Joseph L. Polman

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Education

Ph.D. (Learning Sciences), School of Education & Social Policy, Northwestern University, 1997.
  Dissertation entitled *Guiding science expeditions: The design of a learning environment for project-based science*.

B.A. (Comparative Literature, with German), Brown University, 1988.
  Thesis: Representations & receptions of individualism in modern novels of the United States and the German Democratic Republic.

Certificate, President's Academic Leadership Institute, University of Missouri System, 2010.

Professional Experience and Appointments

Professor, Learning Sciences and Human Development/STEM Education   2012-present
School of Education, University of Colorado Boulder

Associate Dean for Research   2012-present
School of Education, University of Colorado Boulder

Fellow   2012-present
Institute of Cognitive Science, University of Colorado Boulder

Fellow   2016-present
National Education Policy Center, University of Colorado Boulder

Affiliated Faculty   2022-present
Department of Information Science
College of Media, Communication, and Information, University of Colorado Boulder

Visiting Professor   Spring 2019
Universiteit van Amsterdam

Professor, Educational Technology and Educational Psychology   2012
College of Education, University of Missouri-St. Louis

Associate Professor, Educational Technology and Educational Psychology   2005-2012
College of Education, University of Missouri-St. Louis

Chair, Division of Teaching and Learning   2007-2012
College of Education, University of Missouri-St. Louis

Assistant Professor, Educational Technology and Educational Psychology   1999-2005
College of Education, University of Missouri-St. Louis

James S. McDonnell Foundation Postdoctoral Fellow   1997-1999
Washington University in St. Louis, St. Louis, MO

Instructor, "Informal Learning Environments" Course   1998-1999
Washington University in St. Louis, St. Louis, MO

Curriculum Developer   1997
TERC (Technical Education Research Center), Cambridge, MA

Teaching Assistant, "Human-Computer Interaction" Course   Fall 1994
Northwestern University (Lead Instructor, Louis Gomez)

Research Assistant, Learning Through Collaborative Visualization (CoVis) Project,   1993-1997
School of Education and Social Policy, Northwestern University, Evanston, IL

Project Manager   1991-1992
Spinnaker Software Corporation, Cambridge, MA

Product Development and Technical Support Specialist   1989-1990
Spinnaker Software Corporation, Cambridge, MA

Teacher, International Research and Exchange (IREX) Intensive English Program   1988-1989
Brown University, Providence, RI

Faculty Member, Fachpraktikum Anglistik Intensive English Program,   1988
Wilhelm Pieck University, Rostock, Germany

Awards and Honors

Finalist for Best Design Paper, International Conference of the Learning Sciences, for "Looking back to see myself: Analepsis as tool to deepen proleptic notions of identity development" (co-authored with Kristina Stamatis, Trang Tran, and Jose Rogelio Manriquez Hernandez), 2024.

Best Paper, *Journal of the Learning Sciences*, for "Reconfiguring science education through caring human inquiry and design with pets" (co-authored with Priyanka Parekh, Shaun Kane, and R. Benjamin Shapiro), 2023.

Finalist for the Literacy Research Association's Edward B. Fry Book Award, for *Compose Our World: Project Based Learning in Secondary English Language Arts* (co-authored with Alison Boardman, Antero Garcia, and Bridget Dalton), 2021.

ISLS Fellow, International Society of the Learning Sciences, Elected 2021.

National Science Teachers Association (NSTA) Research Worth Reading List, for the *Journal of Research in Science Teaching* article "Science news stories as boundary objects affecting engagement with science," 2014.

Gustav Ohaus Innovations in Science Teaching, College Level Award, from the National Science Teachers Association, 2002 (with Patricia Simmons, Monya Ruffin, and Chrissie Kirkendall).

University of Missouri System New Faculty Teaching Scholars selection, 2001-2002.

University of Missouri-St. Louis Faculty Performance Shares award (with Carl Hoagland) for promoting the UM-St. Louis Strategic Planning goal of program quality and success, 2001.

Saint Louis Science Center "Shining Star Award" for educators, 2001.

Outstanding Faculty Award, University of Missouri-St. Louis College of Education, 2001.

James S. McDonnell Foundation Postdoctoral Fellowship in Cognitive Studies for Educational Practice, 1997-1999.

Outstanding Dissertation Award, Northwestern University Chapter of Phi Delta Kappa, 1998.

Constance Dorothea Weinman Scholarship for Graduate Study in Instructional Technology, 1994-1995.

University Fellowship, Northwestern University Graduate School, 1992-1993.

Graduated magna cum laude with Honors Thesis, Brown University, 1988.

Publications

(Key: *student, **postdoctoral scholar, or †practicing educator at time of authorship)

Books, Edited Volumes, and Reports

Schwartz, H. N., Skoog-Hoffman, A., Polman, J., Kelly, O., Bañales, J., & Jagers, R. (2023). Integrated learning, integrated lives: Highlighting opportunities for transformative SEL within academic instruction. SEL Innovations Series. Collaborative for Academic, Social, and Emotional Learning (CASEL). https://casel.org/sel-innovations-2/

Polman, J. L. (2023). Science learning for navigating a complex information landscape. Paper commissioned by the Committee on Understanding and Addressing Misinformation about Science, National Academies of Sciences, Engineering, and Medicine.

Polman, J. L., & Scornavacco, K. (2022). Meanings and practices of inquiry-based teaching and learning in the International Baccalaureate. International Baccalaureate Organization. https://ibo.org/research/curriculum-research/cross-programme/meanings-and-practices-of-inquiry-based-teaching-and-learning-in-the-international-baccalaureate-2022/

Wilkerson, M. H., & Polman, J. L. (Eds.) (2022). *Situating data science: Exploring how relationships to data shape learning*. Routledge.

Boardman, A. G., Garcia, A., Dalton, B., & Polman, J. L. (2021). *Compose our world: Project based learning in secondary English language arts*. Teachers College Press.
This book was a finalist for the Literacy Research Association's Edward B. Fry Book Award.

Wilkerson, M. H., & Polman, J. L. (Co-Editors, 2020). Special issue on "Situating Data Science." *Journal of the Learning Sciences, 29*(1).

Looi, C. K., Polman, J., Cress, U., & Reimann, P. (Eds.) (2016). *Transforming learning, empowering learners: The International Conference of the Learning Sciences (ICLS) 2016*, Singapore: International Society of the Learning Sciences.

Polman, J. L., Kyza, E. A., O'Neill, D. K., Tabak, I., Penuel, W. R., Jurow, A. S., O'Connor, K., Lee, T., and D'Amico, L. (Eds.). (2014). *Learning and becoming in practice: The International Conference of the Learning Sciences (ICLS) 2014, Volumes 1-3*. Boulder, CO: International Society of the Learning Sciences.

Polman, J. L. (2000). *Designing project-based science: Connecting learners through guided inquiry*. Teachers College Press.

Refereed Journal Articles

Parekh, P., Polman, J. L., & Shapiro, R. B. (2026). Sustainability education through augmented ecological relating with more-than-human companions. *Sustainability*, *18*(5), 2399. https://doi.org/10.3390/su18052399

Boardman, A. G., Polman, J. L., Scornavacco, K., Potvin, A. S., Garcia, A., Dalton, B., Stamatis, K., Guggenheim, A., & Alzen, J. L. (2024). Examining enactments of project-based learning in secondary English language arts. *AERA Open, 10*(1), 1-17. https://doi.org/10.1177/23328584241269829

**Parekh, P., Polman, J. L., Kane, S., & Shapiro, R. B. (2023). Reconfiguring science education through caring human inquiry and design with pets. *Journal of the Learning Sciences. 32* (4-5), 487-533. https://doi.org/10.1080/10508406.2023.2228990
This article was selected as the *Journal of the Learning Sciences* Outstanding Paper of 2023

**Weidler-Lewis, J., *Graville, C. S., & Polman, J. L. (2022). The identity affordances of tools: An examination of visual design tool use in STEM. *Mind, Culture, and Activity, 29* (1), 43-59. https://doi.org/10.1080/10749039.2021.1966471.

*Hinojosa, L., *Riedy, R., Polman, J., Swanson, R. Nuessle, T., Garneau, N. (2021). Expanding public participation in science practices beyond data collection. *Citizen Science: Theory & Practice*, *6*(1), pp. 1-15. http://doi.org/10.5334/cstp.292

*Verhoeven, M., Polman, J. L., Zijlstra, B., & Volman, M. (2021). Creating space for agency: A conceptual framework to understand and study adolescents' school engagement from a Funds

of Identity perspective. *Mind, Culture, and Activity, 28*(2), 125-137.
https://doi.org/10.1080/10749039.2021.1908363

Gebre, E. H., & Polman, J. L. (2020). From "context" to "active contextualization": Fostering learner agency in contextualizing learning through science news reporting. *Learning, Culture and Social Interaction, 24*, 1-15. https://doi.org/10.1016/j.lcsi.2019.100374

**Weidler-Lewis, J., †Lamb, G., & Polman, J. (2018). Creative visual representation: Using science infographics to jump-start creativity in the classroom. *The Science Teacher*, *86* (2), 41-47.

Gebre, E. H., & Polman, J. L. (2016). Developing young adults' representational competence through infographic-based science news reporting. *International Journal of Science Education, 38*(18), 2667-2687. https://doi.org/10.1080/09500693.2016.1258129

Polman, J. L., and **Gebre, E. H. (2015). Towards critical appraisal of infographics as scientific inscriptions. *Journal of Research in Science Teaching, 52*(6), 868-893. https://doi.org/10.1002/tea.21225

†Lamb, G. R., Polman, J. L., Newman, A., and **Graville Smith, C. (2014). Science news infographics: Teaching students to gather, interpret, and present information graphically. *The Science Teacher, 81*(3), 25-30.

Polman, J. L., and Hope, J. M. G. (2014). Science news stories as boundary objects affecting engagement with science. *Journal of Research in Science Teaching*, *51* (3), 315-341. https://doi.org/10.1002/tea.21144
This article was selected as one of two *JRST* articles for the 2014 National Science Teachers Association (NSTA) Research Worth Reading List.

Polman, J. L., Newman, A., Saul, E. W. & Farrar, C. (2014). Adapting practices of science journalism to foster science literacy. *Science Education, 98*(5), 766-791. https://doi.org/10.1002/sce.21114

Polman, J. L., Newman, A., *Farrar, C., and Saul, E. W. (2012). Science journalism: Students learn lifelong science literacy skills by reporting the news. *The Science Teacher, 79*(1), 44-47.

Polman, J. L. (2010). The zone of proximal identity development in apprenticeship learning. *Revista de Educación* (special issue on Identity and Education), *353 (September-December)*, 129-155.

Polman, J. L., and †Miller, D. (2010). Changing stories: Trajectories of identification among African American youth in a science outreach apprenticeship. *American Educational Research Journal, 47*(4), 879-918. https://doi.org/10.3102/0002831210367513

Biddix, J. P., Somers, P. A., & Polman, J. L. (2009). Protest reconsidered: Identifying democratic and civic engagement learning outcomes. *Innovative Higher Education, 34* (3), 133-147. https://doi.org/10.1007/s10755-009-9101-8

Kulla-Abbott, T., and Polman, J. (2008). Engaging student voice and fulfilling curriculum goals with digital stories. *THEN Journal: Technology Humanities Education and Narrative, 5* (Spring). Available: http://thenjournal.org/index.php/then/article/view/22

Westhoff, L., and Polman, J. L. (Fall-Winter 2007-08). Developing preservice teachers' pedagogical content knowledge about historical thinking. *International Journal of Social Education, 22* (2), 1-28.

