https://doi.org/10.1177/23328584211073157>
- Penuel, W. R. (2022). Algunos principios de aprendizaje equitativo post-pandemia. *Education in the Knowledge Society*, 23. e27567. <https://doi.org/10.14201/eks.27567>
- Penuel, W. R., Allen, A.-R., Henson, K., Campanella, M., Patton, R., Rademaker, K., Reed, W., Watkins, D. A., Wingert, K., Reiser, B. J., & Zivic, A. (2022). Learning practical design knowledge through co-designing storyline science curriculum units. *Cognition and Instruction*, 40(1), 148-170. <https://doi.org/10.1080/07370008.2021.2010207>
- Penuel, W. R., Reiser, B. J., McGill, T. A. W., Novak, M. Van Horne, K., Orwig, A. (2022). Connecting student interests and questions with science learning goals through project-based storylines. *Disciplinary and Interdisciplinary Science Education Research*, 4(1), 1-27. <https://doi.org/10.1186/s43031-021-00040-z>
- Potvin, A. S., Penuel, W. R., Dimidjian, S., & Jinpa, T. (2022). Cultivating skillful means of care in schools through compassion practice and individual and joint inquiry. *Mindfulness*. <https://doi.org/10.1007/s12671-022-01867-x>
- Wingert, K., Jacobs, J. K., Lindsay, W., Lo, A. S., Herrmann-Abell, C. F., & Penuel, W. R. (2022). Understanding the priorities and practices of rural science teachers: Implications for designing professional learning. *The Rural Educator*, 43(3), 26-40. <https://doi.org/10.55533/2643-9662.1338>
- Akkerman, S., Bakker, A., & Penuel, W. R. (2021). Relevance of educational research: An ontological conceptualization. *Educational Researcher* 50 (6), 416-424. <https://doi.org/10.3102/0013189X211028239>
- Biddy, Q., Chakarov, A. G., Bush, J., Elliot, C. H., Jacobs, J. Recker, M., Sumner, T., Penuel, W. R. (2021). A professional development to integrate computational

- thinking into middle-school science through co-designed storylines. *Contemporary Issues in Technology and Teacher Education*, 21 (1), 53-96.
<https://www.learntechlib.org/p/216072/>
- Edelson, D. C., Reiser, B. J., McNeill, K. L., Mohan, A., Novak, M., Mohan, L., Affolter, R., McGill, T., Bracey, Z. B., Noll, J. D., Kowalski, S., Novak, D., Lo, A., Landel, C., Krumm, A., Penuel, W. R., Van Horne, K., González-Howard, M., & Suárez, E. (2021). Developing research-based instructional materials to support large-scale transformation of science teaching and learning: The approach of the OpenSciEd middle school program. *Journal of Science Teacher Education*, 32(7), 780-804. <https://doi.org/10.1080/1046560X.2021.1877457>
- Penuel, W. R., Furtak, E. M., & Farrell, C. C. (2021). Research-practice partnerships in education: Advancing an evolutionary logic of systems improvement. *Die Deutsche Schule*, 113(1), 45-62. <https://doi.org/10.31244/dds.2021.01.05>
- Reiser, B. J., Novak, M., McGill, T. A. W., & Penuel, W. R. (2021). Storyline units: An instructional model to support coherence from the students' perspective. *Journal of Science Teacher Education*, 32(7), 805-829.
<https://doi.org/10.1080/1046560X.2021.1884784>
- DiGiacomo, D., Van Horne, K., & Penuel, W. R. (2020). Choice and interest in designed learning environments: The case of FUSE Studios. *Information and Learning Sciences*.
<https://doi.org/10.1108/ILS-09-2019-0098>
- Esteban-Guitart, M., DiGiacomo, D. K., Penuel, W. R., & Ito, M. (2020). Principios, aplicaciones y retos del aprendizaje conectado. *Contextos Educativos: Revista de Educación*, 27, 157-176. <https://doi.org/10.18172/con.3966>
- Penuel, W. R., *Riedy, R., Barber, M. Peurach, D., LeBoeuf, W., & Clark, T. (2020). Principles of collaborative education research with stakeholders: Toward requirements for a new research and development infrastructure. *Review of Educational Research*. <https://doi.org/10.3102/0034654320938126>
- Staus, N. L., Falk, J. H., Penuel, W. R., Dierking, L., Wyld, J., & Bailey, D. (2020). Interested, disinterested, or neutral: Exploring STEM interest profiles and pathways in a low-income urban community. *EURASIA Journal of Mathematics, Science and Technology Education* 16 (6), em1853.
<https://doi.org/10.29333/ejmste/7927>
- Penuel, W. R. & Hill, H. C. (2019). Building a knowledge base on research-practice partnerships: Introduction to the special topic collection. *AERA Open*, 5 (4), 1-5.
<https://doi.org/10.1177/2332858419891950>
- Furtak, E. M., & Penuel, W. R. (2019). Coming to terms: Addressing the persistence of “hands-on” and other reform terminology in the era of science-as-practice. *Science Education*, 103 (1), 167-186. <https://doi.org/10.1002/sce.21488>

- *Kaplan, R. G., *Riedy, R., Van Horne, K., & Penuel, W. R. (2019). Going on a statewide listening tour: Involving education leaders in the process of research to enhance the practical value of qualitative research. *Evidence and Policy: A Journal of Research, Debate, and Practice*, 15 (2) 179-196.
<https://doi.org/10.1332/174426518X15193816575650>
- Penuel, W. R. (2019). Infrastructuring as a practice of design-based research for supporting and studying equitable implementation and sustainability of innovations. *Journal of the Learning Sciences*, 28 (4-5), 659-677.
<https://doi.org/10.1080/10508406.2018.1552151>
- Penuel, W. R., Turner, M. L., Jacobs, J. K., Van Horne, K., & Sumner, T. (2019). Developing tasks to assess phenomenon-based science learning: Challenges and lessons learned from building proximal transfer tasks. *Science Education*, 103 (6), 1367-1395. <https://doi.org/10.1002/sce.21544>
- Penuel, W. R., & *Watkins. D. (2019). Building a system of assessment in a school system to promote equity and epistemic justice: A use-case of a research-practice partnership in science education. *Annals of the American Academy of Political and Social Science*, 683, 201-216. <https://doi.org/10.1177/0002716219843249>
- Allen, C. D., DiGiacomo, D., Van Horne, K., & Penuel, W. R. (2018). Pursuing interests and getting involved: Exploring the conditions of sponsorship in youth learning. *Digital Education Review*, 33, 120-129. <https://doi.org/10.1344/der.2018.33.120-129>
- Anderson, C. W., de Los Santos, E. X., Bodbyl, S., Covitt, B. A., Edwards, K., *Hancock, B., *Lin, Q., Penuel, W. R., Thomas, C. M., Welch, M. (2018). Designing educational systems to support enactment of the Next Generation Science Standards. *Journal of Research in Science Teaching*, 55 (7), 1026-1052.
<https://doi.org/10.1002/tea.21484>
- DiGiacomo, D., Van Horne, K., *Van Steenis, E., & Penuel, W. R. (2018). The material and social constitution of interest. *Language, Culture, and Social Interaction*, 19, 51-60.
<https://doi.org/10.1016/j.lcsi.2018.04.010>
- Esteban-Guitart, M., Coll, C., & Penuel, W. R. (2018). Learning across settings and time in a digital age. *Digital Education Review*, 33, 1-16.
<https://doi.org/10.1344/der.2018.33.%25p>
- Frank, K. A., *Xu, R., & Penuel, W. R. (2018). Implementation of evidence-based practice in human service organizations: Implications from agent-based models. *Journal of Policy Analysis and Management*, 37(4), 867-895.
<https://doi.org/10.1002/pam.22081>

