Scott Pattison
Research Scientist, TERC
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EDUCATION

Ph.D. Science Education, Oregon State University   **2014**
    Thesis: *Exploring the Foundations of Science Interest Development in Early Childhood*
    Minor: Integrated minor with a focus on advanced research methods and data analysis

M.S. Science Education, Oregon State University   **2011**
    Thesis: *Investigating the Dynamics of Staff-Visitor Interactions at a Science Center*
    Minor: Sociology with a focus on research methods and data analysis

B.S. Environmental Science, University of Oregon   **2003**
    Thesis: *The Restoration Ecology of* Festuca Roemeri
    Minor: Robert D. Clark Honors College

RECENT PROFESSIONAL EXPERIENCE

Research Scientist, TERC, 10/18–Present

Director of Research, Institute for Learning Innovation (ILI), 2/17–9/18

Research & Evaluation Strategist, Oregon Museum of Science and Industry (OMSI), 1/12–5/17

Director of Administration, ILI, 3/14–2/17

Research & Evaluation Associate, OMSI, 2/10–1/12

Senior Exhibit Developer, OMSI, 12/07–2/10

Exhibit Developer, OMSI, 9/05–12/07

Museum Educator, OMSI, 2/04–9/05

Volunteer Curriculum Developer, University of Oregon Natural History Museum, 1/03–12/03

Assistant Field Instructor, University of Oregon Natural History Museum, 1/02–6/03

RECENT AWARDED GRANTS

Diálogos: Harnessing Latinx Community Cultural Wealth to Support Executive Function in Early Childhood through Family Engineering Experiences. National Science Foundation (NSF), Advancing Informal STEM Education and Learning. $299,953. Co-principal investigator. 2021–2023.

Head Start on Engineering: Developing a Learning Community to Study and Support Family-level Interest in Engineering (HSE Systems). National Science Foundation (NSF), Advancing Informal STEM Education and Learning. $1,504,097. Principal investigator. 2019–2023.

Research Exploring Activity Characteristics and Heuristics for Early Childhood Engineering (REACH-ECE). National Science Foundation (NSF), Engineering Education and Centers. $399,371. Co-principal investigator. 2019–2022.

Storybook STEM: Professional Convening for Cross-Sector Understanding of Children's Literature as a Tool for Supporting Informal STEM Learning. National Science Foundation (NSF), Advancing Informal STEM Education and Learning. $75,000. Principal investigator. 2019–2021.

Preparing Low-Income Families for a STEM Future: Mapping Family Engineering Interest Development in Early Childhood. Spencer Foundation. $50,000. Principal investigator. 2018–2019.

Ingeniería Para Mi Familia: Strengthening the Cultural Relevance of the Head Start on Engineering Program for Spanish-Speaking Families. Boeing Company. $20,000. Principal investigator. 2018–2019.

Framing Research on Activities as Mathematical Experiences (FRAME). NSF, Advancing Informal STEM Education and Learning. $299,768. Co-principal investigator. 2018–2020.

Leap into Science: Cultivating a National Network for Informal Science and Literacy. NSF, Advancing Informal STEM Education and Learning. $2,105,734. Co-principal investigator. 2017–2021.

Head Start on Engineering: Supporting Engineering and Science Learning for Low-Income Families. Joint funding provided by Oregon Community Foundation, Collins Foundation, Boeing Corporation, Juan Young Trust, and University of Notre Dame. $75,000. Principal investigator. 2017–2018.

Head Start on Engineering: Supporting Engineering Interest Development in Early Childhood. NSF, Advancing Informal STEM Education and Learning. $299,070. Principal investigator. 2015–2018.

Conference on Integrating Math into Informal Building Learning Environments (Math in the Making). NSF, Advancing Informal STEM Education and Learning. $248,237. Co-principal investigator. 2015–2017.

Interpreters and Scientists Working On Our Parks (iSWOOP). NSF, Advancing Informal STEM Education and Learning. $1,411,492. Subaward project director. 2015–2019.

