

HEATHER LEARY, PH.D.

Instructional Psychology & Technology
Brigham Young University
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Education

- 2012 **Ph.D.**, Instructional Technology and Learning Sciences
Utah State University, Logan, UT
- Dissertation Title: *Self-Directed Learning in Problem Based Learning versus Traditional Lecture Based Learning: A Meta-Analysis*
Dissertation Committee: Andrew Walker (chair), Mimi Recker, Brett E. Shelton, Karl White, Wendy Holliday
- 2005 **Master of Education**, Instructional Technology
Utah State University, Logan, UT
- 2000 **Bachelor of Fine Arts**, Photography
Utah State University, Logan, UT

Work Experience

- 2016-Present **Assistant Professor**
Instructional Psychology & Technology
Brigham Young University, Provo, UT
- 2015-2016 **Curriculum Designer**
Online Curriculum Development
Brigham Young University – Idaho, Rexburg, ID
- 2011-2015 **Research Associate**
Institute of Cognitive Science
University of Colorado Boulder, Boulder, CO
- 2011-2015 **Visiting Research Scientist**
Digital Learning Sciences
University Corporation for Atmospheric Research, Boulder, CO
- 2010-2011 **Scholarly Communications & IR Librarian**
Merrill-Cazier Library, Digital Initiatives
Utah State University, Logan, UT
- 2006-2011 **Graduate Research Assistant**
Instructional Technology and Learning Sciences
Utah State University, Logan, UT
- 2008-2010 **Institutional Repository/Digital Imaging Coordinator**
Merrill-Cazier Library, Digital Initiatives
Utah State University, Logan, UT

- 2004-2008 **Digital Library Assistant**
Merrill-Cazier Library, Digital Initiatives
Utah State University, Logan, UT
- 2003-2004 **Cataloging Assistant**
Merrill-Cazier Library, Cataloging
Utah State University, Logan, UT

Awards & Honors

- 2011 **Early Career Symposium Recipient**
One of 7 faculty/post docs selected for the symposium sponsored by the National Science Foundation and held at the Association for Educational Communications and Technology annual conference, October/November, Jacksonville, FL.
- 2011 **Outstanding Research Assistant**
Instructional Technology and Learning Sciences, Utah State University, Logan, UT
- 2009 **Lee W. Cochran Intern**
One of 5 graduate students selected for the ECT Internship held at the 2009 Association for Educational Communications and Technology annual conference, October, Louisville, KY
- 2009 **Professional Staff Award**
Merrill-Cazier Library, Utah State University, Logan, UT
- 2009 **Outstanding Research Assistant**
Instructional Technology and Learning Sciences, Utah State University, Logan, UT
- 2009 **Best Student Paper Award**
American Educational Research Association Sig ATL/LS, April, San Diego, CA
- 2009 **American Educational Research Association-Division C Graduate Student Seminar Recipient**
One of 20 graduate students selected for the American Educational Research Association annual meeting, April, San Diego, CA
- 2005 **Master of Education Scholar of the Year**
Instructional Technology, Utah State University, Logan, UT

Research

Research Interests and Expertise

My research fuses Instructional Technology with aspects of the Learning Sciences, Information Science, and Computer Science for highly interdisciplinary and collaborative projects.

Areas of expertise:

- Adult education, face-to-face/hybrid/online
- Technology design, development, evaluation
- STEM education
- Open educational resources
- Information synthesis
- Self-directed learning
- Teacher professional development
- Inquiry-based learning, problem-based learning
- Design-based implementation research
- User-centered design
- Mixed methods research
- Meta-analysis and meta-synthesis