- Hopkins, M., Wiley, K., Penuel, W. R., & Farrell, C. C. (2018). Brokering research in science education policy implementation: The case of a professional association. *Evidence and Policy: A Journal of Research, Debate, and Practice*, 14 (3), 459-476. <https://doi.org/10.1332/174426418X15299595170910>
- Penuel, W. R., Bell, P., Neill, T., Shaw, S., Hopkins, M., & Farrell, C. C. (2018). Building a Networked Improvement Community to promote equitable, coherent systems of science education. *AASA Journal of Scholarship and Practice*, 15(1), 30-38.
- Penuel, W. R., Farrell, C. C., Allen, A.-R., *Toyama, Y., & Coburn, C. E. (2018). What research district leaders find useful. *Educational Policy*, 32(4), 540-568. <https://doi.org/10.1177/0895904816673580>
- Penuel, W. R. & O'Connor, K. (2018). From designing to organizing new social futures: Multiliteracies pedagogies for today. Special issue. *Theory into Practice*, 57(1), 64-71. <https://doi.org/10.1080/00405841.2017.1411715>
- Shepard, L. A., Penuel, W. R., & Pellegrino, J. W. (2018). Using learning and motivation theories to coherently link formative assessment, grading practices, and large-scale assessment. *Educational Measurement: Issues and Practice*, 37(1), 21-34. <https://doi.org/10.1111/emip.12189>
- Shepard, L. A., Penuel, W. R., & Pellegrino, J. W. (2018). Classroom assessment principles to support learning and avoid the harms of testing. *Educational Measurement: Issues and Practice*, 37(1), 52-57. <https://doi.org/10.1111/emip.12195>
- *Cartun, A., Penuel, W. R., & *West-Puckett, S. (2017). Blurring the boundaries between school and community: Implementing connected learning principles in English classrooms. *Journal of Adolescent and Adult Literacy*, 61 (2), 183-190. <https://doi.org/10.1002/jaal.668>
- Huguet, A., Allen, A.-R., Coburn, C. E., Farrell, C. C., Kim, D. H., & Penuel, W. R. (2017). Locating data use in the microprocesses of district-level deliberations. *Nordic Journal of Studies in Educational Policy*, 3 (1), 21-28. <https://doi.org/10.1080/20020317.2017.1314743>
- Maul, A., Penuel, W. R., Gallagher, L., *Dadey, N., Podkul, T., & *Price, E. (2017). Developing a measure of interest-related pursuits: The Connected Learning survey. *Educational Technology Research and Development*, 65 (1), 1-28. <http://dx.doi.org/10.1007/s11423-016-9453-6>
- Penuel, W. R. (2017). Research-practice partnerships as a strategy for promoting equitable science teaching and learning through leveraging everyday science. *Science Education* 101 (5), 520-525. <https://doi.org/10.1002/sce.21285>
- Penuel, W. R., Briggs, D. C., Davidson, K. L., Herlihy, C., *Sherer, D. Hill, H. C., Farrell, C. C., Allen, A.-R. (2017). How school and district leaders access,

- perceive, and use research. *AERA Open* 3 (2), 1-17.
<https://doi.org/10.1177/2332858417705370>
- Penuel, W. R., DeBarger, A. H., Boscardin, C. K., Moorthy, S., Beauvineau, Y., Kennedy, C. A., & *Allison, K. (2017). Investigating purposeful curriculum adaptation as a strategy to improve science teaching and learning. *Science Education*, 101 (1), 66-98. <https://doi.org/10.1002/sce.21249>
- Penuel, W. R., Van Horne, K., *DiGiacomo, D., & Kirshner, B. (2016). A social practice theory of learning and becoming across contexts and time. *Frontline Learning Research* 4 (4), 30-38. <https://doi.org/10.14786/flr.v4i4.205>
- Penuel, W. R., Clark, T. L., & Bevan, B. (2016). Infrastructures to support equitable STEM learning across settings. *Afterschool Matters*, 24, 12-20.
- *Severance, S., Penuel, W. R., Leary, H., & Sumner, T. (2016). Organizing for teacher agency in curricular co-design. *The Journal of the Learning Sciences*, 25 (4), 531-564. <https://doi.org/10.1080/10508406.2016.1207541>
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Bell, P., Stromholt, S., Van Horne, K., Penuel, W. R., Neill, T., Shaw, S. (2017). *How to assess three-dimensional learning in your classroom: Building assessment tasks that work*. Seattle, WA: University of Washington. Available at: <http://stemteachingtools.org/pd/sessionb>.

Penuel, W. R., Novak, M., McGill, T., Van Horne, K., & Reiser, B. J. (2017). *How to define meaningful daily learning objectives for science investigations*. Seattle, WA: University of Washington. Available at: <http://stemteachingtools.org/brief/46>.

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Northwestern University and Inquiry Hub Partnership team. (2016-2018). *Why don't antibiotics work the way they used to: A next generation science storyline*. Available at: <http://www.nextgenstorylines.org/why-dont-antibiotics-work-like-they-used-to>.

Penuel, W. R., Allen, A.-R., Clark, T. R., & Ciplet, J. (2016). *The research-practice partnership toolkit*. Boulder, CO: Research+Practice Collaboratory. Available at: <http://researchandpractice.org/toolkit/>.

Penuel, W. R., & Van Horne, K. (2016). *Prompts for integrating crosscutting concepts into assessment and instruction*. Seattle, WA: University of Washington. Available at: <http://stemteachingtools.org/brief/41>.

Penuel, W. R., & Bell, P. (2016). *Qualities of a good anchor phenomenon for a coherent sequence of science lessons*. Seattle, WA: University of Washington. Available at: <http://stemteachingtools.org/brief/28>.

Van Horne, K., Penuel, W. R., & Bell, P. (2016). *Integrating science practices into assessment tasks*. Seattle, WA: University of Washington. Available at: <http://stemteachingtools.org/brief/30>.

Penuel, W. R., Van Horne, K., & Bell, P. (2016). *Steps to designing a three dimensional assessment*. Seattle, WA: University of Washington. Available at: <http://stemteachingtools.org/brief/29>.

*Cafarella, J., & Penuel, W. R. (2015). *Research brief: Supporting teacher professional communities to implement school-wide initiatives*. Seattle, WA: University of Washington. Available at: <http://stemteachingtools.org/brief/24>.

Cook-Endres, T., Taylor, A., & Penuel, W. R. (2014). *Using curriculum adaptation as a strategy to help teachers learn about NGSS and developing aligned instructional materials*. Seattle, WA: University of Washington. Available at: <http://stemteachingtools.org/brief/5>.

INVITED PRESENTATIONS

Penuel, W. R. (2024, November). *Taking the political into account in studies of research-practice partnerships*. Invited presentation at the William T. Grant Foundation Grantee Meeting, Cape Town, South Africa.

Penuel, W. R. (2024, October). *Making our science classrooms more equitable by expanding our curriculum and our teaching*. Keynote presentation at the New Mexico Science Teachers Association Meeting, Albuquerque, NM.

Penuel, W. R., & Ko, M-L. (2024, October). *Responsible innovation of AI to support equitable collaboration*. Invited presentation to the Open Educational Resources Community of Practice, Denver, CO.

Penuel, W. R. (2024, May). *Reimagining teaching and learning in schools with research-practice partnerships*. Keynote presentation at Reimagining Pedagogies International Conference 2024, National Institute of Education, Singapore.