Polman, J. L. (2006). Mastery and appropriation as means to understand the interplay of history learning and identity trajectories. *Journal of the Learning Sciences. 15*(2), 221-259. https://doi.org/10.1207/s15327809jls1502_3

Burns, K., & Polman, J. L. (2006). The impact of ubiquitous computing in the Internet age: How middle school teachers integrated wireless laptops in the initial stages of implementation. *Journal of Technology and Teacher Education, 14* (2), 363-385. https://www.learntechlib.org/p/5777/

Polman, J. L. (2004). Dialogic activity structures for project-based learning environments. *Cognition and Instruction*, *22* (4), 431-466. https://doi.org/10.1207/s1532690Xci2204_3

Polman, J. L. (2004). The perils and promise of afterschool programs on school territory. *Afterschool Matters*, *3*, 3-12.

O'Neill, D. K., & Polman, J. L. (2004). Why educate "little scientists?" Examining the potential of practice-based scientific literacy. *Journal of Research in Science Teaching, 41* (3), 234-266. https://doi.org/10.1002/tea.20001

Simmons, P., *Ruffin, M., Polman, J., Kirkendall, C., & Baumann, T. (2003). If stones could talk. *The Science Teacher*, *70* (5), pp. 52-54.

Polman, J. L. & Pea, R. D. (2001). Transformative communication as a cultural tool for guiding inquiry science. *Science Education*, *85* (3), 223-238. https://doi.org/10.1002/sce.1007

Gordin, D.N., Polman, J.L., & Pea, R.D. (1994). The Climate Visualizer: Sense-making through scientific visualization. *Journal of Science Education and Technology, 3* (4), 203-226. https://doi.org/10.1007/BF01575897

Fraser, C. C., & Polman, J. (1989). Establishing a hypermedia corpus for teaching German language and culture using Macintosh HyperCard. *Die Unterrichtspraxis/Teaching German, 22* (2), 138-145.

Editorial Review Journal Articles

Wilkerson, M. H., & Polman, J. L. (2020). Situating data science: Exploring how relationships to data shape learning. *Journal of the Learning Sciences*, *29* (1), 1-10. https://doi.org/10.1080/10508406.2019.1705664

Chapters in Edited Volumes and Books

Stamatis, K., *Manriquez-Hernandez, J., & Polman, J. L. (2023). Youth curation as collective disruption: Making in museums during the Covid-19 pandemic. In R. M. Reardon & J. Leonard (Eds.), *School-University-Community Research in a (Post)COVID-19 World* (pp. 181-205). Information Age Publishing.

Polman, J. L., *Stamatis, K., & Boardman, A. G. (2021). Authentic making in English Language Arts. In A. G. Boardman, A. Garcia, B. Dalton, & J. L. Polman, *Compose Our World: Project Based Learning in Secondary English Language Arts* (pp. 13-33). Teachers College Press.

Polman, J. L. (2019). Foreword. In J. Wilhelm, R. Wilhelm, & M. Cole, *Creating Project-Based STEM Environments: The REAL Way* (pp. v-viii). Springer. doi: 10.1007/978-3-030-04952-2. ISBN 978-3-030-04951-5.

Herrenkohl, L. R., & Polman, J. L. (2018). Learning within and beyond the disciplines. In Fischer, F., Hmelo-Silver, C. E., Goldman, S. R., & Reimann, P. (Eds.). *International handbook of the learning sciences* (pp. 106-115). Routledge/Taylor & Francis.

*Potvin, A. S., *Kaplan, R. G., Boardman, A. G., & Polman, J. L. (2018). Configurations in co-design: Participant structures in partnership work. In Bevan, B., & Penuel, W. R. (Eds.), *Connecting research and practice for educational improvement: Ethical and equitable approaches* (pp. 135-149). Routledge.

Berland, M., Halverson, E., Polman, J. & Wilkerson, M. (2017). Expressive construction: Enabling learners to represent powerful ideas. In J. Roschelle, W. Martin, J. Ahn, & P. Schank (Eds.), *Cyberlearning Community Report: The State of Cyberlearning and the Future of Learning With Technology* (pp. 17-24). SRI International. Authorship is equal; 4 authors are listed alphabetically.

Polman, J. L., Kohnen, A. M., Whitacre, M. P., Davidson, R. M., & Gebre, E. H. (2017). Evolving curricular designs through teacher adaptation and implementation with students over time. In B. DiSalvo, J. Yip, E. Bonsignore, and C. DiSalvo (Eds.), *Participatory design for learning: Perspectives from practice and research* (pp. 59-70). Routledge.

Kirshner, B., and Polman, J. L. (2013). Adaptation by design: A context-sensitive, dialogic approach to interventions. In Fishman, B., Penuel, W. R., Allen, A., & Cheng, B. H. (Eds.). *Design-based implementation research: Theories, methods, and exemplars. National Society for the Study of Education Yearbook, Volume 112, Issue 2* (pp. 215-236). Teachers College Press.

Polman, J. L. (2012). Introduction. In W. Saul, A. Kohnen, A. Newman, & L. Pearce, *Front-page science: Engaging teens in science literacy* (pp. xi-xiii). NSTA Press.

Polman, J. L. (2012). Trajectories of participation and identification in learning communities involving disciplinary practices. In D. Yun Dai, (Ed.), *Design research on learning and thinking in educational settings: Enhancing intellectual growth and functioning* (pp. 225-242). Routledge.

Polman, J. L., & Pea, R. D. (2007). Transformative communication in project science learning discourse. In R. Horowitz (Ed.) *Talking texts: How speech and writing interact in school learning*. Erlbaum.

Wertsch, J. V., & Polman, J. L. (2002). The impact of mediation on goal structure. In M. Hildebrand-Nilshon & C.-W. Kim (Eds.), *Kultur (in) der Psychologie (Cultural psychology)* (pp. 223-232). Asanger Verlag.

Wertsch, J.V., & Polman, J.L. (2001). The intuitive mind and knowledge about history. In B. Torff & R. J. Sternberg, (Eds.), *Understanding and teaching the intuitive mind* (pp. 57-72). Lawrence Erlbaum Associates.

Curriculum Resources

Compose Our World Project (2019). Compose Our World: English Language Arts 9th grade curriculum. Educurious. Available: https://sprocket.educurious.org/home/curriculum/9th-grade-ela [co-designer of design principles and one of four course projects in this open educational resource].

STEM Literacy through Infographics Project (2018). STEM Literacy through Infographics. Open educational resources available at: http://science-infographics.org/ [principal investigator and project director, author of self-guided teacher professional development resources].

Missouri Historical Society (2001). Through the eyes of a child. St. Louis: Missouri Historical Society. [author of educational CD-ROM including oral histories of African-American communities in St. Louis and curriculum].

World Resources Institute and TERC (1999). *DataScape Instructor Guide*. Washington DC: World Resources Institute. [author of chapters 2 through 5]

Refereed Conference Proceedings

*Mendoza-Maurer, M., Stamatis, K., & Polman, J. L. (2026). Co-creating identities: Dialogic spirals in the zone of proximal identity development. *Proceedings of the 20th International Conference of the Learning Sciences - ICLS 2026*. International Society of the Learning Sciences. [poster]

Polman, J. L., Tran, T., Miller, K., & Dorsey, C. (2026). Interdisciplinary contextualizing in data storytelling. *Proceedings of the 20th International Conference of the Learning Sciences - ICLS 2026*. International Society of the Learning Sciences. [poster]

Stamatis, K., Polman, J. L., & *Mendoza-Maurer, M. (accepted, pending June 2026). Painting identities: Artmaking as identity work with youth. *Proceedings of the 20th International Conference of the Learning Sciences - ICLS 2026*. International Society of the Learning Sciences. [short paper]

Stamatis, K., Polman, J. L., Rahm, J., Akkerman, S., Vermeulen, J., Garcia, A., Dick, A., Christian, James-Harris, T., Vossoughi, S., Madise, L, Lindberg, L., Marin, A., Dave, S., Lopez, B., Collins, T., Reznik, E., Shea, M. V., Jurow, A. S., Mendoza, L., Le, V., Sobel, J., *Mendoza-Maurer, M., Garcia-Vasquez, A., Takeuchi, M. A., Dutta, D., Dadkhahfard, S., Tamashiro, M., McKinney de Royston, M., (accepted, pending June 2026). Reimagining learning through arts & making: Creative identity work in partnership. *Proceedings of the 20th International Conference of the Learning Sciences - ICLS 2026*. International Society of the Learning Sciences. [symposium]

Boateng, A. A., Curnow, J., Chen, A., Folger, R., Jones, S., Lee, S., Melon, N., Kennedy, R., Leibovitz, T., McKoy, A., Polman, J., Salazar, B., Tran, T., Miller, K., and Mitchell, N. (2025). Developing approaches to racial justice in the learning sciences. In A. Rajala, A. Cortez, R. Hofmann, A. Jornet, H. Lotz-Sisitka, & L. Markauskaite, *Proceedings of the 19th International Conference of the Learning Sciences - ICLS 2025* (pp. 2381-2389). International Society of the Learning Sciences. https://doi.org/10.22318/icls2025.436471

Kyza, E. A., Varda, C., Yoon, S. A., Shim, J., Zhang, W., Leung, V., Nguyen, Z., Törmänen, T., Järvenoja, H., Teo, C. L., Chan, C., Ong, A., Tran, T. C., Polman, J. L., Tabak, I., Reznick, N., Radinsky J., and Hammer, D. (2025). Exploring the intersection of emotions and epistemic engagement. In A. Rajala, A. Cortez, R. Hofmann, A. Jornet, H. Lotz-Sisitka, & L. Markauskaite, *Proceedings of the 19th International Conference of the Learning Sciences - ICLS 2025* (pp. 2287-2295). International Society of the Learning Sciences. https://doi.org/10.22318/icls2025.355776

Stamatis, K., Tierney, G., and Polman, J. (2025). Co-designing to foster collective agency. In A. Rajala, A. Cortez, R. Hofmann, A. Jornet, H. Lotz-Sisitka, & L. Markauskaite, *Proceedings of the 19th International Conference of the Learning Sciences - ICLS 2025* (pp. 3088-3090). International Society of the Learning Sciences.

Knight, D., Bielefeldt A., Polman. J., Hannigan, M. (2024). Work in Progress: On the use of low-cost environmental monitors in rural K-12 outreach to enhance engineering identity development. 2024 ASEE Annual Conference & Exposition. https://peer.asee.org/board-434-work-in-progress-on-the-use-of-low-cost-environmental-monitors-in-rural-k-12-outreach-to-enhance-engineering-identity-development

Stamatis, K., Polman, J. L., *Tran, T. C., and *Manriquez Hernandez, J. R. (2024). Looking back to see myself: Analepsis as tool to deepen proleptic notions of identity development. In Lindgren, R., Asino, T. I., Kyza, E. A., Looi, C. K., Keifert, D. T., & Suárez, E. (Eds.), *Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024* (pp. 754-761). International Society of the Learning Sciences. https://doi.org/10.22318/icls2024.292199 [finalist for Best Design Paper at the conference]

Miller, K. M., Polman, J. L., Yoon, S. A., Shim, J., Leung, V. Y., Nguyen, Y., Rubin, A., Rubin, A., Higgins, T., Karch, J. M., Hammerman, J. K., Matuk, C., DesPortes, K., Amato, A., Dikker, S., Ochoa, X., Romero, E., Podworny, S., Fleischer, Y., Biehler, R., Walker, J. T., Barany, A., Acquah, A., Scarola, A., Reza, S., *Tran, T. C., Vacca, R., Silander, M., Woods, P. J., Fernandez, C., Eloy, A., Blikstein, P., de Deus Lopes, R., Radinsky, J., Tabak, I., Lee, V. R., Demszky, D., Levine, S., & Louie, J. (2024). Data and Social Worlds: How Data Science Education Supports Civic Participation and Social Discourse. In Lindgren, R., Asino, T. I., Kyza, E. A., Looi, C. K., Keifert, D. T., & Suárez, E. (Eds.), *Proceedings of the 18th International Conference of the Learning Sciences - ICLS 2024* (pp. 1863-1870). International Society of the Learning Sciences. https://doi.org/10.22318/icls2024.702524