Refereed Journal Articles

- Severance, S., Penuel, W. R., Sumner, T., **Leary, H.** (2016). Organizing for Teacher Agency in Curricular Co-Design. *Journal of the Learning Sciences*, 25(4), 531-564.
- Leary, H.**, Severance, S., Penuel, W. R., Quigley, D., & Sumner, T. (2016). Designing a Deeply Digital Science Curriculum: Supporting Teacher Learning and Implementation with Organizational Technologies. *Journal of Science Teacher Education*, 27(1), 61-77.
- Johnson, R., Severance, S., Penuel, W. R., & **Leary, H.** (2016). Teachers, Tasks, and Tensions: Lessons from a Research-Practice Partnership. *Journal of Mathematics Teacher Education*, 19 (1/2). <http://dx.doi.org/10.1007/s10857-015-9338-3>
- Lundstrom, K., Diekema, A., **Leary, H.**, Haderlie, S., & Holliday, W. (2015). Teaching and Learning Information Synthesis: An intervention and rubric based assessment. *Communications in Information Literacy*, 9(1), 60-82.
- Ye, L., Recker, M., Walker, A., **Leary, H.**, & Yuan, M. (2015). Expanding Approaches for Understanding Impact: Integrating Technology, Curriculum, and Open Educational Resources in Science Education. *Educational Technology Research and Development*, 63(3), 355-380.
- Belland, B. R., Walker, A. E., Olsen, M. W., & **Leary, H.** (2015). A Pilot Meta-Analysis of Computer-Based Scaffolding in STEM Education. *Educational Technology and Society*, 18(1), 183-197.
- Butcher, K., **Leary, H.**, Foster, J., Devaul, H. (2014). Adopting an Online Curriculum Planning Tool: Facilitation for teachers' thinking about constructive pedagogy and technology integration. *Journal of Technology and Teacher Education*, 22(4), 423-447.
- Lee, V. R., **Leary, H.**, Sellers, L., Recker, M. (2014). The Role of School District Science Coordinators in the District-Wide Appropriation of an Online Resource Discovery and Sharing Tool for Teachers. *Journal of Science Education and Technology*, 23(3), 309-323. doi: 10.1007/s10956-013-9465-5
- Leary, H.**, Walker, A., Shelton, B. E., & Fitt, M. H. (2013). Exploring the Relationships Between Tutor Background, Tutor Training and Student Learning: A Problem-Based Learning Meta-Analysis. *Interdisciplinary Journal of Problem-Based Learning*, 7(1), 40-66.
- Wetzler, P., Bethard, S., **Leary, H.**, Butcher, K., Danesh, S., Zhao, J., S., Martin, J. H., Sumner, T. (2013). Characterizing and Predicting the Multi-faceted Nature of Quality in Educational Web Resources. *Transactions on Interactive Intelligent Systems*, 3(3).
- Leary, H.**, Lundstrom, K., & Martin, P. (2012). Copyright Solutions for Institutional Repositories: A Collaboration with Subject Librarians. *Journal of Library Innovation*, 3(1), 62-71.
- Walker, A., Recker, M., Ye, L., Robertshaw, M. B., Sellers, L., & **Leary, H.** (2012). Comparing Technology-Related Teacher Professional Development Designs: A multilevel study of teacher and student impacts. *Educational Technology Research and Development*, 60(3), 421-444.
- Ye, L., Walker, A., Recker, M., Robertshaw, M. B., Sellers, L., & **Leary, H.** (2012). Designing for problem-based learning: A comparative study of technology professional development. *US-China Education Review B*, 5, 510-520.
- Walker, A., Recker, M., Robertshaw, M. B, Olsen, J., **Leary, H.**, Ye, L., & Sellers, L. (2011). Integrating Technology and Problem-Based Learning: A Mixed Methods Study of Two Teacher Professional Development Approaches. *Interdisciplinary Journal of Problem Based Learning*, 5(2), 70-94.
- Diekema, A. R., Holliday, W., & **Leary, H.** (2011). Re-Framing Information Literacy: Problem-Based Learning as Informed Learning. *Library & Information Science Research*, 33(4), 261-268.
- Diekema, A. R., **Leary, H.**, Haderlie, S, & Walters, C. (2011). Teaching Use of Digital Primary Sources for K12 Settings. *D-Lib Magazine*, 17(3/4).
- Walker, A. & **Leary, H.** (2009). A Problem Based Learning Meta-analysis: Differences Across Problem Types, Implementation Types, Disciplines, and Assessment Levels. *Interdisciplinary Journal of Problem Based Learning*, 3(1), 6-28.
- Recker, M., Walker, A., Giersch, S., Mao, X., Halioris, S., Palmer, B., Johnson, D., **Leary, H.**, &