Penuel, W. R. (2023, December). *Partnering with rural teachers to design science assessment tasks*. Presentation to the Northeast and Islands Regional Education Laboratory. [online]

Penuel, W. R. (2023, October). *Research-practice partnerships: Organizing for joint work toward equity and justice*. Presentation to the Racial and Social Justice Research-Practice Partnership Collaborative at the University of Maryland, College Park, MD.

- Penuel, W. R. (2022, November). *Codiseño de tecnología para aumentar la inteligencia humana: Un enfoque democrático para promover la equidad a través de las TICs*. Invited keynote at EDUTEC 2022 Palma XXV Congreso Internacional.
- Penuel, W. R., & Watkins, D. (2022, September). *Partnering to promote equity through formative assessment*. Invited presentation to Spencer Foundation meeting on research-practice partnerships.
- Penuel, W. R. (2022, June). *Infrastructuring and knowledge building*. Invited speaker for workshop on infrastructuring at International Society for the Learning Sciences (virtual).
- Shepard, L. A., & Penuel, W. R. (2022, March). *A vision for equitable assessment grounded in curriculum*. Invited presentation to the Science Performance Assessment Learning Collaborative.
- Penuel, W. R. (2021, November). *Principios de aprendizaje equitativo postpandemia*. Invited keynote at the International Conference of Research in Education. Salamanca, Spain. Talk available at: <https://youtu.be/9N0WFUnVzoE>
- Penuel, W. R. (2021, July). *Engaging students in addressing community priorities and global matters of concern through justice-focused design projects*. National Science Education Leadership Association Summer Leadership Institute. [virtual]
- Penuel, W. R. (2021, May). *Centering the perspectives of nondominant groups and communities in designing and supporting meaningful science experiences*. University of Oslo, Oslo, Norway. [virtual]
- Penuel, W. R. (2021, March). *Expanding design research to transform learning across settings*. Keynote presentation at the ICO International Spring School 2020, Rolduc Abbey, Kerkrade, the Netherlands. [virtual]
- Penuel, W. R. (2020, January) *Introduction to Design-Based Implementation Research*. Invited presentation to the Wheelock College of Education and Human Development, Boston University, Boston, MA.
- Penuel, W. R. (2020, January). *Introduction to Research-Practice Partnerships*. Invited presentation to the Wheelock College of Education and Human Development, Boston University, Boston, MA.
- Penuel, W. R. (2020, January). *Implementation Research in DBIR*. Invited presentation to the Wheelock College of Education and Human Development, Boston University, Boston, MA.
- Penuel, W. R. (2019, November). *Building equitable research-practice partnerships*. Invited presentation at the Simmons School of Education and Human Development, Southern Methodist University. Dallas, TX.

Penuel, W.R., & Bruno, J. (2019, April). *Developing and supporting research-practice partnerships (RPPs)*. Invited presentation to the Annual Conference of the Council of State Science Supervisors. St. Louis, MO.

Penuel, W. R. (2019, February). *Introduction to Design-Based Implementation Research*. Invited presentation to the Learning Sciences Research Institute, University of Illinois-Chicago. Chicago, IL.

Penuel, W. R. (2019, January). *Introduction to Design-Based Implementation Research*. Invited presentation to the McKay School of Education, Brigham Young University. Provo, Utah.

Penuel, W. R. (2018, November). *Making Science Learning Meaning for All Students, or Why “All Means All” Requires Getting to Know Student Interests, Experiences, and Identities*. Keynote at the Kentucky Science Teachers Association. Lexington, KY.

Penuel, W. R., (2018, July). *Connected learning*. Invited presentation to the Bofill Foundation, Barcelona, Catalonia, Spain.

Penuel, W. R. (2018, June). *Connecting science curriculum to students’ interests and identities*. Invited presentation at the University of Barcelona, Catalonia, Spain.

Penuel, W. R. (2018, March). *Building an equitable and coherent system of assessments in a district: A partnership approach*. Annual Marzano Lecture, Rutgers University, New Brunswick, NJ.

Penuel, W. R. (2018, January). *Strengthening infrastructures for promoting equity in mathematics education through research-practice partnerships*. Presentation to the Joint Mathematics Meetings, San Diego, CA.

Penuel, W. R. (2017, November). *Research-practice partnerships as a strategy for developing and using evidence in policy and practice*. Invited presentation at the Dean’s Lecture Series, University of Sydney School of Education and Social Work, Sydney, Australia.

Penuel, W. R., & Watkins, D. (2017, June). *Developing capacity through curricular co-design*. Invited presentation to the Board on Science Education, National Academies, Washington, DC.

Penuel, W. R. (2017, April). *Building capacity through developing and supporting new curriculum materials in a research-practice partnership*. Invited presentation to the Center for Science Teaching and Learning at Northern Arizona University.

Penuel, W. R. (2017, March). *Design-based implementation research*. Invited presentation at the Carnegie Foundation for the Advancement of Teaching Improvement Summit, San Francisco, CA.

- Penuel, W. R. (2017, March). *Selecting anchoring phenomena for equitable science teaching and learning*. Invited workshop for the Colorado Science Education Network, Boulder, CO.
- Shepard, L., & Penuel, W. R. (2017, February). *Deepening formative assessment practice*. Invited address to the FAST and Science SCAS of the Council of Chief State School Officers, New Orleans, LA.
- Penuel, W. R., & Bevan, B. (2017, January). *Developing research-practice partnerships*. Invited workshop series to teams developing proposals for NSF solicitation, “Computer Science for All: Research-Practice Partnerships), Atlanta, GA, Los Angeles, CA, and Chicago, IL.
- Penuel, W. R. (2016, November). *Designing and building infrastructures to support equitable STEM learning across settings*. Invited keynote address at the Bridging Learning Experiences Conference, Barcelona, Catalonia, Spain.
- Penuel, W. R. (2016, October). *Mapping research questions and program elements in partnership research*. Invited talk at the White House Office of Science and Technology Policy, Washington, DC.
- Penuel, W. R. (2016, October). *Design-Based Implementation Research*. Invited talk to the Institute for School Partnership, Washington University, St. Louis, MO.
- Penuel, W. R. (2016, May). *‘Infrastructuring’ as a practice for promoting equity and transformation in design-based implementation research*. Invited talk given at the Friday Institute for Educational Innovation, Raleigh, NC.
- Penuel, W. R. (2016, April). *Getting to scale with equitable teaching and learning*. Presidential Session at the American Educational Research Association Meeting, Washington, DC.
- Penuel, W. R., Bell, P. L., Briggs, D. C., Buffington, P. J., Coburn, C. E., Farley-Ripple, E. N., Hill, H. C., May, H., & Spillane, J. P. (2016, April). *Reconceptualizing how we study and support research use*. Invited Panel at the American Educational Research Association Meeting, Washington, DC.
- Penuel, W. R. (2015, October). *Getting to scale with new visions of teaching and learning*. Paper presented at the Using Continuous Improvement to Integrating Design, Implementation, and Scale Up, Nashville, TN.
- Penuel, W. R. (2015, September). *‘Infrastructuring’ as a practice for promoting equity and transformation in design-based implementation research*. Paper presented at the International Society for Design and Development in Education (ISDDE) 15, Boulder, CO.