*Glidewell, L., *Mendoza-Maurer, M., Polman, J. L., Knight, D., & Bielefeldt, A. (2024). Work in progress: Place-based engineering with rural schools: Investigating the SCience and ENgineering Inquiry Collaborative (SCENIC) in Colorado. ASEE Rocky Mountain Section Conference 2024. https://doi.org/10.18260/1-2-1146-49411

**Parekh, P., Polman, J. L., Kane, S., & Shapiro, R. B. (June 2023). The role of positioning in the ecological learning of human youth making for pet companions. In Blikstein, P., Van Aalst, J., Kizito, R., & Brennan, K. (Eds.), *17th International Conference of the Learning Sciences Proceedings* (pp. 130-137). Montréal, Quebec, Canada: International Society of the Learning Sciences. https://doi.org/10.22318/icls2023.257083

**Parekh, P. Polman, J. L., Kane, S., & Shapiro, R. B. (June 2023). Middle schoolers' trajectories of identification and wayfaring through a pet science workshop. In Blikstein, P., Van Aalst, J., Kizito, R., & Brennan, K. (Eds.), *17th International Conference of the Learning Sciences Proceedings* (pp. 138-145). Montréal, Quebec, Canada: International Society of the Learning Sciences. https://doi.org/10.22318/icls2023.970847

Rahm, J., Polman, J., Adams, J., Stamatis, K., *Manriquez Hernandez, J. R., Luna, T. B. P., Luna, A. R., Kayumova, S., Harper, A., Bereavalez, E., Achilova, F., Richards, G., Ehret, C., Mannard, E., St. Victor, K. A., Rogers, D. C., Sprowls, E., and Gonsalves, A. (June 2023). Centering Critical Youth Research Methodologies of Praxis and Care in Post-Pandemic Times: From Respectful Relations and Dialogue towards New Imaginaries. In Blikstein, P., Van Aalst, J., Kizito, R., & Brennan, K. (Eds.), *17th International Conference of the Learning Sciences Proceedings* (pp. 1622-1629). Montréal, Quebec, Canada: International Society of the Learning Sciences. https://doi.org/10.22318/icls2023.495209

Stamatis, K., Clarke, S., Polman, J., Gates, Z., Lee, U-S., Van, M., Nagashima, T., Yadav, G., Aleven, V., Oswald, E., Esborg, L., Pierroux, P., Riedy, R., Farrell, C., Penuel, W., Fox-Resnick, A., Sushil, S, *Sommer, S., *Tran, T., *Palomar, M., *McKoy, M. *Padilla-Chavez, A., *Widman, S., Yu, J., Chan, J. Y-C., Closser, A., Ngo, V., Smith, H. Liu, A. S., and Ottmar, E. R. (June 2023). Designing to Disrupt While Encountering Disruption: Engaging with the Unexpected in Educational Research and Practice. In Blikstein, P., Van Aalst, J., Kizito, R., & Brennan, K. (Eds.), *17th International Conference of the Learning Sciences Proceedings* (pp. 1676-1685). Montréal, Quebec, Canada: International Society of the Learning Sciences. https://doi.org/10.22318/icls2023.101049

**Parekh, P., Polman, J. L., Kane, S. K., & Shapiro, R. B. (2022). Learning science while caring for pets: Findings from a virtual workshop for teens. In Chinn, C., Tan, E., Chan, C., & Kali, Y. (Eds.). *Proceedings of the 16th International Conference of the Learning Sciences (ICLS) 2022* (pp. 321-328). Hiroshima, Japan: International Society of the Learning Sciences. https://repository.isls.org//handle/1/9045

**Parekh, P., Kane, S. K., Polman, J. L., & Shapiro, R. B. (2022). Teens and pets as participatory design partners. In Weinberger, A. Chen, W., Hernández-Leo, D., & Chen, B. (Eds.). *Proceedings of the 15th International Conference on Computer-Supported Collaborative Learning - CSCL 2022* (pp. 386-389). Hiroshima, Japan: International Society of the Learning Sciences. https://repository.isls.org//handle/1/8310

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**Weidler-Lewis, J., *Hinojosa, L., *Sommer, S., & Polman, J. L. (2016). Organizing to cultivate personal relevance, science literacy, and equity through data journalism. In C. K. Looi, Polman, J., Cress, U., & Reimann, P., *Transforming learning, empowering learners: The International Conference of the Learning Sciences (ICLS) 2016, Volume 2* (pp. 1177-1178). Singapore: International Society of the Learning Sciences.

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Polman, J. L. (2006). True stories, storied truth: Stitching narrative and logico-scientific discourse together in an age of "spin". In S. A. Barab, K. E. Hay, & D. T. Hickey, *Proceedings of the 7th International Conference of the Learning Sciences 2006: Making a Difference*, pp. 557-563. Mahwah, NJ: Erlbaum.

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Refereed Conference Papers and Presentations

Stamatis, K. M., *Mendoza-Maurer, M., Polman, J. L., & Hogan, T. (2026, April) Artmaking as assertion: Youth artmaking as cultural learning pathways toward new identities. In Polman, J. L., *Engaging in Arts and Making as Acts of Transformative Identity Building*, Presentation in roundtable to be conducted at the 2026 Annual Meeting of the American Educational Research Association, Los Angeles, CA.

*Aronov, A., Knight, D., Bielefeldt, A., Polman, J., & *Palomar, F. (2025, May). Using student posters to investigate the impact of inquiry-based STEM learning on rural K-12 students. Paper presented at the ASEE Rocky Mountain Section Conference 2025, Boulder, CO.

*Glidewell, L., *Mendoza-Maurer, M., Polman, J. L., Bielefeldt, A., & Knight, D. (2025, April). How the infrastructure of a rural environmental engineering K-12 outreach program affects

university student identity. Paper presented at the 2025 Annual Meeting of the American Educational Research Association, Denver, CO.

Tran, T. C., Polman, J. L., & Miller, K. (February 2025). Towards inquiry into data identity in interdisciplinary project-based learning. Paper presented at the 2025 Data Science Education K-12 (DSE K-12) Conference, San Antonio, TX.

Miller, K. M., Polman, J. L., *Tran, T. C. (June 2024). Telling data stories in middle school social studies classrooms. In Miller, K. M. et al., *Data and Social Worlds: How Data Science Education Supports Civic Participation and Social Discourse*. Presentation in symposium at International Conference of the Learning Sciences 2024, Buffalo, NY.

Miller, K. M., Polman, J. L., *Tran, T. C., & Dorsey, C. (April 2024). Teachers surfacing identity and agency through data within a PBL module. In Polman, J. L., *Constructing Educational Possibilities with Teachers at the Center of PBL Design and Enactment*. Symposium conducted at the 2024 Annual Meeting of the American Educational Research Association, Philadelphia, PA.

Polman, J. L., *Tran, T. C., Miller, K. M., & Dorsey, C. (April 2024). The role of data stories in interdisciplinary project-based learning. Paper presented at the Annual Meeting of the American Educational Research Association, Philadelphia, PA.

Stamatis, K. M., & Polman, J. L. (April 2024). "I choose to take my stories from my parents": Theorizing analepsis as cultural learning and identity development. Paper presented at the Annual Meeting of the American Educational Research Association, Philadelphia, PA.

Polman, J. L., Dorsey, C., *Tran, T., Miller, K., Roderick, S., Grein, L., Templeton, J. (2023, November). Multifaceted contextualization in interdisciplinary data stories. Roundtable presented at CIRCLS'23 Convening. Alexandria, VA.

**Parekh, P., Polman, J. L., Kane, S., & Shapiro, R. B. (2023, April). Relationships with pets as a context for science learning. Paper presented at the 2023 NARST Conference, Chicago, IL.

Gebre, E. H., Bailie, A. L., & Polman, J. L. (2023, April). Beyond the indexical role of contexts in research and learning design. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, IL.

Shen, L., Polman, J. L., Tierney, G., Olabunaga, G., Urban, R., Walsh, B., Dalton, B., Forsyth, S., Yeh, T., Boardman, G., Stamatis, K., Miller, E. A., Li, T., Kelly, S. C., & Hooper, P. (2023, April). PBL of the future: From equity-adjacent to equity-infused. Symposium conducted at the 2023 Annual Meeting of the American Educational Research Association, Chicago, IL.

Stamatis, K., Polman, J. L., & *Tran, T. (2023, April). Viviendo Aquí: Youth as cultural curators restorying museums toward historical activism. In Svihla, V., *Whose agency? What learning? Whence power?* Symposium conducted at the 2023 Annual Meeting of the American Educational Research Association, Chicago, IL.

*Pliszka, H., *Okorn, K., Hannigan, M., Polman, J., *Tran, T., Knight, D., & Coffey, E. (2022, May). Air Quality InQuiry: Adapting air quality sensors for use in high school settings in the United States and Mongolia. Presented at Air Sensors International Conference 2022, Davis, CA.

Boardman, A. G., & Polman, J. L. (2022, April). Supporting students with disabilities in student-led projects in inclusive classrooms. In Kidd, D. C., *Elevating student agency to promote equity and authenticity in student-led projects*. Symposium at the 2022 Annual Meeting of the American Educational Research Association, San Diego, CA.

Polman, J. L., Kane, S., & Shapiro, R. B. (2022, April). Making pet toys and environments at home in a virtual summer camp. In Morales-Navarro, L., & Kafai, Y. *Moving Making To Online and Homes Spaces: Lessons for Maker Education*. Symposium at the 2022 Annual Meeting of the American Educational Research Association, San Diego, CA.

Polman, J. L., *Tran, T. C., & Knight, D. W. (2022, April). Place-based air quality inquiry in U.S. rural contexts. In Miller, K. M.. *Data Literacy in Context: Culturally Oriented and Place-Based Learning Through Data*. Symposium at the 2022 Annual Meeting of the American Educational Research Association, San Diego, CA.

Polman, J. L., Boardman, A. G., & *Stamatis, K. (2021, April). The role of authenticity in the enactment, outcomes, and perceptions of project-based learning in English language arts. In Dean, C. P., *Perspectives on the role of authenticity in project-based and active learning humanities classrooms*. Symposium at the 2021 Annual Meeting of the American Educational Research Association.

Boardman, A. G., Garcia, A., Trepper, K. R. & Polman, J. L. (2020, Apr 17 - 21) Project-Based Learning in English Language Arts: Shifting Pedagogy, Shifting Practice [Roundtable Session]. AERA Annual Meeting San Francisco, CA. http://tinyurl.com/so55j23 (Conference Canceled)

*Hinojosa, L., Polman, J., & *Riedy, R. (2019, March). Who gets to contribute and how: Expanding community scientist participation beyond data collection. Paper presented at the CitSci2019 Meeting, Raleigh, NC.

*Riedy, R., Polman, J. L., & *Hinojosa, L. (2019, March). Bidding for expanded participation in scientific research across moments, weeks, or months. Paper presented at the CitSci2019 Meeting, Raleigh, NC.

*Hinojosa, L., *Swanson, R., & Polman, J. L. (2018, April). Citizen science identity: Becoming citizen scientists in a museum-based genetics of taste program. Paper presented at the Annual Meeting of the American Educational Research Association, New York.

Polman, J. L., *Stamatis, K. M., & Boardman, A. G. (2018, April). Unpacking the role of authenticity in project-based learning in English language arts. Paper presented at the Annual Meeting of the American Educational Research Association, New York.

Scornavacco, K., Kelly, M. R., Polman, J. L., & Boardman, A. G. (2018, April). Co-Design as an entryway to teacher leadership. Paper presented at the Annual Meeting of the American Educational Research Association, New York.