Designing Our World: A Community Envisioning Girls as Engineers. NSF, Advancing Informal STEM Education and Learning. $2,108,572. Co-principal investigator. 2013–2018.

Researching the Value of Educator Actions for Learning (REVEAL). NSF, Advancing Informal STEM Education and Learning. Co-principal investigator. $866,793. Co-principal investigator. 2013–2018.

Complex Adaptive Systems as a Model for Network Evaluations (CASNET). NSF, Promoting Research and Innovations in Methodologies for Evaluation. $799,881. Co-principal investigator. 2012–2016.

Science on the Move: Everyday Encounters with Science. NSF, Advancing Informal STEM Education and Learning. $249,942. Lead researcher. 2012–2015.

Access Algebra. NSF, Advancing Informal STEM Education and Learning. $3,006,642. Grant writer, lead program developer. 2007–2013.

RECENT PUBLICATIONS

Pattison, S., & Svarovsky, G. (2021). *Sharpening our focus on equity: Reflections from the Storybook STEM project*. https://www.informalscience.org/news-views/sharpening-our-focus-equity-reflections-storybook-stem-project

Pattison, S., Svarovsky, G., & Ramos Montañez, S. (2021). Storybook STEM: Children's literature as a tool for supporting equitable STEM learning for families. *Hands On!, Spring*, 12–17. https://www.terc.edu/hands-on-magazine-spring-2021/

Pattison, S., Callanan, M., Katz, P., Huerta Migus, L., Ramos Montañez, S., Svarovsky, G., & Takeuchi, L. (2020). *Four principles for supporting family learning during the global health crisis: Research-based reflections for teachers and educators*. https://www.informalscience.org/news-views/four-principles-supporting-family-learning-during-global-health-crisis-research-based-reflections

Pattison, S., Gontan, I., Ramos Montañez, S., Shagott, T., Francisco, M., & Dierking, L. (2020). The Identity-Frame Model: A framework to describe situated identity negotiation for adolescent girls participating in an informal engineering education program. *Journal of the Learning Sciences, 29*(4–5), 550–597.

Pattison, S., Svarovsky, G., Ramos-Montañez, S., Gontan, I., Weiss, S., Corrie, P., Benne, M., & Nunes, V. (2020). Understanding early childhood engineering interest development as a family-level systems phenomenon: Findings from the Head Start on Engineering project. *Journal of Pre-College Engineering Education Research (J-PEER), 10*(1), 72–89. https://docs.lib.purdue.edu/jpeer/vol10/iss1/6/

Pattison, S., Gutwill, J., Auster, R., & Cannady, M. (2019). Experimental and quasi-experimental designs in visitor studies: A critical reflection on three projects. *Visitor Studies, 22*(1), 43–66.

Pattison, S., Ramos-Montañez, S., Svarovsky, G., Smith, C., Núñez, V., & Douglass, A. (2019). Head Start on Engineering: Supporting engineering interest development in early childhood for low-income families. *Hands On!, Fall*. https://www.terc.edu/hands-on-magazine-fall-2019/

Reich, C., Pattison, S., Olney, V., Bequette, M., & Cohn, S. (2019). NISE Net: Team-Based Inquiry. In L. Martin, L. Tran, & D. Ash (Eds.), *The reflective museum practitioner: Expanding practice in science museums* (pp. 53–63). New York, NY: Routledge.

Pattison, S., & Dierking, L. (2018). Early childhood science interest development: Variation in interest patterns and parent-child interactions among low-income families. *Science Education, 103*(2), 362–388.

Pattison, S., Rubin, A., Benne, M., Gontan, I., Shagott, T., Francisco, M., Ramos Montañez, S., & Dierking, L. (2018). The impact of facilitation by museum educators on family learning at interactive math exhibits: A quasi-experimental study. *Visitor Studies, 21*(1), 4–30.