- Penuel, W. R. (2015, May). *Design-Based Implementation Research: An introductory workshop*. Presentation given at the University of Girona. Girona, Catalonia, Spain: University of Girona.
- Penuel, W. R., & Martin, C. (2015, April). *Design-Based Implementation Research as a strategy for expanding opportunity to learn in school districts*. Invited presentation to the Research Conference of the National Council of Teachers of Mathematics, Boston, MA.
- Penuel, W. R. (2014, December). *Getting to scale and sustainability with design-based implementation research*. Invited presentation to Board on Science Education, National Academies, Irvine, CA.
- Penuel, W. R. (2014, December). *Preparing teachers to support three-dimensional science learning*. Invited presentation at “Sharing the Adventure with the Student: Exploring the Intersections of NASA Space Science and Education, A Workshop.” National Academy of Sciences, Washington, DC.
- Penuel, W. R. (2014, November). *Developing assessments for the Next Generation Science Standards*. Invited presentation and workshop for the Colorado Front Range Science Supervisors, Denver, CO.
- Penuel, W. R., Shea, M. V., Frost, F., & Gallagher, D. (2014, October). *Strategies for negotiating problems of practice with partners*. Invited presentation to the Math-Science Partnership Conference, Washington, DC.
- Penuel, W. R. (2014, October). *Assessment and the Next Generation Science Standards*. Invited presentation and workshop for the Colorado Science Education Network, Boulder, CO.
- Penuel, W. R. (2014, September). *Supporting instructional shifts in the Next Generation Science Standards*. Invited presentation and workshop for the Colorado Front Range Science Supervisors, Denver, CO.
- Penuel, W. R., *Heredia, S., Rigby, J., & Russell, J. (2014, August). *Fidelity and beyond: Developing and using implementation evidence in research and development projects*. Invited symposium at the National Science Foundation’s DRK-12 Principal Investigators Meeting.
- Penuel, W. R. (2014, June). *Research-based models for professional development*. Invited presentation to Building State Capacity in State Science Education Meeting, Denver, CO.
- Shouse, A., & Penuel, W. R. (2014, June). *Adapting instructional models to NGSS practices: What needs to be done to reach all learners?* Invited presentation to Building State Capacity in State Science Education Meeting, Denver, CO.

- Penuel, W. R., & McLaren, P. (2014, April). *Developing assessments of science proficiency: Recommendations of NRC Report*. Invited presentation to Council of State Science Supervisors Annual Conference, Boston, MA.
- Penuel, W. R. (2014, February). *Studying and supporting interest development*. Invited presentation as part of CREATE speaker series, Michigan State University, East Lansing, MI.
- Penuel, W. R., Falk, J., & Dierking, L. (2013, December). *The Synergies Agent-Based Model: Preliminary work, challenges, and opportunities*. Invited presentation to the Seoul National University, Seoul, South Korea.
- Penuel, W. R., & Fishman, B. J. (2013, November). *Design-Based Implementation Research: Working in partnership to transform the relation of research and practice*. Webinar presented through MSP Net to the NSF Math and Science Partnership community.
- Penuel, W. R. (2013, October). *Developing and using implementation evidence in research and development efforts*. National Science Foundation, Washington, DC.
- Penuel, W. R. (2013, September). *Improving implementation of innovative teaching practices: From fidelity to principled adaptation of curricula*. Invited presentation at the University of Twente, the Netherlands.
- DeBarger, W. R., Penuel, W. R., & Harris, C. H. (2013, September). *Designing NGSS assessments to evaluate the efficacy of curriculum interventions*. Invited presentation for the Joint meeting of the Council of Chief State School Officers and the State Collaborative on Assessment and Student Standards, Washington, DC.
- Penuel, W. R. (2013, August). *Introduction to the Next Generation Science Standards*. Invited presentation to the Boulder Valley School District, Boulder, CO.
- Penuel, W. R. (2013, August). *Designing for change in complex educational systems*. Invited presentation to Waterbury Summit, Pennsylvania State University, State College, PA.
- Penuel, W. R. (2013, July). *Design-Based Implementation Research: Working in partnership(s) to transform the relation of research and practice*. Paper presented at the Maine Physical Science Partnership, University of Maine, Bangor, ME.
- Penuel, W. R., & Fishman, B. J. (2013, May). *Design-Based Implementation Research: Working in partnership to transform the relation of research and practice*. Presentation to the Northwestern University Multidisciplinary Program in Education Sciences, Evanston, IL.
- Penuel, W. R. (2013, April). *Research, development, and assessment with badges: An equity and diversity perspective*. Presentation at the STEM Badges: Current Terrain and Beyond Meeting, National Science Foundation, Arlington, Virginia.

Penuel, W. R. (2013, March). *Digital media and learning in early childhood*. Invited presentation to the National Center for Quality Teaching and Learning, University of Washington, Seattle, WA.

Penuel, W. R. (2012, September). *Planning for change: Issues of implementation and scale*. Keynote address presented at the Nevada STEM Smart Workshop, Las Vegas, NV.

Penuel, W. R. (2009, January). *Organizing, leading, and sustaining innovation in professional learning communities*. Keynote address presented at the Microsoft Innovative Schools Conference, London, England.

SELECTED RECENT PRESENTATIONS

Buell, J. Y., Zhang, Y., Griesemer, C. D., Alzen, J., Edwards, K. D., Reiser, B. J., Passmore, C., & Penuel, W. R. (2024, March). *“It makes you feel like you’ve actually been, like, heard”*: Care in collective sensemaking. NARST Annual Meeting. [Virtual].

*O’Connor, K., Allen, A.-R., & Penuel, W. R. (2024, March 18). Examining Science Teachers’ conceptions of student interest as a consideration in designing assessments. NARST 2024 Annual International Conference, Denver, CO.

Bell, P., Penuel, W. R., Morrison, D. L., & Neill, T. (2023, October). *Promoting equity by systematically noticing and responding to learning experiences through practical measures*. Workshop presented at the National Science Teaching Association National Meeting, Kansas City, MO.

Penuel, W. R. (2023, October). *Developing storylines from a compelling anchor*. Workshop presented at the National Science Teaching Association National Meeting, Kansas City, MO.

Penuel, W. R., & Bell, P. (2023, October). *How to design justice-focused 3D assessments in science*. Workshop presented at the National Science Teaching Association National Meeting, Kansas City, MO.

Penuel, W. R., & Neill, T. (2023, October). *Adapting Open Education Resources (OER) instructional materials to connect to local phenomena and priorities*. Workshop presented at the National Science Teaching Association National Meeting, Kansas City, MO.

Penuel, W. R., & Neill, T. (2023, October). *Selecting anchoring phenomena for equitable 3D teaching*. Workshop presented at the National Science Teaching Association National Meeting, Kansas City, MO.

Penuel, W. R., Bell, P., Bang, M., & Tzou, C. (2023, June). *Solidarity-based codesign for equity and justice in STEM education*. Workshop at the NSF DRK12 Principal Investigators Meeting, Alexandria, VA.

- *Campanella, M., & Penuel, W. R. (2023, April). *The meeting as a site for deepening and sustaining commitment and action for racial justice*. Poster presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- Penuel, W. R. (2023, April). iSAT: *Using responsible innovation to build and test an AI partner for collaborative learning*. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- Penuel, W. R., Allen, C. D., Manz, E., & Heredia, S. (2023, April). *Design-Based Implementation Research as an approach to studying teacher learning in research-practice partnerships focused on equity*. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- *Raza, A., Penuel, W. R., Li, J., & Frank, K. A. (2023, April). *Using student experience data in a collaborative inquiry cycle to support equity in the science classroom*. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- *Riedy, R., & Penuel, W. R. (2023, April). *Dignity-affirming care in research-practice partnerships*. Poster presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- Penuel, W. R., Diaz-Bilello, E., & Rosa, R. (2023, April). *We need curriculum-linked classroom assessments focused on learning*. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- Penuel, W. R., Krumm, A. E., Pazera, C., *Singleton, C. A., Allen, A-R., & *Deverel-Rico, C. (2023, April). *Belonging in science classrooms: Investigating its relation to students' contributions and influence in knowledge building*. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- Penuel, W. R., Potvin, A. S., & Van Steenis, E. (2023, April). *Supporting educators in organizing for compassionate schools*. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- Henson, K., Penuel, W. R., Buck-Bracey, Z., & Vick, N. (2023, March). *Introducing OpenSciEd High School*. Professional Learning Institute presented at the National Science Teaching Association National Meeting, Atlanta, GA.
- Lo, A., Penuel, W. R., & Wingert, K. (2022, April). *Supporting teachers in designing assessments aligned to the vision of the Framework: Findings from two design studies*. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.
- Potvin, A., Penuel, W. R., & Dimidjian, S. (2022, April). *Supporting educators; development in skillful application of compassion in schools through collaborative design*. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.