Robertshaw, M.B. (2007). A Study of Teachers' Use of Online Learning Resources to Design Classroom Activities. *New Review of Hypermedia and Multimedia*, 13(2), 117-134.

Refereed Conference Proceedings

- Leary, H.**, Lee, V.R., & Recker, M. (2014). More Than Just Plain Old Technology Adoption: Understanding Variations in Teachers' Use of an Online Planning Tool. In J. L. Polman, E. A. Kyza, K. O'Neill, I. Tabak, W. R. Penuel, A. S. Jurow, K. O'Connor, T. Lee, & L. D'Amico (Eds.), *Learning and becoming in practice: The International Conference of the Learning Sciences (ICLS) 2014, Volume 1* (pp. 110–117). Boulder, CO: International Society of the Learning Sciences.
- Johnson, R., Severance, S., **Leary, H.**, & Miller, S. (2014). Mathematical tasks as boundary objects in design-based implementation research. In J. L. Polman, E. A. Kyza, K. O'Neill, I. Tabak, W. R. Penuel, A. S. Jurow, K. O'Connor, T. Lee, & L. D'Amico (Eds.), *Learning and becoming in practice: The International Conference of the Learning Sciences (ICLS) 2014, Volume 2* (pp. 1127–1131). Boulder, CO: International Society of the Learning Sciences.
- Severance, S., **Leary, H.**, & Johnson, R. (2014). Tensions in a multi-tiered research-practice partnership. In J. L. Polman, E. A. Kyza, K. O'Neill, I. Tabak, W. R. Penuel, A. S. Jurow, K. O'Connor, T. Lee, & L. D'Amico (Eds.), *Learning and becoming in practice: The International Conference of the Learning Sciences (ICLS) 2014, Volume 2* (pp. 1171–1175). Boulder, CO: International Society of the Learning Sciences.
- Cole, M., Engeström, Y., Sannino, A., Gutiérrez, K., Jurow, S., Packer, M., Penuel, W. R., Johnson, R., Severance, S., **Leary, H.**, & Miller, S. (2014). Toward an argumentative grammar for socio-cultural/cultural-historical activity approaches to design research. In J. L. Polman, E. A. Kyza, K. O'Neill, I. Tabak, W. R. Penuel, A. S. Jurow, K. O'Connor, T. Lee, & L. D'Amico (Eds.), *Learning and becoming in practice: The International Conference of the Learning Sciences (ICLS) 2014, Volume 3* (pp. 1254–1263). Boulder, CO: International Society of the Learning Sciences.
- Leary, H.**, Recker, M., Walker, A., Wetzler, P., Sumner, T., & Martin, J. (2011). Automating Open Educational Resource Assessments: A Machine Learning Generalization Study. In proceedings of the *Joint Conference on Digital Libraries*¹, New York: ACM.
- Leary, H.**, Giersch, S., Walker, A., & Recker, M. (2009). Developing a Review Rubric for Learning Resources in Digital Libraries. In proceedings of the *Joint Conference on Digital Libraries*², New York: ACM.
- Giersch, S. **Leary, H.**, Palmer, B., & Recker, M. (2008). Developing a Review Process for Online Resources. In *proceedings of the Joint Conference on Digital Libraries*², New York: ACM.