*Hinojosa, L., *Swanson, R., & Polman, J. L. (2018, March). The identity development of citizen scientists in a museum-based genetics of taste program. Paper presented at the NARST Annual Meeting, Atlanta, GA.

Polman, J. L., **Weidler-Lewis, J., *Sommer, S., Shade, C., Rubin, A., & Gebre, E. (2017, June). Representations all the way down: How infographic symbol systems traverse the levels of a distributed activity system for learning. Poster presented at the Jean Piaget Society. San Francisco, CA.

**Weidler-Lewis, J., & Polman, J. L. (2017, June). Learning with and through Infographics. Paper presented at the Jean Piaget Society. San Francisco, CA.

**Weidler-Lewis, J., & Polman, J. L. (2017, April). Enhancing Scientific Argumentation through Infographic Authoring. Paper presented at the NARST Annual Meeting, San Antonio, TX.

Boardman, A. G., Polman, J. L., Dalton, B., & Scornavacco, K. (2017, April). From units to projects: Designing and implementing project-based learning in high school language arts. Paper presented at the Annual Meeting of the American Educational Research Association, San Antonio, TX.

Polman, J. L., *Hinojosa, L., *Swanson, R. D., McNamara, P., & Garneau, N. (2017, April). Public participation in science research on the genetics of taste at a museum. In Sagy, O., *The Ecology of Citizen Science: An Opportunity for Learning.* Symposium conducted at the 2017 Annual Meeting of the American Educational Research Association, San Antonio, TX.

Davidson, R., Graville, C., †Lamb, G. R., & Polman, J. (2016, July). Innovating with infographics. Workshop presented at the 2016 STEM Forum & Expo (sponsored by National Science Teachers Association). Denver, CO.

Gebre, E. H., & Polman, J. L. (2016, April). Socializing science: The nature and role of context for developing young adults' science literacy. Paper presented at the 2016 Annual Meeting of the American Educational Research Association, Washington, DC.

*Hinojosa, L., Polman, J. L., and *Sommer, S. (2016, April). The design and structure of activities for infographics authoring in a secondary science curriculum. Paper presented at the 2016 Annual Meeting of the American Educational Research Association, Washington, DC.

Polman, J. L., Gebre, E., Rubin, A., *Hinojosa, L., *Sommer, S., and Graville, C. (2016, April). Organizing data journalism activity in school and community learning environments to contextualize science in life. In Yip, J., *Connecting Learners to Place, Space, and Personal Experience with Technology and New Media*. Symposium conducted at the 2016 Annual Meeting of the American Educational Research Association, Washington, DC.

Polman, J. L. (2015, June). Contextualizing science in life through youth news infographics authoring. In T. Phillip, *Designing Learning Environments to Facilitate Equitable Change and Social Action*. Symposium conducted at the 2015 Digital Media and Learning Conference, Los Angeles, CA.

Gebre, E., & Polman, J. L. (2015, April). Characterizing student-generated inscriptional forms in the context of science news infographics authoring. Paper presented at the 2015 Annual Meeting of the American Educational Research Association, Chicago, IL.

Polman, J. L., Whitacre, M., Kohnen, A., Davidson, R., & Gebre, E. (2015, April). Adapting a nascent science and data journalism model to diverse educational contexts over time. In I. Tabak & Kyza, E., *Prospects and Challenges in Teacher Curricular Adaptation Across Disciplines*. Symposium conducted at the 2015 Annual Meeting of the American Educational Research Association, Chicago, IL.

Polman, J. L., Graville, C., & **Gebre, E. (2015, April). Cultivating youth seeing science in their lives and making sense of life using STEM. In J. Kane, *Distributing, Learning, and Making STEM Arguments in Public Media*. Symposium conducted at the NARST Annual Meeting, Chicago, IL.

Polman, J. L., †Lamb, R., **Gebre, E., & Newman, A. (2015, March). Organizing effective feedback processes for students learning with infographics. Workshop presented at the 2015 Annual Meeting of the National Science Teachers Association, Chicago, IL.

†Lamb, R., & Polman, J. L., (2015, March). Beyond traditional graphing: Student-created infographics to visualize STEM data and ideas. Workshop presented at the 2015 Annual Meeting of the National Science Teachers Association, Chicago, IL.

Polman, J. L., and Graville Smith, C. (2014, June). Becoming data journalists: Developing authoritative self-expression through infographics creation for publishing. In N. Enyedy, *Learning and becoming through art-making: Relationships among tools, phenomena, people, and communities in shaping youth identity development*. Symposium conducted at the 11th International Conference of the Learning Sciences, Boulder, CO.

Polman, J. L., Graville Smith, C., and **Gebre, E. (2014, April). Contextualizing science in life through the design and circulation of news infographics. In E. Gebre, *Distributing, Learning, and Making STEM Arguments in Public Media.* Symposium conducted at the Annual Meeting of the American Educational Research Association, Philadelphia, PA.

**Gebre, E., and Polman, J. L. (2014, April). Collaborative infographics for developing young adults' meta-representational competence. Paper presented at the Annual Meeting of the American Educational Research Association, Philadelphia, PA.

Polman, J. L., **Gebre, E., and Graville Smith, C. (2014, March). Contextualizing science in life through science news infographic design and publication. Paper presented at the NARST Annual Meeting, Pittsburgh, PA.

**Gebre, E., and Polman, J. L., (2014, March). Aspects of quality science infographics: Experts' perspective. Paper presented at the NARST Annual Meeting, Pittsburgh, PA.

Polman, J. L., Farrar, C. and Hope, J. M. G. (2013, April). Science journalism as preparation for everyday scientific literacy. In L. Bricker, *Reading, writing, and communicating science: Exploring the intersections of science and literacy education*. Symposium conducted at the NARST Annual Meeting, Rio Grande, Puerto Rico.

Polman, J. L., Hope, J. M. G., and Graville-Smith, C. (2013, April). Science journalism experiences from a youth perspective: Who or what transforms? In T. Sato, *Learners in action: Youth narratives on accessing and transforming science*. Symposium conducted at the NARST Annual Meeting, Rio Grande, Puerto Rico.

Newman, A., Polman, J. L., Kohnen, A., & Farrar, C. (2012, April). Navigating the science information landscape: Fostering understanding of and engagement with sources through citizen science journalism. In C. Chinn, *Learning from others: Advancing theory and research on learning from sources*. Symposium conducted at the Annual Meeting of the American Educational Research Association, Vancouver, BC.

Polman, J. L., and *Hope, J. (2012, April). Personally relevant science news stories as boundary objects within and beyond a hybrid, distributed activity system. In D. Fields, *Science artifacts as boundary objects: Designs that cross social settings*. Symposium conducted at the Annual Meeting of the American Educational Research Association, Vancouver, BC.

Polman, J. L. (2012, April). Youth citizen science journalism as a means to develop competent outsiders. In N. Feinstein, *Science education for the competent outsider: What we already know and do*. Symposium conducted at the Annual Meeting of the American Educational Research Association, Vancouver, BC.

Polman, J. L., and *Hope, J. (2012, March). Citizen science journalism: A pathway to developing a scientifically literate and engaged public? In M. Varelas, Identity and science education research: Topics, issues, and trends. Symposium conducted at the NARST Annual Meeting, Indianapolis, IN.

Polman, J. L. (2011, September). Establishing a distributed activity system for scientific literacy based on youth science journalism. In J. Vadeboncoeur, *Expansive learning and development as a valuable lens to examine informal educational systems in transition in a global world: Case studies of youth, museum and school programs*. Symposium conducted at the Third Congress of the International Society for Cultural and Activity Research (ISCAR), Rome.

Polman, J. L. (2011, September). The zone of proximal identity development in apprenticeship learning. In L. Falsafi, *Identity in education: The potentials and challenges of theoretical and analytical diversity*. Symposium conducted at the Third Congress of the International Society for Cultural and Activity Research (ISCAR), Rome.

Polman, J. L. (2011, April). Building an environment to engage young people in becoming science citizen-journalists. In A. Luehmann, *Redefining science, redefining selves: Youth's identity development in agentic environments*. Structured poster session conducted at the Annual Meeting of the American Educational Research Association, New Orleans, LA.

Polman, J. L. (2011, April). Informal learning environments that build connections to local communities while engaging citizens. In J. Rahm & M. Phipps, *Informal learning across sites and disciplines: What do we know, where do we need to go*. Symposium conducted at the Annual Meeting of the American Educational Research Association, New Orleans, LA.

Polman, J. L., Saul, E. W., Newman, A., *Farrar, C., Singer, N., Turley, E., Pearce, L., *Hope, J., and *McCarty, G. (2010, June). A cognitive apprenticeship for science literacy based on journalism. Symposium conducted at the International Conference of the Learning Sciences, Chicago, IL.

Polman, J. L. (2010, June). Narrative metacognition and story diagrams as scaffolds for the critique and construction of history narratives. In D. K. O'Neill, *Understanding a future with multiple pasts: Projects on metahistorical understanding*. Symposium conducted at the International Conference of the Learning Sciences, Chicago, IL.

Polman, J. L., Hope, J., and McCarty, G. (2010, April). Reframing and measuring engagement with science and technology. Paper discussed at the Annual Meeting of the American Educational Research Association, Denver, CO.

*McCarty, G., *Hope, J., and Polman, J. L. (2010, March). The youth engagement with science and technology survey: Informing practice and measuring outcomes. Paper presented at the Annual Meeting of the National Association for Research on Science Teaching, Philadelphia, PA.

Farrar, C. L., and Polman, J. L. (2010, March). Assessing students' scientific literacy. Presented at the Annual Meeting of the National Science Teacher's Association, Philadelphia, PA.

Polman, J. L. (2009, April). Identity and historical thinking about racially-charged history in the United States. Paper presented at the annual meeting of the American Educational Research Association (AERA), San Diego.

Polman, J. L. (2008, September). Scaffolding trajectories of participation and identification in a science apprenticeship. Paper presented at the Second Congress of the International Society for Cultural and Activity Research (ISCAR), San Diego, CA.

Polman, J. L. and Miller, D. (2008, September). Trajectories of participation and identification in a sociocognitive apprenticeship. Paper presented at the Second Congress of the International Society for Cultural and Activity Research (ISCAR), San Diego, CA.

Polman, J. L. (2008, March). Scaffolding the critique and construction of empirical narratives. Paper presented at the annual meeting of the American Educational Research Association (AERA), New York.

Polman, J. L., and Miller, D. (2008, March). Change in action: Learning and identity development in a youth apprenticeship. Paper discussion at the annual meeting of the American Educational Research Association (AERA), New York.

Kulla-Abbott, T. M., and Polman, J. L. (2007). Engaging student voice and fulfilling curriculum goals with digital stories. Paper presented at the Annual Meeting of the Mid-Western Educational Research Association (MWERA), St. Louis, MO, October 24-27, 2007.

Polman, J. L., & Pea, R. D. (2007). Transformative communication in project science learning discourse. In R. Horowitz (Chair), *Talking texts: How speech and writing interact in school learning*. Symposium conducted at the annual meeting of the American Educational Research Association (AERA), Chicago, IL.

Polman, J. L. (2005). True stories, storied truth: Stitching narrative and logico-scientific discourse together in an age of "spin". Paper presented at the First International Society for Cultural and Activity Research (ISCAR) Congress, Seville, Spain, September.

Polman, J. L. (2005). Disability studies, inclusive education, and learning sciences. In D. L. Ferguson & S. Danforth (Co-chairs), *Broadening the vision: How disability studies, character education, and the learning sciences can collaborate toward the development of inclusive communities of practice in P-12 school settings*. Symposium conducted at the annual meeting of the American Educational Research Association, Montreal, April, 2005.