- Penuel, W. R., & *Riedy, R. (2022, April). *Whose commons? Answerable to whom and to what?* Panel presentation at the Annual Meeting of the American Educational Research Association, San Diego, CA.
- Rhinehart, A., & Penuel, W. R. (2022, April). *How actors throughout the network of science education would change their state systems.* Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.
- *Ceperich, R., *Tran, T., *Salinas del Val, Y., & Penuel, W. R. (2022, April). *Science education leaders' sensemaking and noticing for equity.* Paper presented at NARST International Conference, Vancouver, BC.
- *Deverel-Rico, C., Allen, A.-R., Penuel, W. R., & Pazera, C. (2022, April). *Learning to teach with storylines.* Paper presented at NARST International Conference, Vancouver, BC.
- *Raza, A., Penuel, W. R., *Salinas del Val, Y. (2022, April). *Supporting science teachers in using student experience data to support more equitable participation in science classrooms.* Paper presented at NARST International Conference, Vancouver, BC.
- Peurach, D., Russell, J. L., Penuel, W. R., Eddy-Spicer, D., Datnow, A., Cannata, M., Cohen-Vogel, L., & Daly, A. (2021, April). *Introducing the foundational handbook on improvement research in education.* 2-21 Carnegie Foundation Summit on Improvement in Education, virtual.
- Farrell, C. C., Penuel, W. R., Davidson, K. L., Arce-Trigatti, P., & Soland, J. (2021, April). *Assessing the effectiveness of research-practice partnerships: An evidence-centered design approach.* Paper presented at the Annual Meeting of the American Educational Research Association. [virtual]
- Penuel, W. R., Wingert, K., Curran, A., Warrior, D., & Sidler, E. (2021, April). *Co-created learning: Interest surveys and content dissemination.* Paper presented at the Annual Meeting of the American Educational Research Association. [virtual]
- Rhinehart, A., *Arada, K., Penuel, W. R., & *Garcia, M. M. (2021, April). *How state leaders would change their state systems of science education.* Paper presented at the NARST Annual Meeting, virtual.
- Farrell, C. C., & Penuel, W. R. (2020, April). *Methodological trade-offs for research-practice partnership evaluation.* Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA. [Conference cancelled]
- Farrell, C. C., Penuel, W. R., *Daniel, J., *Steup, J., & Coburn, C. E. (2020, April). *Research-practice partnerships: Current practices, future possibilities.* Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA. [Conference cancelled]

- Penuel, W. R., Raza, A., Watkins, D. A., Allen, A., Sumner, T. (2020, April). *Measuring and supporting student experiences in biology classrooms: Design tensions in assessing interest and identity dimensions of science learning*. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA. [Conference cancelled]
- Wingert, K., & Penuel, W. R., Urbano-Torres, A. (2020, April). *Power, pollution and particles: Designing a youth-led chemistry curriculum*. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA. [Conference cancelled]
- Biddy, Q., *Gendreau Chakarov, A., Sumner, T., Recker, M., & Penuel, W. R. (2020, January). *Integrating computational thinking into middle school science through co-designed storylines*. Paper presented at the Association for Science Teacher Education International Conference, San Antonio, TX.
- Alzen, J., Penuel, W. R., Reiser, B. J., & Passmore, C. (2019, March). *What goes into facilitating purposeful sensemaking in the classroom? Theorizing about teacher learning*. Paper presented at the NARST International Conference, Baltimore, MD.
- Kali, Y., Van Horne, K., *Watkins, D., Jacobs, J., & Penuel, W. R. (2019, April). *Ethical dilemmas and deliberative dialogue as means for increasing students' science capital: A World Café-inspired design*. Paper presented at the Annual Meeting of the American Educational Research Association, Toronto, Ontario, Canada.
- Morrison, D., *Riedy, R., & Penuel, W. R. (2019, March). Practical measures to sense and support states' implementation efforts of science education reform. Paper presented at the NARST International Conference, Baltimore, MD.
- Penuel, W. R., (2019, March). *Viewing collective activism through the lenses of critical science education research*. Paper presented at the NARST International Conference, Baltimore, MD.
- Penuel, W. R., Lo, A., Jacobs, J., Stuhlsatz, M., Wilson, C., & Van Horne, K. (2019, March). *Tools for supporting teachers to build quality 3D assessment tasks*. Paper presented at the NARST International Conference, Baltimore, MD.
- *Riedy, R., *Tesoriero, G., & Penuel, W. R. (2019, April). *Understanding the vision for science in Next Generation Science Standards adopting and nonadopting states*. Paper presented at the Annual Meeting of the American Educational Research Association, Toronto, Ontario, Canada.
- *Widman, S., *Repko-Erwin, M., & Penuel, W. R. (2019, April). *Negotiating mutualism: A comparative case study of researchers and practitioners collaboratively scaling STE(A)M education initiatives*. Paper presented at the Annual Meeting of the American Educational Research Association, Toronto, Ontario, Canada.

- Penuel, W. R., *Frumin, K., Van Horne, K., & Jacobs, J. (2018, April). *A phenomenon-based assessment system for three-dimensional science standards: Why do we need it and what can it look like in practice?* Paper presented at the Annual Meeting of the American Educational Research Association, New York, NY.
- Penuel, W. R., Reiser, B. J., Novak, M., McGill, T., *Frumin, K., Van Horne, K., Sumner, T., & *Watkins, D. A. (2018, April). *Using co-design to test and refine a model for three-dimensional science curriculum that connects to students' interests and experiences.* Paper presented at the Annual Meeting of the American Educational Research Association, New York, NY.
- Penuel, W. R., Van Horne, K., Jacobs, J., & *Turner, M. (2018, April). *Developing a validity argument for practical measures of student experience in project-based science classrooms.* Paper presented at the Annual Meeting of the American Educational Research Association, New York, NY.
- Penuel, W. R., Van Horne, K., Jacobs, J., Sumner, T., Watkins, D., & *Quigley, D. (2017). *Developing NGSS-aligned curriculum that connects to students' interests and experiences: Lessons learned from a co-design partnership.* Paper presented at the NARST Annual Conference, San Antonio, TX.
- Weidler-Lewis, J., Penuel, W. R., & Van Horne, K. (2017, April). *Developing a measure of teachers' vision for equitable science teaching and learning.* Paper presented at the NARST Annual Conference, San Antonio, TX.
- D'Angelo, C., Moorthy, S., *Allen, C. D., Harris, C. D., Penuel, W. R. (2016, April). *Exploring variation in curriculum implementation through data visualization of teacher talk.* Paper presented at the 2016 NARST International Conference, Baltimore, MD.
- *Severance, S., Penuel, W. R., Manz, E. I., & Leary, H. A. (2016, April). *Teacher learning of modeling practices in the NGSS across professional development and classroom settings.* Paper presented at the 2016 NARST International Conference, Baltimore, MD.
- Pinkard, N., Penuel, W. R., *Dibie, O., *Sultan, A. M., *Quigley, D., Sumner, T., Van Horne, K., Acholonu, U. (2016, April). *Mapping and modeling the abundance, diversity, and accessibility of summer learning opportunities at the scale of a city.* Paper presented at the American Educational Research Association Annual Meeting, Washington, D. C.
- Penuel, W. R., *Severance, S., Reiser, B. J., Kincaid, P., Miller, J., Yacoubian, J., Martin, C., & Leary, H. (2015, April). *Curriculum co-design as a strategy for supporting equitable implementation of Next Generation Science Standards.* Paper to be presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- Penuel, W. R., Falk, J., Dierking, L., Hendry, M., Harrison, J., & Staus, N. (2015, April). *Using agent-based modeling to gain insight into interest development.* Paper to be presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.