Refereed Books and Book Chapters

- Walker, A., **Leary, H.**, Hmelo-Silver, C.E., & Ertmer, P.A. (Eds.). (2015). *Essential Readings in Problem-Based Learning: Exploring and Extending the Legacy of Howard S. Barrows*. West Lafayette, IN: Purdue University Press.
- Leary, H.**, Walker, A., Shelton, B. E., & Fitt, M. H. (2015). Exploring the Relationships Between Tutor Background, Tutor Training, and Student Learning: A Problem-Based Learning Meta-Analysis. In Walker, A., Leary, H., Hmelo-Silver, C.E., & Ertmer, P.A. (Eds.), *Essential Readings in Problem-Based Learning: Exploring and Extending the Legacy of Howard S. Barrows*. West Lafayette, IN: Purdue University Press.
- Walker, A., **Leary, H.**, Lefler, M. (2015). A Meta-Analysis of Problem-Based Learning: Examination of Education Levels, Disciplines, Assessment Levels, Problem Types, Implementation Types, and

¹ The Joint Conference on Digital Libraries proceedings are published in the ACM digital library, where they are considered final publications.

Reasoning Strategies. In Walker, A., Leary, H., Hmelo-Silver, C.E., & Ertmer, P.A. (Eds.), *Essential Readings in Problem-Based Learning: Exploring and Extending the Legacy of Howard S. Barrows*. West Lafayette, IN: Purdue University Press.

Leary, H., Giersch, S., Walker, A., & Recker, M. (2011). Developing and Using a Review Rubric to Assess Learning Resource Quality in Education Digital Libraries. In Kuo Hung Huang (Ed), *Digital Libraries Methods and Applications* (pp. 181-196). InTech.

Robertshaw, M.B., Walker, A., Recker, M., **Leary, H.** & Sellers, L. (2010). Experiences in the Field: The Evolution of a Teacher Technology Professional Development Model. In Myint Swe Khine & Issa M. Saleh (Eds.), *New science of learning: Cognition, computers, and collaboration in education* (pp. 307-324). New York: Springer.

Robertshaw, M.B., **Leary, H.**, Walker, A., Bloxham, K., & Recker, M. (2009). Reciprocal Mentoring "In the Wild": A Retrospective, Comparative Case Study of ICT Teacher Professional Development. In E. Stacey (Ed.) *Effective Blended Learning Practices: Evidence-Based Perspectives in ICT-Facilitated Education* (pp. 280-297). Melbourne: IGI Global Press.

Journal Columns

Leary, H. & Parker, P. (2011). Fair Use in Face-to-Face Teaching. *TechTrends*, 55(4), 16-18.

Leary, H. (2010). ECT Internship: Building Connections and Establishing Relationships. *TechTrends*, 54(5), 13.

Leary, H. & Parker, P. (2010). Author rights: Knowing is More than Half the Battle. *TechTrends*, 54(3), 23-24.

Manuscripts Under Review

Leary, H., Walker, A., Lefler, M. & Kuo, Y. Self-Directed Learning in Problem-Based Learning: A literature review.

Manuscripts in Preparation

Leary, H., Butcher K. R., & Devaul, H. Exploring the Relationship between ICT Usage and Science Teachers' Differentiation Practices, Technology Attitudes, and Pedagogical Approaches.

Leary, H., Devaul, H., & Sumner, T. Scenario-Guided Design Evaluation: A Structured Methodology for Engaging Distributed Teachers in Technology Design.

Leary, H., Shelton, B. E., & Walker, A. Rich Visual Media Meta-Analyses for Learning: An Approach at Meta-Synthesis.

Belland, B., Walker, A., & **Leary, H.** A Meta-analysis of Problem-based Learning Corrected for Attenuation and Accounting for Internal Threats.

Penuel, W. R., DeBarger, A. H., Boscardin, C. K., Moorthy, S., Beauvineasu, Y., Kennedy, C., **Leary, H.**, & Allison, K. Enhancing Teachers' Formative Assessment Classroom Practices in Earth Science: Improving learning with Contingent Pedagogies.