Polman, J. L., Westhoff, L., O'Neill, D. K., Sohbat, E., Asgari, Mahboubeh, Shin, N., McGee, S., Radinsky, J., & Bell, P. (2004). Developing historical thinking practices through technology-supported inquiry (a symposium). In Y. B. Kafai, W. A. Sandoval, N. Enyedy, A. S. Nixon, & F. Herrera (Eds.), *Proceedings of the Sixth International Conference of the Learning Sciences 2004: Embracing diversity in the learning sciences* (pp. 19-22). Mahwah, NJ: Erlbaum.

Polman, J. L., & Westhoff, L. (2004). Digital history in an after-school learning environment: Developing preservice teachers pedagogical content knowledge and the historical thinking of youth. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA, April, 2004.

Coulter, B., and Polman, J. L. (2004). Enacting technology-supported inquiry learning through Mapping the Environment. In B. Foley (Chair), *Enacting change in earth science education*. Symposium conducted at the annual meeting of the American Educational Research Association, San Diego, CA, April, 2004.

Polman, J. L. (2002). Re-creating the past: Building historical simulations with hypermedia to learn history. In J. L. Polman (Chair), *Text, context, and perspective in learning history*. Symposium conducted at the annual meeting of the American Educational Research Association, New Orleans, LA, April, 2002.

Polman, J. L. (2002). Inquiry into local heritage as a means to foster multiple aspects of development. In J. L. Polman (Chair), *Connecting the transformation of communities and individuals through after school technology programs*. Symposium conducted at the annual meeting of the American Educational Research Association, New Orleans, LA, April, 2002.

Polman, J. L. (2002). Design issues for project-based science learning environments in schools. In S. Lewis (Chair), *Issues in Project-Based Science: Designing environments and enacting reform*. Symposium conducted at the annual meeting of the National Association for Research in Science Teaching, New Orleans, LA, April, 2002.

Stevens, R., & Polman, J. L. (2002). VideoTraces: Supporting interpretation, representation and distributed interaction through a digital video based annotation system. In R. Stevens (Chair), *Mediating visitor experience of objects in museums: Exploring the roles of people and things through video-based analysis and intervention*. Symposium conducted at the 5th International Society for Cultural Research and Activity Theory (ISCRAT) congress, June 18 – 22, 2002, Amsterdam.

Polman, J. L. (2001). Historical learning and identity development on the borders of school. In S. Mosborg (Chair), *History, identity, and construction of the self*. Symposium conducted at the annual meeting of the American Educational Research Association, Seattle, WA, April 2001.

Polman, J. L., & Wertsch, J. V. (2001). The intuitive mind and knowledge about history. In B. Torff (Chair), *Understanding and teaching the intuitive mind.* Symposium conducted at the annual meeting of the American Educational Research Association, Seattle, WA, April 2001.

Polman, J. L. (2000, July). Mediated action and inaction in a complex community of learners. Paper presented at the III Conference for Sociocultural Research, Campinas, São Paulo, Brazil.

Polman, J. L. (2000, June). Identity development through participation in an informal setting. In B. J. Fishman & S. F. O'Connor-Divelbiss (Eds.), *Proceedings of the International Conference of the Learning Sciences, 2000* (pp. 340-341). Mahwah, NJ: Lawrence Erlbaum Associates.

Polman, J. L. (2000, April). The culture of school and the problems of open-ended science projects. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.

Shrader, G., Lento, E., D'Amico, L., Polman, J. L., Kwon, S., & Gomez, L. (1999, April). Measuring student inquiry and technology efficacy in technology-facilitated project-based science classrooms. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Quebec, Canada.

Polman, J. L., (1998, April). Adapting activity structures across settings: From science to history projects. In S. McGee (Chair), *Changing the game: Activity structures for reforming education.* Symposium conducted at the annual meeting of the American Educational Research Association, San Diego, CA.

Polman, J. L., (1998, April). Why train "little scientists": The purposes and practices of science education in today's democracy. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA (ERIC Document Reproduction Service No. ED 424 094).

Polman, J. L., & Pea, R. D. (1997, March). Transformative communication in project science learning discourse. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.

Polman, J. L., & Pea, R. D. (1997, March). Scaffolding science inquiry through transformative communication. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, Oak Brook, IL.

Polman, J. (1997, March). Evaluating project science learning through inquiry planning. In *The CoVis Project: A national testbed for science learning reform*. Symposium conducted at the annual meeting of the National Association for Research in Science Teaching, Oak Brook, IL.

Polman, J. L. (1996, July). Guiding expeditions: The iterative, situated design of a learning environment for project-based science. In D. C. Edelson & E. A. Domeshek (Eds.) *Proceedings of the International Conference on the Learning Sciences, 1996* (pp. 585-586). Doctoral Consortium conducted at ICLS 96. Charlottesville, VA: AACE.

Polman, J. L., & Fishman, B. (1995, April). Electronic communication tools in the classroom: Student and environmental characteristics as predictors of adoption. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.

Edelson, D.C., Gordin, D.N., Polman, J., & Fishman, B. (1994, April). Scaffolding student inquiry with collaborative visualization tools. In *Next-generation computing and communications environments for learning and teaching*. Symposium conducted at the meeting of the American Educational Research Association, New Orleans, LA.

Gomez, L., Fishman, B., & Polman, J. (1994, April). Media spaces and their application in K-12 and college learning communities. Panel organized and conducted at the meeting of the Computer Human Interaction special interest group of the Association for Computing Machinery, Boston, MA.

Book Reviews

Polman, J. L. (2007, April 18). A role for reason in a realm often dominated by heat and light. [Review of the book *Science education and student diversity: Synthesis and research agenda*, by O. Lee and A. Luykx (Eds.)]. *PsycCritiques-Contemporary Psychology: APA Review of Books, 52* (No. 16), Article 9. Retrieved April 18, 2007, from the PsycCRITIQUES database.

Polman, J. L. (2006, January 25). A starting point for inquiry into inquiry. [Review of the book *Integrating inquiry across the curriculum*, by R. H. Audet and L. K. Jordan (Eds.)]. *PsycCritiques-Contemporary Psychology: APA Review of Books, 51* (No. 4), Article 8. Retrieved February 24, 2006, from the PsycCRITIQUES database.

Polman, J. (1999). [Review of the book *CSCL: Theory and Practice of an Emerging Paradigm*, by T. Koschmann (Ed.)]. *Mind, Culture, and Activity, 6*(2), 163-165.

Polman, J., & Wertsch, J. V. (1998). [Review of the book *Cultural Psychology: A Once and Future Discipline* by Michael Cole]. *American Journal of Education, 106*(3), pp. 451-456.

Invited Presentations and Posters

Polman, J. L. (2025, April). Inspiring and supporting the next generation of "data people" through data storytelling. STEM Education Seminar, Northern Arizona University. https://youtu.be/VEaw8aGQsrY (slides).

Polman, J. L. (2022, June). Research on partnerships, ecosystems and community engagement in informal science. Invited presentation. 37th Meeting of the Board on Science Education, National Academies of Sciences, Engineering, and Medicine.

Polman, J. L. (2021, October). Cyborg meets companion species: Towards learning to be in naturecultures with technology. Invited presentation. Information Science Colloquium, University of Colorado Boulder College of Media, Communication, and Information.

Boardman, A., & Polman, J. L. (2020, April). Compose Our World - Project Based Learning in English Language Arts Classrooms: Year 4 Study Findings. Invited presentation. Lucas Education Research 2020 Virtual Colloquium.

Baram-Tsabari, A., Polman, J. L., Dillon, J., Ballard, H., Tal, T., Wals, A., & Tippins, D. (2020, March). Citizen science—an international and integrative look at a scientific and educational method. Invited presidential session. NARST: A Global Organization for Improving Science Education through Research, 93rd International Conference. Portland, OR. https://narst.org/conferences/2020-annual-conference (Conference canceled).

Polman, J. L. (2020, March). Change in action: Making project-based learning authentic. Invited presentation, University of Colorado Boulder School of Education.

Polman, J. L., Golan Duncan, R., McGrew, S., Rubin, A., & Vatrapu, R. (2019, June). The role of CSCL in an era of "truthiness" and "fake news." Presidential Session, 13th International Conference on Computer Supported Collaborative Learning, Lyon, France.

Polman, J. L. (2019, May). Educating STEM literate learners in a time of ideological polarization. Invited presentation at Universiteit van Amsterdam.

Polman, J. L. (2019, May). Authentic to whom and what? Designing learning in schools and cultural institutions. Invited presentation at University of Oslo.

Polman, J. L. (2019, May). Unpacking the role of authenticity in project-based learning environments. Invited presentation at Ruhr Universität Bochum.

Polman, J. L. (2019, May). Unpacking the role of authenticity in project-based learning environments. Invited presentation at Universiteit van Amsterdam.

Polman, J. L. (2018, February). Learning theory. Citizen science workshop, Learning in a Networked Society (LINKS) Conference, Zichron Yaakov, Israel.

Polman, J. L. (2017, December). Educating STEM literate learners in a time of ideological polarization. University of Colorado Boulder Human-Centered Computing seminar.

Polman, J. L. (2017, October). Making as connecting personal and communal. In A. Sipitakiat, *Community Development & Making Panel*. Invited panel at FabLearn 2017. Stanford, CA.

Polman, J. L. (2017, October). STEM literacy through infographics. Inquiry Academy. Denver Museum of Nature and Science. Denver, CO.

Polman, J. L. (2017, August). Learning and becoming through the practices of citizen science. Open Meeting on Designing Citizen Science to Support Science Learning, Aug 9, 2017. National Academies of Sciences Engineering and Medicine. Washington, DC.

Polman, J. L. (2017, February). Co-designing project-based learning in 9th grade English language arts. Presentation at BSCS, Colorado Springs, CO.

Polman, J. L. (2016, September). STEM Literacy through Infographics. Presentation at UCAR Center for Science Education, Boulder, CO.

Polman, J. L. (2016, June). Facilitating STEM Literacy through Infographics (SLI) in diverse contexts. In J. L. Polman & T. Clegg, *Engaging Youth in STEM*. Roundtable discussion at Cyberlearning 2016: Designing for Deeper, Broader, and More Equitable Learning. Arlington, VA.

Polman, J., Hinojosa, L., Sommer, S. Designing a learning environment to foster visual metacognition. (2016, February). Presented at the University of Colorado Center for Innovation & Creativity at the invitation of the Institute of Cognitive Science.

Polman, J. L. (2015, November). University Career Pathways webinar, CADRE (Community for Advancing Discovery Research in Education) Fellows. Education Development Center.

Polman, J. L., Rubin, A., Gebre, E., & Graville, C. (2015, January). STEM literacy through infographics. Poster presented at Cyberlearning 2015: Connect, Collaborate, and Create the Future. Arlington, VA.

Polman, J. L. (2014, June). Citizen science journalism. Keynote presented at Cyberlearning Summit 2014. Madison, WI.

Polman, J. L. (2014, January). Developing science literacy by involving youth in journalism. Presented to the Colorado Science Educator's Network, National Center for Atmospheric Research, Boulder, Colorado.

Polman, J. L. (2013, February). Developing youth's critical science literacy through involvement in citizen science journalism. Presented to Discipline-Based Education Research (DBER) Group, University of Colorado Boulder.

Saul, E. W., Polman, J. L., and Newman, A. (2011, June). A transactional view of science literacy: Considering sources in use. DFG-NSF Conference: Public Understanding and Public Engagement with Science. New York, NY.

Polman, J. L. (2011, May). Mendeley. In Holmes, K., "Lost in citations: Four approaches to keeping your citations and notes organized this summer." Invited presentation at Center for Teaching and Learning, University of Missouri–St. Louis, St. Louis, MO.

Polman, J. L., and Kohnen, A. (2011, January). Science literacy through science journalism. Invited presentation at Hazelwood School District, Hazelwood, MO.