- Penuel, W. R., Harris, C. J., D'Angelo, C., Gallagher, L. P., Cheng, B. H., Moorthy, S., & Krajcik, J. (2015, April). *Supporting next generation science teaching and learning with curriculum materials: Results from an efficacy study*. Paper to be presented at NARST Annual Conference, Chicago, IL.
- *Cafarella, J., Penuel, W. R., Staus, N., *Wyld, J., *Bailey, D., Dierking, L., & Falk, J. (2015, April). *Investigating complementary approaches to measuring interest in science*. Paper to be presented at NARST Annual Conference, Chicago, IL.
- *Cartun, A., & Penuel, W. R. (2015, April). *Youth voices on sponsorship of literacy in an emerging participatory culture in a school setting*. Paper to be presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.
- *Severance, S., *Allen, C., & Penuel, W. R. (2015, April). *Leveraging professional development to design and enact NGSS-aligned materials in uncertain policy contexts*. Paper to be presented at NARST Annual Conference, Chicago, IL.
- Penuel, W. R., Bevan, B., Bell, P., Buffington, P., & Falk, J. (2014, April). *Using social network concepts to enhance research use in planning for educational change*. Paper presented in Presidential Session of the Annual Meeting of the American Educational Research Association, Philadelphia, PA.
- Penuel, W. R., & Otero, V. (2014, April). *Design-Based Implementation Research for improving undergraduate STEM education*. Paper presented in Presidential Session of the Annual Meeting of the American Educational Research Association, Philadelphia, PA.
- Maul, A., Penuel, W. R., *Dadey, N., Gallagher, L. P., Podkul, T., & Sauerteig, D. (2014, April). *Emerging validity evidence for a survey measure of connected learning*. Paper presented at the Annual Meeting of the American Educational Research Association, Philadelphia, PA.
- *Allen, C., Penuel, W. R., & D'Angelo, C. (2014, March). *Beyond content and standards knowledge: Examining systemic coherence through teacher sensemaking for the successful implementation of the Next Generation Science Standards*. Paper presented at the NARST Annual Meeting, Pittsburgh, PA.
- Penuel, W. R. (2013, April). *The change laboratory as a method of design-based research*. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA.
- Penuel, W. R. (2013, April). *Theorizing science learning in practice*. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA.
- Penuel, W. R., Llorente, C., Van Brunt, J., & Drummond, M. (2013, April). *Synthesis of recent literature on technology and media for early literacy learning*. Paper presented at the

Annual Meeting of the American Educational Research Association, San Francisco, CA.

Penuel, W. R., Sun, M., Frank, K. A., & Gallagher, H. A. (2013, April). *Using social network analysis to study how collegial interactions can augment teacher learning from external professional development*. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, CA.

Penuel, W. R., DeBarger, A., Kim, C. B., Moorthy, S., Beauvineau, Y., Kennedy, C. A., . . . *Allison, K. (2013, April). *Improving learning by improving classroom assessment in Earth science: Findings from the Contingent Pedagogies project*. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, San Juan, PR.

Penuel, W. R., *York, A. J., Kirshner, B., Falk, J. H., Dierking, L. D., Haun-Frank, J., . . . *Bailey, D. (2012, April). *Youth participatory research as a boundary practice in place-based partnerships for expanding learning opportunities in communities*. Paper presented at the Annual Meeting of the American Educational Research Association, Vancouver, BC.

Penuel, W. R., & Means, B. (2010, November). *Using large-scale databases in evaluation: Advances, opportunities, and challenges*. Paper presented at the Annual Meeting of the American Evaluation Association, San Antonio, TX.

Penuel, W. R. (2010, October). *Leveraging student interest and choice in designs for STEM learning in formal and informal contexts*. Paper presented at the Principal Investigators Meeting of the National Science Foundation's Science of Learning Centers, Arlington, VA.

Stevens, R., & Penuel, W. R. (2010, October). *Studying and fostering learning through joint media engagement*. Paper presented at the Principal Investigators Meeting of the National Science Foundation's Science of Learning Centers, Arlington, VA.

Penuel, W. R. (2010, September). *The role of intra-organizational processes in mediating institutional diffusion*. Paper presented as part of the IES Lecture Series at the University of Pennsylvania, Philadelphia, PA.

Penuel, W. R., Frank, K. A., Sun, M., Kim, C., & Singleton, C. (2010, August). *The role of intra-organizational processes in mediating institutional diffusion*. Paper presented at the Annual Meeting of the American Sociological Association, Atlanta, GA.

Penuel, W. R., Cheng, B., Harris, C. J., & Phillips, R. (2010, April). *Translating design principles into practice: A comparative case study of three design-based research projects in the LIFE Center*. Paper presented at the Annual Meeting of the American Educational Research Association, Denver, CO.

Penuel, W. R., Bates, L., Townsend, E., Gallagher, L. P., Pasnik, S., & Llorente, C. (2010, March). *A media-rich curriculum for improving early literacy outcomes of low-income*

children: Evaluation results for the Ready to Learn Initiative. Paper presented at the Annual Conference of the Society for Research on Effectiveness in Education, Washington, DC.

*Phillips, R. S., Harris, C. J., Penuel, W. R., & Cheng, B. (2010, March). *Teachers managing students' ideas, questions, and contributions in the context of an innovative inquiry-based elementary science unit.* Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, Philadelphia, PA.

Gallagher, L. & Penuel, W. R. (2009, April). *Preparing teachers to design instruction in middle school Earth science: Impacts of three professional development programs on student learning.* Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.

Penuel, W. R. (2009, April). *Evaluating the DELTA Project.* Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.

O'Connor, K., & Penuel, W. R. (2009, April). *Organizing as a metaphor for learning and research on learning.* Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.

Fishman, B. J., Penuel, W. R., Hegedus, S. J., Tatar, D., Dickey, M., Moniz, R., et al. (2009, April). *What happens when the research ends? Factors related to the sustainability and scalability of a research-based innovation.* Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.

Penuel, W. R. (2009, January). *Organizing, leading, and sustaining innovation in professional learning communities.* Keynote Presentation at the Microsoft Innovative Schools Conference, London, England.

Fishman, B. J., Penuel, W. R., Gallagher, L. P., Lopez-Prado, B., & Korbak, C. (2008, June). *The mediating role of coherence in curriculum implementation.* Paper presented at the 8th International Conference of the Learning Sciences, Utrecht, the Netherlands.

Rafanan, K., Roschelle, J., Bhanot, R., Gorges, T., & Penuel, W. R. (2008, June). *Measuring mathematics discourse in technology-supported collaborative activities.* Paper presented at the 8th International Conference of the Learning Sciences, Utrecht, the Netherlands.