Conference Presentations and Workshops

Leary, H., Devaul, H., & Sumner, T. (2017, April). Engaging Geographically Distributed Teachers in Technology Design: The scenario-guided design evaluation methodology. Presentation for the annual conference of the American Educational Research Association, San Antonio, TX.

Doyle, R., Lockee, B., Donaldson, A., Persichette, K., & **Leary, H.** (2016, October). Paralleling Women as President of AECT with Changes in U.S. Laws and Social Norms. Presentation at the Association for Educational Communications and Technology international convention, Las Vegas, NV.

Affolter, R., Bailey, D., Bell, T., McGill, T., **Leary, H.**, Manz, E., Michaels, S., Moon, J., Novak, M., Park, A., Penuel, W. R., Reiser, B. J., Severance, S., & Wilson, S. (2016, April). Models, Strategies, and Research on PD for Science Educators: Responding to the Framework and NGSS. Symposium for the 2016 annual conference of the National Association for Research in Science Teaching,

Baltimore, MD.

- Leary, H.**, Severance, S., Penuel, W. R., Quigley, D., Sumner, T., & Devaul, H. (2016, April). Supporting the Design and Implementation of a Digital Science Curriculum. Paper presentation for the annual conference of the American Educational Research Association, Washington, D.C.
- Severance, S., **Leary, H.**, Johnson, R., & Quigley, D. (2016, April). Developing Teacher Expertise in the Next Generation Science Standards through Curricular Co-Design. Structured poster session at the annual conference of the American Educational Research Association, Washington, D.C.
- Leary, H.** & Kopcha, T. J. (2015, November). A Case Study of the Nature and Role of Boundary Objects in teacher Professional Development. Presentation at the Association for Educational Communications and Technology international convention, Indianapolis, IN.
- Banas, J., Aslan, S., Blatt, L., Hale, P., Kopcha T. J., **Leary, H.**, Mete, S., Miller, C., & Persichitte, K. (2015, November). Building Bridges: Cooperative Learning and Shared Research Between Academia and Our Schools. Presentation at the Association for Educational Communications and Technology international convention, Indianapolis, IN.
- Leary, H.**, Sumner, T., Ringstaff, C., Brown, D., & Devaul, H. (2015, April). Cyber Professional Development in Inquiry Science: An Iterative Evaluation Strategy. Roundtable presentation at the American Educational Research Association annual conference, Chicago, IL.
- Severance, S., Penuel, W. R., **Leary, H.**, Reiser, B. J., Kincaid, P., Miller, J., Yacoubian, J., Martin, C. (2015, April). Curriculum Co-Design as a Strategy for Supporting Equitable Implementation of Next Generation Science Standards. Symposium presentation at the American Educational Research Association annual conference, Chicago, IL.
- Kincaid, P., Penuel, W. R., Severance, S., **Leary, H.**, & Miller, J. (2015, March). *iHub: A Research-practice partnership to design new NGSS curriculum* Workshop presented at the National Science Education Leadership Association Meeting, Chicago, IL.
- Leary, H.**, Sumner, T., Penuel, W. R., Johnson, R., Severance, S., Devaul, H., & Dibie, O. (2014, November). Building Teachers' Design Capacity: Curriculum, Adaptations, Implementation. Presentation at the Association for Educational Communications and Technology international convention, Jacksonville, FL.
- Leary, H.**, Devaul, H., & Sumner, T. (2014, November). Supporting Levels of Change and Understanding: Assessing a Cyber Professional Development Environment. Presentation at the Association for Educational Communications and Technology international convention, Jacksonville, FL.
- Johnson, R., **Leary, H.**, Severance, S., Penuel, W.R., Sumner, T., Devaul, H., Dibie, O. (2014, September). Capacity for Customization: Algebra Teachers, Curriculum Design, and the Common Core. Poster presentation at 6th annual symposium on STEM education, Boulder, CO.
- Zahm, B., Demery, R., Sumner, T., & **Leary, H.** (2014, August). Overcoming Obstacles of Affordability, Flexibility, and Effectiveness to Scaling-Up with a Cyberlearning Professional-Development Model. Presentation at the DRK-12 Annual PI Meeting, Washington, D.C.
- Ristvey, J., Murphy, T., & **Leary, H.** (2014, June). UCAR Virtual Learning and Curriculum Customization: Fostering Knowledge of Earth System Science. Workshop at the 58th International Council on Education for Teaching World Assembly, Oshawa, Ontario, Canada.
- Leary, H.**, Lee, V. R., & Recker, M. (2014, April). A "Use Diffusion" Perspective on Teachers' Adoption and Use of a Social Teaching Platform. Paper presentation at the *American Educational Research Association annual conference*, Philadelphia, PA.
- Johnson, R., **Leary, H.**, Penuel, W. R. (2014, April). Supporting Common Core-Driven Curriculum Adaptations for High School Algebra. Poster presentation at the *American Educational Research Association annual conference*, Philadelphia, PA.
- Severance, S., Penuel, W. R., & **Leary, H.** (2014, April). Negotiation of Joint Work in a Research-Practice Partnership. Roundtable presentation *American Educational Research Association annual conference*, Philadelphia, PA.
- Ye, L., Walker, A., **Leary, H.**, Recker, M., Yuan, M. (2014, April). Expanding Approaches for