Polman, J. L., and *Hope, J. (2010, December). Science literacy through science journalism. Poster presented at the Discovery Research K-12 PI Meeting, Washington, DC.

Polman, J. L. (2010, July). Increasing scientific literacy through apprenticeship into science journalism. Invited presentation at Simon Fraser University, Burnaby, British Columbia, Canada.

Newman, A., Farrar, C., Polman, J. L., and Saul, E. W. (2010, March). Science literacy through science journalism: How student research becomes news. Invited presentation at Missouri Junior Science, Engineering, and Humanities Symposium, St. Louis, MO.

Polman, J. L. (2009, November). Science literacy through science journalism. Poster presented at the Discovery Research K-12 PI Meeting, Washington, DC.

Polman, J. L., Newman, A., and Farrar, C. (2009, September). Science literacy through science journalism. Invited presentation at Sherwood Foundation, Omaha, Nebraska.

Polman, J. L. (2009, April). Equity in informal learning institutions. In L. Melber, "Informal Learning Environments Research SIG Business Meeting". Symposium conducted at the annual meeting of the American Educational Research Association, San Diego, CA.

Polman, J. L. (2008, November). Science literacy through science journalism. Poster presented at the Discovery Research K-12 PI Meeting, Washington, DC.

Miller, D., and Polman, J. L. (2007, August). YES as an environment for building youth identity. Panel presentation in session "Communicating with Your Teen: How to Engage and Learn from Teens in Museum Programs", Bay Area Institute: Expanding and Diversifying STEM Participation, San Francisco, CA.

Polman, J. L. (2007, July). The mediated critique and construction of empirical narratives. Invited presentation at the Center for History and New Media, George Mason University, Fairfax, VA.

Polman, J. L. (2005, November). Hesse in Amerika: Geschichte einer Legende (Hesse in America: Story of a Legend). Invited presentation at "Grenzüberschreitungen" (Border Crossings) Hermann Hesse Ausstellung (Exhibit), Gymnasium Carolinum, Neustrelitz, Germany.

Polman, J. L. (2005, September). Developing information technology fluency within the context of science inquiry. Invited presentation at the Connecting Science and Literacy in the K-8 Classroom Conference, St. Louis, MO.

Polman, J. L. (2005, June). Designing project-based science: Issues in facilitating student-centered inquiry. Invited presentation at the No Question Left Behind: Bringing Guided-Inquiry Curricula into Science and Mathematics Classrooms Workshop, Northport, Maine.

Polman, J. L. (2005, June). Using technology as a tool in the course of student inquiry. Invited workshop at the No Question Left Behind: Bringing Guided-Inquiry Curricula into Science and Mathematics Classrooms Workshop, Northport, Maine.

Polman, J. L. (2003, October). Learning history and becoming engaged citizens through digital community history projects. Invited presentation to the Urban Achievement Alliance's Urban Education Summit, St. Louis, MO.

Polman, J. L. (2003, October). Designing environments to promote youth learning and community engagement. Invited presentation to the University of Missouri Board of Curators, St. Louis, MO.

Polman, J. L. (2003, July). History learning research. Invited presentation at the Center for Educational Technologies, Wheeling Jesuit University, Wheeling, WV.

Polman, J. L. (2001, October). Designing environments for history learning and identity development on the borders of school. Invited presentation at Simon Fraser University, Vancouver, British Columbia, Canada.

Polman, J. L. (2001, September). Designing project-based science: Connecting learners through guided inquiry. Invited presentation at the University of Texas, Austin, TX.

Polman, J. L. (2000, May). Designing project-based science: Connecting learners through guided inquiry. Invited presentation at Florida International University, Miami, FL.

Polman, J. L. (1999, November). Technology in the classroom: Changing possibilities for learning. Presented to the University of Missouri-St. Louis chapter of the Student National Education Association.

Polman, J. L. (1999, April). Framing research on museum experiences. Invited presentation at the Lowenthal Symposium on Informal Learning Environments and Museums, St. Louis, MO.

Polman, J. L. (1998, October). Understanding informal learning environments involving historical inquiry. Poster presented at the Cognitive Studies for Educational Practice Annual Meeting, Boulder, CO.

Polman, J. (1998, July). HistoryWeb St. Louis: Re-constructing the history of the underground railroad. Invited exhibit at the National Park Service's unveiling of "The Spirit of Freedom", the new African-American Civil War Memorial, Washington, DC.

Polman, J. (1998, May). New forms of learning by doing: History and technology projects in after school clubs. Presented at the Washington University in St. Louis Education Department's Annual Spring Forum, St. Louis, MO.

Polman, J. (1998, April). HistoryWeb St. Louis: New designs and settings for history learning. Invited address presented at the Goals 2000 Social Studies Project Conference: "Best Practices in Social Studies", St. Louis, MO.

Polman, J. (1998, February). A neo-Vygotskian perspective on museum experiences. Invited address presented at the meeting of the Asociación Mexicana de Museos y Centros de Ciencia y Tecnología (Mexican Association of Museums and Science and Technology Centers), Mexico City, Mexico.

Polman, J. L. (1997, October). Creating an activity system to foster historical and technological fluency. Poster presented at the Cognitive Studies for Educational Practice Annual Meeting, Seattle, WA.

Public Scholarship

"Igniting lifelong learning: Introduction to SEL and academic integration (Part 1 of 3)" Webinar sponsored by Collaborative for Academic, Social, and Emotional Learning (CASEL), April 16, 2024. Webpage at https://casel.org/events/igniting-lifelong-learning-sel-academic-integration-three-part-series/. YouTube video at https://youtu.be/D4-ob4wR6mM?si=X2kiW3RA2rxmSvqT

"Data Stories and Interdisciplinary Project-Based Learning," by Joe Polman, Trang Tran, and Kate Miller, Fall 2023 @*Concord Newsletter*, *27* (2), 12-13. https://concord.org/newsletter/2023-fall/data-stories-and-interdisciplinary-project-based-learning/

"Authenticity Brings Project-Based Learning to Life: How to Ensure It's at the Center of Instruction in Your Classroom" by Joe Polman & Alison Boardman. January 28, 2022. International Literacy Association's *Literacy Now* blog. https://www.literacyworldwide.org/blog/literacy-now/2022/01/29/authenticity-brings-project-based-learning-to-life-how-to-ensure-it-s-at-the-center-of-instruction-in-your-classroom

"Transforming Learning in an Era of Disinformation & 'Fake News.'" University of Colorado Boulder School of Education *Ed Talks*. May 13, 2021. https://youtu.be/DQO2T03Os8Q

"Situating Data Science: Exploring How Relationships to Data Shape Learning." Video introduction to special issue (v29, no1) of *Journal of the Learning Sciences* by Michelle Hoda Wilkerson and Joseph L. Polman. March 19, 2020. https://youtu.be/KwpmoyYaXWk

"Episode 1: An interview with Jennifer Hope and Joseph Polman, authors of the article titled: Science news stories as boundary objects affecting engagement with science." Research Matters Podcast, sponsored by NARST and NSTA. January 26, 2016. http://learningcenter.nsta.org/products/symposia_seminars/narst/podcast_research_matters.aspx?p=ep1

External Grants & Contracts

External funding total as Principal Investigator (PI) or Co-PI: **$10,662,573**

Co-PI (with PI Kristina Stamatis, and Co-PI Jason Romero), Nuestras historias son sus historias: Community curation and storytelling in museums with Latine youth, Spencer Foundation (Large Grant), total award $250,000, 2024-2026; Lead institution is University of Nebraska-Omaha; I am PI of $81,547 subaward to CU Boulder.

Co-PI (with PI Daniel Knight, and Co-PIs Angela Bielefeldt, and Michael Hannigan), Colorado Science and Engineering Inquiry Collaborative, National Science Foundation (Research in the Formation of Engineers Design & Development project), $418,531, 2023-2026.

PI, AWWA Graduate Research Assistant, American Water Works Association, $30,399, 2024-25.

Co-PI (with PI Chad Dorsey and Co-PIs Linda Grein & Ron Berger), Contextualizing Data Education via Project-Based Learning, National Science Foundation (Discovery Research K-12 Program), total award $999,999, 2022-2025. Lead institution is Concord Consortium; I am PI of $250K subaward to CU Boulder; and there is also a subaward to EL Education.

PI, ISLS 2022 Mentoring Workshops, National Science Foundation (Cyberlearning & Future Learning Tech program conference grant), $8,697, 2022-23.

Co-PI (with PI R. Benjamin Shapiro and Co-PIs Mike Eisenberg and Shaun Kane), Catalyzing Scientific Inquiry and Engineering through Wearable Intersubjective Sensation Devices, National Science Foundation (Cyberlearning Exploratory grant), IIS-1736051, $748,458, 2017-2023. (Served as PI in 2023)

PI (with Co-PI Karla Scornavacco). Inquiry-based Teaching and Learning in International Baccalaureate Schools: An Exploratory Study. International Baccalaureate Organization. $99,640, 2019-2021.

PI (with Co-PI Melissa Braaten), Workshop on Diversifying and Deepening Engagement and Learning in Science, Technology, Engineering, and Mathematics (STEM): Bringing Together Dutch and U.S. Scholars, National Science Foundation (I-TEST Program conference grant), $99,699, 2018-19.

PI (of subaward at CU Boulder; PI of main award at Denver Museum of Nature & Science is Nicole Garneau), More Than Just a Taste of Citizen Science, National Institutes of Health Science Education Partnership Award (SEPA), $284,747 (CU subaward, of $1.03million total), 2016-2020.

PI (with Alison Boardman & Co-PIs Bridget Dalton, Antero Garcia, and Bud Hunt), "Composing Our World": Supporting Literacy and Social and Emotional Learning through 9th Grade ELA Project-Based Learning, George Lucas Educational Foundation, $2.5million, 2015-2019.

PI (with Engida Gebre, Andee Rubin, and Cynthia Story Graville), STEM Literacy through Infographics (SLI), National Science Foundation (Cyberlearning Development and Implementation Program grant), IIS-1441561, $881,559. Collaborative grant with TERC ($321, 817) and Saint Louis University ($144,984). 2015-2018.

Co-PI (with Michelle Wilkerson-Jerde, Tapan Parikh, and Victor Lee), Data Science, Learning and Youth: Connecting Research and Creating Frameworks, National Science Foundation (Cyberlearning Capacity-Building grant), IIS-1541676, $49,958, 2015-2016.

Co-PI (with PI Erin Furtak). Sandra K. Abell Institute for Doctoral Students at University of Colorado Boulder (SKAIDS@CU). $25,000. NARST. 2015.

PI, Collaborative Infographics for Science Literacy (CISL), National Science Foundation (Cyberlearning Program, Exploratory grant), IIS-1217052, $550,000, 2012-2015.

PI, Science Literacy through Science Journalism, National Science Foundation (Discovery Research K-12 Program), DRL-0822354, $3.5 million, 2008-2012.

PI, The Mediated Critique and Construction of Empirical Narratives, Spencer Foundation, $40,000, 2006-2007.

External Evaluator, YES-2-Tech, Saint Louis Science Center, National Science Foundation Information Technology Experiences for Students and Teachers, May 2007-September 2007.

Participating faculty, Missouri Science Teaching and Education Partnership (MO-STEP), National Science Foundation (GK-12 program), $1.5 million, 2004-2007.

PI, Historical Thinking with the *Foundations of Freedom* DVD, U.S. Department of Education, $9,286, 2003-2004.

PI, St. Louis Consortium Preparing Tomorrow's Teachers to Use Technology, U.S. Department of Education, $1.04 million, 1999-2003.

Postdoctoral Fellow, HistoryWeb St. Louis: Developing expressive fluency through the collaborative construction of online museum exhibits, James S. McDonnell Foundation (Cognitive Studies for Educational Practice program), $70,000, 1997-1999.