Penuel, W. R., & Gallagher, L. P. (2008, March). *Comparing three approaches to preparing teachers to teach for deep understanding in Earth science: Short-term impacts on teachers' instructional planning and practice.* Paper presented at the Annual Meeting of the American Educational Research Association, New York, NY.

Penuel, W. R., McWilliams, H., & McAuliffe, C. (2007, December). *Investigating the role of the teacher in science curriculum: New evidence for an old debate.* Paper presented at the American Geophysical Union Fall Meeting 2007, San Francisco, CA.

- Penuel, W. R., Riel, M., Frank, K. A., & Krause, A. (2007, April). *Teacher networks and the diffusion of innovations*. Paper presented at the 4th Lake Arrowhead Conference on Human Complex Systems, Lake Arrowhead, CA.
- *Joshi, A., & Penuel, W. R. (2007, April). *The role of institutionalized norms of autonomy and equality in shaping interactions of teachers*. Paper presented at the 4th Lake Arrowhead Conference on Human Complex Systems, Lake Arrowhead, CA.
- Penuel, W. R., Riel, M., & Sussex, W. (2007, April). *A network perspective on teacher collaboration: Teachers' social capital and the enactment of curricular reforms*. Paper presented at the American Educational Research Association Annual Meeting, Chicago, IL.
- Penuel, W. R., Frank, K. A., & Krause, A. (2007, April). *A social network approach to examining the effects of distributed leadership in schoolwide reform initiatives*. Paper presented at the American Educational Research Association Annual Meeting, Chicago, IL.
- Penuel, W. R., Frank, K. A., & Riel, M. (2007, February). *Instructional change and improved achievement: The significance of the internal social structure of schools*. Paper presented at the Conference on Human and Social Capital in Learning Systems, Pittsburgh, PA.
- Penuel, W. R., Kreikemeier, P., Venezky, D. Y., Blank, J. G., Davatzes, A. E. K., & Davatzes, N. C. (2006, December). *Assessing teachers' comprehension of what matters in Earth science*. Paper presented at the American Geophysical Union Fall Meeting 2006, San Francisco, CA.
- Penuel, W. R., Sussex, W., & Korbak, C. (2005, October). *Mapping the distribution of expertise and resources in a school: A social capital approach to evaluating school capacity*. Paper presented at the Joint Conference of the Canadian Evaluation Society and the American Evaluation Association, Toronto, Ontario.
- Penuel, W. R., & Sussex, W. (2005, August). *GLOBE Year 10 evaluation results*. Paper presented at the 10th Annual GLOBE Conference, Prague, Czech Republic.
- Penuel, W. R., Riel, M., Korbak, C., & Means, B. (2004, April). *Investigation of a social capital approach to the adoption of reform practices*. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.
- Penuel, W. R., Shear, L., Korbak, C., & Sparrow, E. (2004, April). *The roles of regional partners in supporting an international science inquiry program*. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.
- Yarnall, L., & Penuel, W. R. (2004, April). *Designing handheld software to support classroom assessment*. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA.

Penuel, W. R., & Means, B. (2004, February). *The effectiveness of technology-supported science education: Studying what works how, when, and for whom*. Paper presented at the Annual Meeting of the American Association for the Advancement of Science, Seattle, WA.

RECORD OF EXTERNAL FUNDING FOR RESEARCH

As Principal Investigator or Project Director

2025-2028	“Co-Design as a Strategy for Translation and for Scaling and Sustaining K–12 STEM Innovations” \$744,671 Funder: National Science Foundation
2022-2023	“OpenSciEd High School Professional Development” \$200,000 Funder: Carnegie Corporation of New York
2021-2025	“Science Performance Assessment Learning Collaborative: Initiative for Curriculum-Embedded Assessment” \$241,076 Funder: Learning Policy Institute
2021-2024	“OpenSciEd High School Developers Consortium: Supporting Equity and Building Capacity through Collaborative Science Curriculum” \$7,800,000 Funder: Carnegie Corporation of New York
2020-2025	“Preparing Teachers to Design Tasks to Support, Engage, and Assess Science Learning in Rural Schools” \$2,999,000 Funder: National Science Foundation
2020-2023	“Collaborative Research: EMBEDS: Exploring the Mathematics of Biological Ecosystems with Data Science” \$200,000 Funder: National Science Foundation
2018-2021	“Deepening Learning through Culturally Relevant Phenomenon-Based Science Teaching” \$1,000,000 Supplement for 2018: \$409,000 Funder: Hewlett Foundation
2017-2021	“Building Capacity for Using Data on Student Experience as Formative Assessment (SEFA) to Promote Equitable Instruction”

	\$400,000 Funder: Spencer Foundation
2017-2020	“EAGER: Examining an Innovative Approach to Supporting Science Teachers Practice towards Three-Dimensional Learning Goals through Adapting Classroom Assessment Tasks” \$299,837 Funder: National Science Foundation
2017-2018	“Developing a Typology of Continuous Improvement Research in Education” \$75,000 Funder: Spencer Foundation
2016-2018	“EAGER: Smart and Connected Communities: Reducing Friction in the L3 Connects Infrastructure: Embedding a Recommender System into Mobile Apps to Support Real-time Brokering” \$189,988 Funder: National Science Foundation
2016-2019	“Partnership for Building Capacity for Improvement in State Science Education” \$ 1,499,998 Funder: National Science Foundation
2014-2018	“National Center for Research in Policy and Practice” \$4,995,000 Funder: Institute of Education Sciences, U.S. Department of Education
2012-2017	“Connected Learning Research Network Survey Study” \$729,295 Funder: MacArthur Foundation
2011-2012	“Developing and Testing Theories of Implementation: A Workshop on Design Research with Educational Systems” \$184,779 Funder: REESE Program, National Science Foundation
2010-2015	“Evaluation of the Ready to Learn Content Alliance” \$4,874,999 Funder: Office of Innovation and Improvement, U.S. Department of Education

2008-2012	<p>“Developing Contingent Pedagogies: Integrating Technology-Enhanced Feedback into a Middle School Science Curriculum to Improve Conceptual Teaching and Learning”</p> <p>\$2,199,970</p> <p>Funder: DRK-12 Program, National Science Foundation</p>
2007-2009	<p>“Evaluation of the MathForward Initiative”</p> <p>\$728,000</p> <p>Funder: Texas Instruments, Inc.</p>
2006-2010	<p>“Evaluation of the Ready to Learn Initiative”</p> <p>\$2,070,000</p> <p>Funder: Office of Innovation and Improvement, U.S. Department of Education</p>
2006-2009	<p>“Analyzing the Flow of Network-Embedded Expertise in Schools: A Longitudinal Study of Individual and Organizational Change”</p> <p>\$551,484</p> <p>Funder: Human and Social Dynamics Program, National Science Foundation</p>
2005-2009	<p>“Comparing the Efficacy of Three Approaches to Transforming Instruction in Earth Science Education”</p> <p>\$1,864,415</p> <p>Funder: Institute of Education Sciences, U.S. Department of Education</p>
2004-2008	<p>“21st Century Community Learning Centers Program Implementation Study”</p> <p>\$1,642,462</p> <p>Funder: Program and Policy Studies Service, U.S. Department of Education</p>
2003-2007	<p>“Evaluation of the Global Learning to Benefit the Environment (GLOBE) Program: A Systemic Approach.”</p> <p>\$910,659</p> <p>Funder: Elementary, Secondary, and Informal Education, National Science Foundation</p>
2003-2007	<p>“Exploration of a Social Capital Framework for Evaluative Studies of Technology Integration”</p> <p>\$1,346,733</p> <p>Funder: ROLE, National Science Foundation</p>
2003-2005	<p>“Evaluation of the <i>Routes to Learning</i> Initiative”</p> <p>\$75,000</p>