- Understanding Impact: Integrating Technology, Curriculum, and Online Resources in Science Education. Paper presentation at the *American Educational Research Association annual conference*, Philadelphia, PA.
- Kincaid, P. & **Leary, H.** (2014, April). Collaborative Tools for Customizing STEM Instruction. Presentation at the National Science Teachers Association Conference on Science Education, Boston, MA.
- Leary, H.** & Kincaid, P. (2013, December). Customizing STEM Instruction. Presentation at the National Science Teachers Association Area Conference on Science Education, Denver, CO.
- Leary, H.**, Sumner, T., & Devaul, H. (2013, November). A Model for Delivering Open Educational Resources to K12 Teachers: Integration and Use in Planning and Practice. Presentation at the annual Open Education Conference, Park City, UT.
- Leary, H.**, Davis, L., & Sumner, T. (2013, October). Understanding Instructional Coaching: Exploring a Model for Online Coaching. Presentation at the Association for Educational Communications and Technology international convention, Anaheim, CA.
- Marlino, M. & **Leary, H.** (2013, October). It's All in the Mix: Customizing curricula and open educational resources for STEM education². Presentation at the Association for Educational Communications and Technology international convention, Anaheim, CA.
- Leary, H.**, Lockee, B., Miller, T. W., Smaldino, S., Spector, J. M., & White, C. (2013, October). Leadership, History, and the Future: Voices of AECT Past-Presidents. Presentation at the Association for Educational Communications and Technology international convention, Anaheim, CA.
- Leary, H.**, Parker, P., & Luetkehans, L. M. (2013, October). Educational Resources, K12 Teachers, and Copyright. Presentation at the Association for Educational Communications and Technology international convention, Anaheim, CA.
- Sellers, L., **Leary, H.**, Recker, M., Lee, V., & Sumner, T. (2013, October). A Tale of Two Teachers: An exploratory study of internet resources use. Presentation at the Association for Educational Communications and Technology international convention, Anaheim, CA.
- Parker, P., & **Leary, H.** (2013, October). Copyright Enlightenment for MOOCs and OERs. Presentation at the Association for Educational Communications and Technology international convention, Anaheim, CA.
- Leary, H.**, Severance, S., Johnson, R., Penuel, W. R., Sumner, T., Devaul, H., Dibie, O., & Danesh, S. (2013, September). Customizing Curriculum and Digital Resources for STEM Educators. Poster presented at the 5th Annual Symposium on STEM Education, Boulder, CO.
- Diekema, A., Haderlie, S., Holliday, W., Lundstrom, K., & **Leary, H.** (2013, May). The Next Information Literacy Challenge: Partnering to Promote Deeper Engagement with Information and Better Writing. Presentation at the Utah Library Association annual conference, Provo, Ut.
- Lee, V. R., **Leary, H.**, Sellers, L., Recker, M., & Olsen, W. (April, 2013). Examining the Role of District Science Coordinators in the Implementation of a Web-based Lesson-planning Tool for Teachers. Paper presentation at the American Educational Research Association annual conference, San Francisco, CA.
- Sellers, L., **Leary, H.**, Olsen, W., Lee, V. R., Recker, M., & Sumner, T. (2013, April). Understanding Teacher Use of an Online Curriculum Planning Tool. Poster presented at the American Educational Research Association annual conference, San Francisco, CA.
- Ye, L., Walker, A., Recker, M., **Leary, H.**, Devaul, H., Butcher, K., & Sumner, T. (2013, April). Integrating Technology, Curriculum, and Online Resources: A Multilevel Model Study of Impacts on Science Teachers and Students. Poster presented at the American Educational Research Association annual conference, San Francisco, CA.
- Leary, H.**, Walker, A., & Shelton, B. E. (2012, November). A Meta-Analysis of Self-Directed Learning in Problem-Based Learning. Presentation at the Association for Educational Communications and