Internal (University) Awards and Funding

Internal funding total as PI or Co-PI: **$193,500**

Co-PI (with PI Cresten Mansfeldt and Co-PIs Joost de Gouw and Enrique Lopez), Exposure to and Health Effects of After-wildfire Toxicants (ExHEAT) Consortia, CU Boulder New Frontiers Grant Program, $50,000, 2024-25.

Co-PI (with PI Daniel Knight and Co-PI Michael Hannigan). SCENIC 2024: Southeastern Colorado Expansion and Teaching Community Integration. Public and Community Engaged Scholarship (PACES) Tier 4 Award, University of Colorado Boulder, $24,000, 2024-2025.

PI (with Co-PIs Daniel Knight and Michael Hannigan), Documenting and Sustaining the SCENIC (Science-Engineering Inquiry Collaborative in Rural Colorado) Partnership Program, School of Education Place-Based Partnership Sustainability Award, University of Colorado Boulder, $15,000, 2023-2024.

Co-PI (with PI Daniel Knight and Co-PI Michael Hannigan). SCENIC 2023: Southwestern Colorado Expansion and Multilingual Support. Outreach Award, University of Colorado Boulder, $24,000, 2023-2024.

Co-PI (with PI Daniel Knight and Co-PI Michael Hannigan). SQIQ: Rural Colorado soil quality inquiry program development. Outreach Award, University of Colorado Boulder, $24,000, 2022-2023.

PI (with Kristina Stamatis). Voces Vivas: Youth community curation in local museums. The Center to Advance Research and Teaching in the Social Sciences (CARTSS), University of Colorado Boulder. $4,500, 2020-21.

Co-PI (with PI Daniel Knight and Co-PI Michael Hannigan). SCENIC Expansion: Developing Outreach Pathways in Rural Colorado. Outreach Award, University of Colorado Boulder, $24,000, 2021-2022.

PI (with Co-PI Daniel Knight and Michael Hannigan). SCENIC: Science-Engineering Inquiry Collaborative in Rural Colorado. School of Education Place-Based Partnership Seed Award, University of Colorado Boulder, $10,000, 2020-2021.

Co-PI (with PI Daniel Knight and Co-PI Michael Hannigan). SCENIC: Science-Engineering Inquiry Collaborative In Rural Colorado. Outreach Award, University of Colorado Boulder, $24,000, 2020-2021.

Co-PI (with PI Daniel Knight and Co-PI Michael Hannigan). ESIQ: Engineering and Science Inquiry Projects in Rural Schools. Outreach Award, University of Colorado Boulder, $24,000, 2019-2020.

Co-PI (with PI Daniel Knight and Co-PI Michael Hannigan). AQIQ: Air Quality Inquiry Projects in Rural Schools. Outreach Award, University of Colorado Boulder, $24,000, 2018-2019.

Co-PI (with Daniel Doak, Amanda Carrico, and Stacey Shulte), Loving it to Death? Measuring and Managing for the Human Carrying Capacity of Open Space Lands. Seed Grant Program for Interdisciplinary Research in Environment and Sustainability, University of Colorado Boulder, $20,000, 2015-2016.

Post-Doctoral Scholars Sponsored

Priyanka Parekh, University of Colorado Boulder, 2021-2023.

Joanna Weidler-Lewis, University of Colorado Boulder, 2016-2017.

Engida Gebre, University of Colorado Boulder, 2013-2014.

Doctoral Dissertations Chaired

At University of Colorado Boulder

Tran, Trang C. (2024). Explorations of the structure-agency dialectic across three STEM education contexts focused on equity and identity development. School of Education, Learning Sciences and Human Development (LSHD) program.

Widman, Sari (2024). Exploring possibilities for meaningful and consequential STE(A)M learning in public libraries. School of Education, Learning Sciences and Human Development (LSHD) program.

Riedy, Robbin T. T. (2022). Dignity-affirming care in collaborative research spaces. School of Education, Learning Sciences and Human Development (LSHD) program. Co-chaired with William R. Penuel.

Stamatis, Kristina M. (2021). Seeking stories: Throughlining in 9th grade English language arts. School of Education, Learning Sciences and Human Development (LSHD) program.

Hinojosa, Leighanna (2020). Identity development, participation, and equity in museum community science programs. School of Education, Learning Sciences and Human Development (LSHD) program; dual degree with Institute of Cognitive Science.

Auguste, Donna (2019). A data science approach to STEM (Science, Technology, Engineering and Math) Identity Research for African American Communities. Doctorate from ATLAS. Co-Chaired with Shelley Miller.

2 active doctoral advisees in Learning Sciences and Human Development (Steve Sommer, Marisa Mendoza-Maurer).

At University of Missouri-St. Louis

Porterfield, Michael (2013). The religious formation of graduate ministry students in an online wisdom community.

Farrar, Cathy (2012). Assessing the impact participation in science journalism activities has on scientific literacy among high school students.

Hope, Jennifer M. G. (2012). Exploring the nature of high school student engagement with science and technology as an outcome of participation in science journalism.

McMahon, Ann (2011). Elementary teachers' mental models of engineering design processes: A comparison of two communities of practice.

Gray, Jenny E. (2011). The impact of a Saturday enrichment program with a university partnership in an urban elementary school.

Good, Robert (2010). Social studies teachers who teach toward social justice: An examination of life histories.

Banks, Sibyl (2010). Project-based learning about nutrition with technology in an African-American middle school: An action research study.

Suess, Patricia A. (2007). The experience of technology integration by teacher educators in higher education.

Gregg, Diane E. (2007). Principals and library media specialists working together: A case study of one elementary school.

Isaac-Johnson, Dianna (2007). Creating culturally relevant technological operas in an urban school.

Biddix, J. Patrick (2006). The power of "Estudentprotest:" A study of electronically-aided student activism.

Kulla-Abbott, Therese (2006). Developing literacy practices through digital storytelling.

Jaradat, Suhair (2004). Jordanian students' participation in their first experience of online coursework.

Burns, Kathleen (2003). The impact of ubiquitous wireless computers in the Internet age: How middle school teachers adapted to the technology in the initial stages of implementation.

Russell, Donna (2003). The mediated action of educational reform: An inquiry into collaborative online professional development and unit implementation.

Doctoral Dissertation Committees (completed)

University of Colorado Boulder (with home unit noted): Josie Chang-Order (SOE/EFPP), Erik Dutilly (SOE/LSHD), Lila Finch (ATLAS), Ryan Grover (SOE/STEM Ed), Ashieda McCoy (SOE/LSHD), Susan Miller (SOE/STEM Ed), Celeste Moreno (ATLAS), Adria Padilla-Chavez (SOE/LSHD), Calvin Pohawpatchoko, Jr. (ATLAS), Ishita Pradhan (SOE/LSHD), Ian Renga (SOE/ROTATE), Sam Severance (SOE/LSHD), Rebecca Swanson (SOE/STEM Ed), Leah Teeters (SOE/LSHD), Benjamin Van Dusen (SOE/STEM Ed), Benjamin Walsh (SOE/Literacy Studies), Junnan Yu (Information Science)

University of Missouri-St. Louis: Deb Baldini, Daniel Blash, Sarah Coppersmith, Amy Ruffus Doerr, Jerol Enoch, Tina Fanetti, Denise Ford, Linda Gaither, Melissa Gustafson-Hinds, Carole

Huang, Sujin Kim, Angela Kohnen, Linda Kralina, Kathleen Kurz, Karen LaFever, Ying Liu, Ray Martinez, Glenda McCarty, Julieta Ocuaman, Lisa Paredes, Amy Peach, José Pareja, Cindy Poston, Cynthia Pulley, Monya Ruffin, Andrew Shaw, Nancy Singer, Michelle Phillips Whitacre, Olena Zhadko

Other universities (external examiner or committee member): Joshua DiPasquale (University of Calgary), Rim Fathallah (University of Toronto/Ontario Institute for Studies in Education), Cresencia Fong (University of Toronto/Ontario Institute for Studies in Education), Diane Hui (Washington University in St. Louis), Katherine Miller (University of Pennsylvania), Emily Oswald (University of Oslo), Shawn Rowe (Washington University in St. Louis), Monique Verhoeven (University of Amsterdam), Mark Weiler (Simon Fraser University)

Master of Education Theses Chaired, University of Colorado Boulder (completed)
Jamie Hays (Learning Sciences and Human Development)

Master of Education Advisees (completed)
Rachel Von Holst, Stephen Sommer (Learning Sciences and Human Development)

Undergraduate Honors Thesis Committees, University of Colorado Boulder (completed)
William Downie, Joshua Temes (both in Environmental Studies)

Courses Taught
At University of Colorado Boulder (* denotes developed and taught, otherwise taught)

- Critical Introduction to Learning Theory and Practice, Part 1* (doctoral level)
- Seminar in Human Learning: Learning Sciences Approaches to STEM Education* (doctoral level)
- Seminar in Human Development: Identity Development and Learning* (doctoral level)
- Adolescent Development and Learning for Teachers (undergraduate level)

At University of Missouri-St. Louis (all developed and taught)

(Except where noted, courses were in Educational Technology, at the Graduate level)

- Introduction to Computers and the Internet in Education
- Selection & Utilization of Educational Multimedia
- Teaching and Learning with Technology: Authoring Tools
- Instructional Technology and Education Reform
- Computer-Mediated Communication in Education
- Cognition and Technology (Ed Tech/Ed Psych)
- Technology-Supported Inquiry Learning (Ed Tech/Ed Psych)
- Educational Multimedia Design
- Seminar in Educational Technology Research – Video as a Research Tool
- Instruction, Learning, and Assessment (Ed Psych/Teacher Ed M.Ed. core course)
- Teaching and Learning with Technology: Graphical Representation Tools

At Washington University in St. Louis (developed and taught)
- Informal Learning Environments (Education, Undergraduate)

University Service and Committees

Member, Dean's Leadership Team, School of Education, University of Colorado Boulder (CU), September 2012-present.

Member, Dean's Advisory Committee, School of Education, CU, September 2012-present.

Member, Academic Resource Management Advisory Committee, CU, September 2012-2018, January 2020-present.

Member, Standing Committee on Research Misconduct, CU, 2012-2018 (acting chair, 2016-17), January 2020-present.

Member, Budget Model Design Review Committee, CU, 2025-present.

Member, New Frontiers Grant Program Review Panel, CU Research and Innovation Office, Spring 2024 and Spring 2025.

Member, Institute of Cognitive Science Executive Committee, CU, 2022-2024.

Member, Faculty Search Committee, Prevention Science Program, Institute of Behavioral Science, CU, 2022-23.

Program Co-Chair, Learning Sciences and Human Development, School of Education, CU, Spring-Summer 2021.

Chair, Self Study, School of Education, CU, submitted for program review to Academic Review and Planning Advisory Committee, 2013, 2021.

Member or Chair, Primary Unit Evaluation Committees (various reappointment, tenure, and promotion cases), CU, 2015-2018, 2020-2025.

Member, College of Engineering and Applied Sciences multiple faculty position searches (cluster hire, aimed at diversity and inclusion), CU, Fall 2020-Spring 2021.

Member, Search Committee, School of Education, CU, Learning Sciences & Human Development, 2018-19.

Member, ATLAS Faculty Advisory Board, CU, May 2017-2018.

Member/Chair, Staff Search Committees (various positions), CU School of Education, 2013-2018, 2020-2022, 2024-2025.

Member, Search Committee, School of Education, CU, Equity, Diversity & Social Justice Faculty Position, 2015-16.

Member, Search Committee, School of Education, CU, Democracy and Education Faculty Position, 2014-15.

Member, Search Committee, School of Education, CU, Elementary Science Education Faculty Position, 2012-13.

Chair, Faculty Mentoring Program, CU, September 2012-18.

Chair, Ad Hoc Online Learning Committee, School of Education, CU, 2012-13.