Pattison, S., Weiss, S., Ramos Montañez, S., Gontan, I., Svarovsky, G., Corrie, P., Benne, M., Núñez, V., & Smith, C. (2018). *Engineering in early childhood: Describing family-level interest development systems*. Paper resented at the NARST Annual International Conference, Atlanta, GA. http://informalscience.org/engineering-early-childhood-describing-family-level-interest-development-systems

Pattison, S., Gontan, I., Ramos Montañez, S., & Moreno, L. (2018). Identity negotiation within peer groups during an informal engineering education program: The central role of leadership-oriented youth. *Science Education, 102*(5), 978–1006.

Falk, J., Pattison, S., Meier, D., Bibas, D., & Livingston, K. (2018). The contribution of science-rich resources to public science interest. *Journal of Research in Science Teaching, 55*(3), 422–445.

Pattison, S., Randol, S., Benne, M., Rubin, A., Gontan, I., Andanen, E., Bromley, C., Ramos-Montañez, S., & Dierking, L. (2017). A design-based research study of staff-facilitated family learning at interactive math exhibits. *Visitor Studies, 20*(2), 138–164.

Pattison, S., Svarovsky, G., Gontan, I., Corrie, P., Benne, M., Weiss, S., Núñez, V., & Ramos-Montañez, S. (2017). Teachers, informal STEM educators, and learning researchers collaborating to engage low-income families with engineering. *Connected Science Learning, 4*. http://csl.nsta.org/2017/10/head-start-engineering/

Pattison, S., Rubin, A., & Wright, T. (2017). *Mathematics in informal learning environments: A summary of the literature (updated)*. http://www.informalscience.org/mathematics-informal-learning-environments-summary-literature

Svarovsky, G. N., Pattison, S., Verbeke, M., Benne, M., & Corrie, P. (2017). *Head Start on Engineering: Early findings (work in progress)*. Paper presented at the ASEE Annual Conference & Exposition, Columbus, OH: American Society for Engineering Education. https://www.asee.org/public/conferences/78/papers/20296/view

Pattison, S., Svarovsky, G., Corrie, P., Benne, M., Núñez, V., Dierking, L., & Verbeke, M. (2016). *Conceptualizing early childhood STEM interest development as a distributed system: A preliminary framework*. Paper resented at the NARST Annual International Conference, Baltimore, MD. Retrieved from http://www.informalscience.org/conceptualizing-early-childhood-stem-interest-development-distributed-system-preliminary-framework

Cardiel, C., Pattison, S., Benne, M., & Johnson, M. (2016). Science On the Move: A design-based research study of informal STEM learning in public spaces. *Visitor Studies, 19*(1), 1-22.

Gontan, I., Pattison, S., Brandon, S., Rubin, A., Andanen, E., & Benne, M. (2016). REVEALing findings from the field: Experiences developing and implementing a staff facilitation model at two science centers. *Informal Learning Review, 138*(May/June), 15–17.

MANUSCRIPTS IN REVIEW OR PREPARATION

Pattison, S., Ramos Montañez, S. (2021) *Facilitating family learning in museums: Re-thinking our assumptions and approaches.* Invited chapter in press.

Pattison, S., & Ramos Montañez, S. (2021) *Diverse STEM interest development pathways in early childhood*. Invited chapter in press.

Ramos Montañez, S., & Pattison, S. (2021) *Capturing identity work at multiple scales: Theoretical and methodological insights from an informal engineering education program*. Invited chapter in review.

Pattison, S., Ramos-Montañez, S., & Svarovsky, G. (2021). *Family values, parent roles, and life challenges: Parent reflections on the factors shaping long-term interest development for young children and their families participating in an early childhood engineering program*. Manuscript in preparation.

RECENT PRESENTATIONS

Storybooks and equitable STEM learning in early childhood: Moving from books to narratives. Presentation at the Society for Research in Child Development Biennial Meeting (virtual), 2021.

Storybooks as a tool for supporting early childhood family STEM learning. Presentation at the American Educational Research Association Annual Meeting (virtual), 2021.