² Presidential session

- Technology international convention, Louisville, KY.
- Leary, H.**, Sellers, L., & Lee, V. R. (2012, November). Understanding Teacher Perspectives and Practices: Experiences from the Curriculum Customization Service. Presentation at the Association for Educational Communications and Technology international convention, Louisville, KY.
- Parker, P. & **Leary, H.** (2012, November). LMS-less Open Educational Courses³. Presentation at the Association for Educational Communications and Technology international convention, Louisville, KY.
- Brush, T., Glazewski, K., Belland, B., Ottenbreit-Leftwich, A., & **Leary, H.** (2012, October). Problem-based Learning and Teacher Education. Panel presentation at Association for Educational Communications and Technology international convention, Louisville, KY.
- Leary, H.**, Sumner, T., & Devaul, H. (2012, October). Inquiry Hub: Customizing Curriculum and Digital Resources for STEM Education. Poster presented at the 4th Annual Symposium on STEM Education, Boulder, CO.
- Leary, H.**, Walker, A., Shelton, & B. E. (2012, April). Self-Directed Learning in Problem-Based Learning: A meta-analysis. Presentation at the American Educational Research Association, Vancouver, Canada.
- Belland, B., Walker, A., Olsen, M. W., & **Leary, H.** (2012, April). Impact of Scaffolding Characteristics and Study Quality on Learner Outcomes in STEM Education: A meta-analysis. Presentation at the American Educational Research Association, Vancouver, Canada.
- Walker, A., Recker, M., Ye, L., Sellers, L., **Leary, H.**, & Robertshaw, M. B. (2012, April). Comparing Technology-Related Teacher Professional Development Designs: A multilevel study of teacher and student impacts. Presentation at the American Educational Research Association, Vancouver, Canada.
- Leary, H.** & Parker, P. (2011, November). Fair Use, the TEACH Act and Open Educational Resources for Your Classroom. Presentation at the Association for Educational Communications and Technology international convention, Jacksonville, FL.
- Sellers, L. & **Leary, H.** (2011, November). School Librarians and Technology: Integrating Online Resources for Teaching. Presentation at the Association for Educational Communications and Technology international convention, Jacksonville, FL.
- Walker, A., Recker, M., Robertshaw, M. B., Olsen, J., & Sellers, L., **Leary, H.**, Kuo, Y., Ye, L. (2011, April). Designing for Problem Based Learning: A Comparative Study of Technology Professional Development. Paper presentation at the American Educational Research Association, New Orleans, LA.
- Recker, M., **Leary, H.**, Walker, A., Diekema, A. R., Wetzler, P., Sumner, & T., Martin, J. (2011, April). Modeling Teacher Ratings of Online Resources: A Human-Machine Approach to Quality. Paper presentation at the American Educational Research Association, New Orleans, LA.
- Leary, H.** (2010, November). A Sustainability Model for Populating DigitalCommons@USU. Innovation Fair presentation at SPARC Digital Repositories, Baltimore, MD.
- Correia, A., Kim, Y., Lockee, B., Miller, P., Smaldino, S., & Young, P.⁴ (2010, October). Empowering Women Leadership in the Field of Educational Technology. Presidential presentation at the Association for Educational Communications and Technology international convention, Anaheim, CA.
- Diekema, A. R., Holliday, W., & **Leary, H.** (2010, October). Scaffolding Information Literacy with Problem-Based Learning in an Asynchronous Online Environment. Paper presentation at the Association for Educational Communications and Technology international convention, Anaheim, CA.
- Leary, H.**, Shelton, B. E., & Walker, A. (2010, May). Rich Visual Media Meta-Analyses for Learning: An