Chair, Division of Teaching and Learning, University of Missouri-St. Louis (UMSL) College of Education (COE), 2007-2012.

Associate Director, E. Desmond Lee Technology and Learning Center, UMSL COE, 2000-2012.

Member, Access to Success (A2S) Guiding Coalition, UMSL, 2010-2011.

Member, Program Audit Committee, UMSL, 2007-2010.

Member, Search Committee, University of Missouri-St. Louis, College of Education:
 Dean, 2010-2011
 Interim Dean, 2010
 Assistant Professor of Educational Psychology, 2007-08
 Lecturer in Physical Education, 2006
Director, Search Committee (as Division of Teaching and Learning Chair or Coordinator for Faculty), University of Missouri-St. Louis, College of Education:
 Assistant Professor of Language Diversity and Learning, 2012
 Assistant Professor of Elementary Literacy, 2012
 Assistant Teaching Professor of Elementary Literacy, 2011
 Assistant Professor of Special Education, 2010
 Lecturer in Elementary Education (Outreach), 2009
 Associate Professor of Early Childhood Education, 2008
 Assistant/Associate Professor in Literacy, 2006
 Assistant Professor in Mathematics Education, 2006
Member, Faculty Advisory Committee, St. Louis GEAR-UP Grant, 2009-2011.
Member, University of Missouri Research Board, 2003, 2007, 2008.
Member, COE Institutional Review Board (IRB) Committee, UMSL COE, 2008-2009.
Chair, Dean's Ad Hoc Model Classroom Committee, UMSL COE, 2007-08.
Coordinator for Faculty, Division of Teaching and Learning, UMSL COE, 2005-2006.
Representative, Faculty Senate, UMSL (representing the Division of Teaching and Learning, College of Education), 2004-2006.
Member, Faculty Senate Nominating Committee, UMSL, 2005- 2006.
Chair, Faculty Senate Nominating Committee, UMSL, 2006).
Member, Graduate Education Council, UMSL COE, 2001-2003.
Chair, Graduate Education Council, UMSL COE, 2004-2006.
Doctoral Admissions Committee, Division of Teaching and Learning, UMSL COE, 2002-2006.
University of Missouri System Comprehensive Program Assessment, 2004-05 & 2005-06.
Member, Ad Hoc Division Chair Nominating Committee, Division of Teaching and Learning, UMSL COE, 2005.
Member, Graduate Faculty Nominating Committee, UMSL, 2004.
Member, University-wide Committee for Scheduling of Advanced Technology & ITV Classrooms, UMSL, 2001-2002.
Member, University-wide Teaching Subcommittee of the University IT Strategic Planning Committee, UMSL, 2001-2002.
Member, University Senate Video and Instructional Technology Committee, UMSL, 1999-2001.
Member, Curriculum and Policy Council, UMSL COE, 2000-2001.

Advisory Roles and Community Boards

Advisory Board, "EMPOWER: Enacting Materials to Promote Ownership, Engagement, and Relevance." NIH Science Education Partnership Award, University of Colorado Boulder, University of Massachusetts Amherst, University of Illinois at Urbana-Champaign, and Stanford University, 2025-2027.

Advisory Group, "Measures Guide for Modern High School Math." Mathematica. This document was part of the Gates Foundation's Modern Advanced Math Curricula for High School Body of Work (BoW), 2026.

Advisory Board, "Expanding sixth-grade youth's understanding of engineering through critical multilingual journalism." NSF Innovative Technology Experiences for Students and Teachers (ITEST), Tufts University, 2023-2025.

Advisory Board, "Collaborative Research: Integrating Language-Based AI Across the High School Curriculum to Create Diverse Pathways to AI-Rich Careers." NSF Innovative Technology Experiences for Students and Teachers (ITEST), Carnegie Mellon University, North Carolina State University, and Concord Consortium, 2023-2025.

Advisory Board, "STEM Ecologies of Learning for Families: Supporting Intergenerational Learning through University-Prison Partnership." NSF Advancing Informal STEM Learning (AISL), Saint Louis University, 2019-2024.

Research Oversight Group, "Roads Taken: A Retrospective Study of Program Strategies and Long-term Impacts of Intensive, Multi-year, STEM Youth Programs" NSF Advancing Informal STEM Learning (AISL), Center of Science and Industry (COSI), 2019-2024.

Advisory Group, High Quality Project-Based Learning (HQPBL) Framework, Buck Institute for Education, 2017-2018. https://hqpbl.org/

Advisory Board, "Designing Tactile Picture Books: Critical Making in Libraries to Broaden Participation in STEM Education and Careers" NSF Innovative Technology Experiences for Students and Teachers (ITEST), University of Colorado Boulder, 2016-2019.

Advisory Board, "Lens on Climate Change in Colorado – Engaging Secondary Students in Regionally Relevant Science Topics Through Videography" NSF Innovative Technology Experiences for Students and Teachers (ITEST), University of Colorado Boulder, 2015-2018.

Advisory Board, "Community-Driven Projects That Adapt Technology for Environmental Learning in Nature Preserves" NSF Advancing Informal STEM Learning grant, University of Maryland/University of North Carolina Charlotte/University of Colorado, 2015-2017.

Advisory Board, "DataSketch: Exploring Computational Data Visualization in the Middle Grades" NSF CAREER grant, Tufts University, 2014-2019.

Advisory Board, "Designing Digital Rails to Foster Scientific Curiosity around Museum Collections," NSF Cyberlearning and Future Learning Technologies, Northwestern University and Chicago Field Museum, 2015-2016.

Advisory Board, "EXP: Exploring the potential of mobile augmented reality for scaffolding historical inquiry learning" NSF Cyberlearning grant, Virginia Tech University, 2013-2015.

Advisor, Virtual Teacher Learning Community (vTLC), CU Innovative Seed Grant Program, PI Erin Furtak, 2013-2015.

Advisory Committee, Challenger Learning Center-St. Louis, 2011-2012.

Emerging Technologies Advisory Board, Saint Louis Science Center, 2002-2008.

Board of Directors, St. Louis B-Works (BicycleWorks and ByteWorks), 2001-2005.

Advisory Committee Member, Sumner MEGA Magnet High School, St. Louis Public Schools, 2000-2001.

Board of Directors & Education Committee, City Academy at Mathews-Dickey, 1997-2002 (committee chair 1997-2001).

Service in Professional Organizations

Editorial Board, *The Journal of the Learning Sciences*, 2003-present.

Editorial Board, *Cognition and Instruction*, 2016-present.

Editorial Board, Rapid Community Reports Series sponsored by the Center for Integrative Research in Computing and Learning Sciences (CIRCLS) and the International Society of the Learning Sciences (ISLS), 2022-present.

Member, Journal of the Learning Sciences Article of the Year Award Selection Committee, 2025.

Co-Chair, Doctoral Consortium, Annual Meeting of the International Society of the Learning Sciences, 2021, 2022.

Spencer Foundation Grants Review Panel, 2020-2021.

National Science Foundation Review Panels, 2006, 2008, 2010-2014, 2016-17, 2022-24
  Advancing Informal STEM Learning (AISL)
  Advanced Learning Technologies
  Cyberlearning
  Graduate Research Fellowship Program
  Informal Science Education
  Research on Learning and Education
  STEM Education Individual Postdoctoral Research Fellowships

International Society of the Learning Sciences
  Chair, Nominations Committee, 2020-21
  Member, Online Conference Committee, 2020-21, 2021-22
  Member, Equity & Justice Committee, 2020-2024
  Board of Directors, 2013-2020
  Executive Committee, 2014-2020
    Past-President, June 2019-June 2020
    President, June 2018-June 2019
    President-Elect, June 2017-June 2018
    Secretary and Treasurer, 2014-2017
  Finance Committee, 2011-2013

Mentor, AERA Division C New Faculty Mentoring Program, 2021.

Mentor, International Conference of the Learning Sciences 2020 Mid-Career Workshop.

Mentor, NARST 2020 Graduate Student Research Symposium.

Editorial Board, *American Educational Research Journal*, 2016-2020.

Executive Editor, *Cognition and Instruction*, 2012-2016.

Mentor, International Conference of the Learning Sciences (ICLS) 2016 Doctoral Consortium.

Program Co-Chair, 2016 International Conference of the Learning Sciences (ICLS) hosted at Singapore National Institute of Education in June 2016.

Program Co-Chair, 2014 International Conference of the Learning Sciences (ICLS) hosted at University of Colorado Boulder in June 2014.

Editorial Board, *Journal of Research in Science Teaching*, 2011-2014.

Section Co-Chair, Section 3a Learning Environments of Division C (Learning and Instruction), for the American Educational Research Association (AERA) 2013 Annual Meeting, Summer 2012-Fall 2012. (Coordinated review and selection of paper sessions and symposia for the section's program at the meeting).

Mentor, AERA Division C (Learning and Instruction) Graduate Student Seminar, 2012.

The Education University of Hong Kong (EdUHK) Grant Reviewer, 2022.

National Endowment for the Arts, Arts Education Review Panel, 2013, 2015.

Israel Science Foundation Reviewer, 2008, 2016.

Editorial Review Board, The Robert Bowne Foundation, 2005-2009.

AERA SIG Advanced Technologies for Learning/Learning Sciences Best Student Paper Award Review Committee, 2005-2018.

Manuscript reviewer for AERA Division C, AERA SIG EST/LS, AERA SIG ILER, The International Conference of the Learning Sciences, Computer-Supported Collaborative Learning Conference, *The Journal of the Learning Sciences*, *American Educational Research Journal*, *Educational Researcher*, *Science Education*, *Journal of Research in Science Teaching*, *International Journal of Science and Mathematics Education*, *Educational Psychologist*, *Journal of Teacher Education*, *Afterschool Matters*, *Mind Culture and Activity*, *AERA Open, Educational Researcher, Instructional Science,* Teachers College Press, Cambridge University Press and Harvard Education Press.

Discussant for conference sessions at AERA, ICLS, and QuaRC.

Co-Founder and Co-Director, Digital Media Festival (http://dmf.umsl.edu), an annual regional festival sponsored by the E. Desmond Lee Technology and Learning Center, University of Missouri-St. Louis College of Education, 2002-2011.

Local Host Committee, Visitor Studies Association 2009 Conference (St. Louis, MO)

Planning Committee, 2008 Connections Institute: Science in Art, Art in Science (St. Louis, MO)

Program Committee, International Conference of the Learning Sciences (ICLS), 2002 (Seattle), 2004 (Santa Monica).

Planning Committee, Annual Qualitative Research Conference (QuaRC), UM-St. Louis, 2001, 2002, 2003, 2004, 2005, 2008, 2009, 2011.

Planning Committee, Focus on Teaching and Technology Conference, UMSL, 2004, 2005.

Program Chair, AERA Special Interest Group on Education in Science and Technology (EST), 2001-2002.

Founding Leadership Team and Webmaster, AERA SIG on Informal Learning Environments Research (ILER), 1999-2001.

Membership in Professional Organizations

International Society of the Learning Sciences (ISLS), 2004-present.

American Educational Research Association (AERA), 1993-present.

AERA Special Interest Group-Learning Sciences, 2008-present. AERA SIG-Education in Science and Technology (EST), 1993-2008 (SIG was renamed in 2008).

AERA Special Interest Group on Informal Learning Environments Research, 1997-present.

AERA Special Interest Group on Cultural Historical Research, 2001-present.

AERA Special Interest Group on Out-of-School Time, 2008-2012.

National Association for Research on Science Teaching (NARST), 1998, 2010-present.

International Society for Cultural and Activity Research (ISCAR), 2003-2021.

National Science Teachers Association (NSTA), 2008-2019.

Visitor Studies Association, 2009-2010.

Association for the Advancement of Computers in Education (AACE), 2000-2003.

Association for Computing Machinery (ACM), 1993-2001.