Funder: Koret Foundation

2002-2005 “Handheld Assessment: Portable Scaffolds for Project-based Learning in Science?”
\$ 1,822,042
Funder: ROLE, National Science Foundation

As Co-Principal Investigator

2025-2029 “Piloting High Quality Instructional Materials in Secondary Science to Foster Instructional Improvements”
Funder: National Science Foundation
\$934,240

2025-2030 “AI Institute for Student AI Teaming”
Funder: National Science Foundation
\$20,000,000

2024-2026 “Collaborative Research: A Study on a Research Practice Partnership’s Impact on Elementary Teachers' Capacity and Sense of Belonging as Computing Educators”
Funder: National Science Foundation
\$238,011

2024-2025 “OpenSciEd Middle School Mathematics Study”
Funder: Bill & Melinda Gates Foundation
\$161,163

2023-2025 “Embedding Research into Organizational Routines to Deepen the Use of Evidence”
Funder: William T. Grant Foundation
\$600,000

2020-2024 “Developing a Model of Teacher Learning to Support Computationally Rich Communication in Science Classrooms”
Funder: James S. McDonnell Foundation
\$2,499,702

2019-2021 “Advancing Coherent and Equitable Systems of Science Education: Supporting Middle Schools”
Funder: Bill and Melinda Gates Foundation
\$152,238

2019-2024 “Advancing Coherent and Equitable Systems of Science Education”

	Funder: National Science Foundation \$2,500,000
2019-2023	“Measuring the Effectiveness of Research-Practice Partnerships in Education” Funder: William T. Grant Foundation \$635,337
2018-2020	“Research-Practice Partnerships White Paper 2.0” Funders: William T. Grant Foundation and Spencer Foundation \$125,000
2018-2024	“Developing a Model of Teacher Learning to Support Classroom Enactment of Three-Dimensional Science Teaching” Funder: James S. McDonnell Foundation \$5,000,000 (CU Portion: \$203,428)
2017-2020	“Collaborative Research: Using a School-Based Sensing Platform and Targeted Teacher Professional Development to Support Computational Thinking Integration and Student Learning” Funder: National Science Foundation \$2,123,801
2016-2019	“Capturing Connected Learning in Libraries” \$772,864 Funder: Institute of Museum and Library Services
2016-2017	“EAGER: Early Stage Research on Automatically Identifying Instructional Moves in Mathematics” \$299,928 Funder: National Science Foundation
2015-2017	“Curriculum Units That Exemplify Three Dimensional Learning and Assessment” \$ 834,528 Funder: Gordon & Betty Moore Foundation
2013-2018	“A Research+Practice Collaboratory” \$1,441,305 Funder: National Science Foundation
2012-2016	“INDP: Inquiry Hub” \$1,520,531 Funder: National Science Foundation

2012-2016	<p>“From Users to Coproducers of Research Evidence: A Study of Place-Based Research Partnerships”</p> <p>\$591,901</p> <p>Funder: William T. Grant Foundation</p>
2011-2015	<p>“Synergies: Understanding and Connecting STEM Learning in the Community”</p> <p>\$601,177</p> <p>Funder: Noyce Foundation</p>
2010-2015	<p>“Efficacy Trial of Project Based Inquiry Science”</p> <p>\$5,000,000</p> <p>Funder: National Science Foundation</p>
2006-2011	<p>“Evaluation of the National Writing Project”</p> <p>\$5,000,000</p> <p>Funder: U.S. Department of Education</p>
2003-2005	<p>“The CATAALYST - Planning a Rigorous Study”</p> <p>\$231,607</p> <p>Funder: National Science Foundation</p>

PATENTS

Method and Apparatus for Group Learning via Sequential Explanation Templates
US8092227 B2
January 10, 2012

EXTERNAL PROFESSIONAL SERVICE

2025-present	Identity and Vision Committee, National Academy of Education
2024-present	Steering Committee Member, Collaborative for Advancing Science Teaching and Learning in K-12, National Academies of Sciences, Engineering, and Medicine
2021-present	Editorial Board member, <i>Educational Researcher</i>
2023-2025	Standing review committee member, Transformative Research in Education, Spencer Foundation
2018-2025	Member, Board on Science Education (BOSE), National Academies of Sciences, Engineering, and Medicine

2021-2024	Member, committee for Equity in PreK-12 STEM Education, National Academies of Sciences, Engineering, and Medicine
2020-2023	Member, NAEd/Spencer Postdoctoral Fellowship Review Committee (Chair in 2022)
2018-present	Editorial Board member, <i>the Journal of the Learning Sciences</i>
2016-present	Ad hoc reviewer, Spencer Foundation grants
2014-present	Editorial Board member, <i>Mind, Culture, Activity</i>
2014-2018	Standing review panel member, Institute of Education Sciences, <i>Researcher-Practitioner Partnerships Program</i>
2007-present	Editorial Board Member, <i>Teachers College Record</i>
2007-2018	Regular reviewer, <i>Sociology of Education</i>
2010-2017	Editorial Board Member, <i>American Journal of Evaluation</i>
2012-2016	Advisory board member, Building Capacity for State Science Education Initiative, Council of State Science Supervisors
2008-2015	Editorial Board Member, <i>Cognition & Instruction</i>
2014	Reviewer, National Science Foundation DRK-12 program
2012-2014	Conference co-chair, 11 th International Conference of the Learning Sciences
2012-2013	Member, National Research Council committee on Assessment and the Next Generation Science Standards
2011-2013	Member, Geographical Sciences Education Research Committee
2011-2013	Member, Geographical Sciences Education Research Committee
2011-2013	Associate Editor, <i>American Educational Research Journal</i>
2009-2012	Regular reviewer, <i>Elementary School Journal</i>
2008	Reviewer, Informal Science Education Program (NSF)
2006	Reviewer, Human and Social Dynamics Program (NSF)

2005-2011	Reviewer, <i>Science Education</i>
2004	Reviewer, SBIR program (NSF)
2003	Reviewer, ROLE program (NSF)
1996-2000	Reviewer, <i>Journal of Research on the Teaching of English</i>
1995-1997	Vice President, Cultural-Historical SIG of the American Educational Research Association

MEMBERSHIPS

American Educational Research Association
 International Society of the Learning Sciences
 National Association for Research in Science Teaching
 National Science Teachers Association

DOCTORAL STUDENTS

Current Doctoral Students (chair or co-chair)

Nancy Hoang, University of Colorado Boulder

Past Students (chair or co-chair)

Heather MacGillivray, University of Colorado Boulder (Ph.D., 2014)

Chad Nash, University of Colorado Boulder (Ph.D., 2015)

Sam Severance, University of Colorado Boulder (Ph.D., 2016)

Carrie D. Allen, University of Colorado Boulder (Ph.D., 2016)

Ashley Potvin, University of Colorado Boulder (Ph.D., 2017)

Josephina Chang-Order, University of Colorado Boulder (Ph.D., 2019)

Tanya Ennis, University of Colorado Boulder (Ph.D., 2022)

Robbin Riedy, University of Colorado Boulder (Ph.D., 2022)

Ali Raza, University of Colorado Boulder (Ph.D, 2022)

Melissa Campanella, University of Colorado Boulder (Ph.D., 2024)

Ashieda McKoy, University of Colorado Boulder (Ph.D., 2025)