Early childhood engineering: Supporting engineering design practices with young children and their families. Presentation at the NARST Annual International Conference, Portland, OR, 2020. https://www.informalscience.org/sites/default/files/NARST2020_EarlyEngineering_03-27-20_0.pdf

Storybooks and STEM: Using books as a tool to support early childhood family STEM learning. Presentation at the NARST Annual International Conference, Portland, OR, 2020. https://www.informalscience.org/sites/default/files/NARST2020_StorybookPaperSet_03-27-20_0.pdf

Head Start on Engineering: Illuminating strategies that support science and engineering practices in informal settings. Presentation at the NARST Annual International Conference, Baltimore, MD, March 31–April 3, 2019.

Exploring the intersection of math and making: Insights from theory and practice. Poster presentation at the NARST Annual International Conference, Baltimore, MD, March 31–April 3, 2019.

Framing Research on Activities as Mathematical Experiences (FRAME). Presentation at the NSF Advancing Informal STEM Learning Program Principle Investigator Meeting, Alexandria, VA, February 11–13, 2019.

Engineering in early childhood: Describing family-level interest development systems. Presentation at the NARST Annual International Conference, Atlanta, GA, March 10–13, 2018.

Head Start on Engineering: Activities to get families excited about engineering at home and in the classroom. Presentation at the Oregon Head Start Association Fall Conference, Salem, OR, November 1–3, 2017.

Finding the math in making: Exploring approaches to integrating mathematics with making and tinkering experiences. Presentation at the Association of Science-Technology Centers Annual Conference, San Jose, CA, October 20–24, 2017.

Mathematical reasoning in museums: Defining success and facilitating learning. Invited presentation at the Oregon State University 2017 Ambitious Math and Science Summer Institute, Corvallis, OR, July 3, 2017.

Investigating pathways to STEM identity in free-choice learning environments. Presentation at the Visitor Studies Association Annual Conference, Columbus, OH, July 18-22, 2017.

Developing a descriptive framework of situated identity negotiation for adolescents participating in an informal engineering education program. Presentation at the NARST Annual International Conference, San Antonio, TX, April 22-25, 2017.

Approaches to video analysis: Studying learning and catalyzing reflection. Presentation at the Visitor Studies Association Annual Conference, Boston, MA, July 19-23, 2016.

Generating causal evidence in visitor studies: The potential of quasi-experimental designs. Presentation at the Visitor Studies Association Annual Conference, Boston, MA, July 19-23, 2016.

Studying and supporting the work of informal STEM educators. Presentation at the NARST Annual International Conference, Baltimore, MD, April 14–17, 2016.

Head Start on Engineering: Supporting engineering interest development in early childhood. Presentation at the NARST Annual International Conference, Baltimore, MD, April 14–17, 2016.

OTHER PROFESSIONAL ACTIVITIES

Current or past member of the National Association for Research in Science Teaching, Society for Research in Child Development, Visitor Studies Association, American Evaluation Association, American Educational Research Association, Association of Science-Technology Centers, and American Alliance of Museums

National Science Foundation proposal review panelist, 2020

Co-coordinator for the National Association for Research in Science Teaching conference Strand 6: Science Learning in Informal Contexts, 2017–2019

Editorial board member for the *Visitor Studies* journal, 2013–2021

Proposal reviewer for IMLS Sparks! and Museums for America grant programs, 2010–2012, 2015, 2017

Invited member of the Center for the Advancement of Informal Science Education (CAISE) wiki edit-a-thon meeting, Seattle, OR, March 15–16, 2015

Board member for the Committee on Audience Research and Evaluation, American Alliance of Museums, 2013–2014

Invited member of the CAISE practice-and-research initiative working group meeting, Pittsburgh, PA, April 19–20, 2013

Editorial review panel member for the *Journal of Museum Education*, 2011–2013

Session proposal reviewer for Visitor Studies Association Regional Conference, 2011