³ Presidential session

⁴ Organized and facilitated by 2009 ECT Interns: Evrim Baran, Abigail Hawkins, Nari Kim, **Heather Leary**, Eunjung Oh

- Approach at Meta-Synthesis. Roundtable presentation at the American Educational Research Association annual meeting, Denver, CO.
- Belland, B., Walker, A., **Leary, H.**, Kuo, Y. & Can, G. (2010, May). A Meta-Analysis of Problem-Based Learning Corrected for Attenuation, and Accounting for Internal Threats. Paper presentation at the American Educational Research Association annual meeting, Denver, CO.
- Walker, A., Recker, M., **Leary, H.**, & Robertshaw, M. B. (2010, May). Incorporating Technology and Problem-Based Learning: Professional Development for K-12 Teachers. Paper presentation at the American Educational Research Association annual meeting, Denver, CO.
- Diekema, A. R., Haderlie, S., **Leary, H.**, & Walters, C. (2010, May). Tools for Using and Organizing Online Resources to Enhance Reference and Instruction. Presentation at the Utah Library Association annual conference, St. George, UT.
- Leary, H.**, Williams, R., Dunshee, P., Elinky, M., Rollins, K., & Clement, S. (2010, May). Conferences, Exhibits, Open Houses, Oh My! Panel presentation at the Utah Library Association annual conference, St. George, UT.
- Leary, H.**, Walker, A., Shelton, B. E., & Fitt, M. H. (2009, October). Expert Versus Novice Tutors: Impacts on Student Outcomes in Problem Based Learning. Paper presentation at the Association for Educational Communications and Technology international convention, Louisville, KY.
- Leary, H.**, Fitt, M. H., & Wiley, D. (2009, October). Web 2.0 and the Open Education Movement: Transforming Learning in Higher Education. Paper presentation at the Association for Educational Communications and Technology international convention, Louisville, KY.
- Robertshaw, M. B., Walker, A., & **Leary, H.** (2009, October). Putting the School Librarian Back in the Digital Library. Presentation at the Library & Information Technology Association National Forum, Salt Lake City, UT.
- Leary, H.**, Shelton, B., & Jensen, M. (2009, October). Beyond Research: OpenCourseWare in the Institutional Repository. Presentation at the Library & Information Technology Association National Forum, Salt Lake City, UT.
- Walters, C., **Leary, H.**, Diekema, A., & Haderlie, S. (2009, October). Using Digital Primary Sources for Teaching K-12. Presentation at the Utah Educational Association conference, Murray, UT.
- Leary, H.** & Shelton, B. (2009, August). Integrating an OpenCourseWare and Institutional Repository. Presentation at the annual Open Education Conference, Vancouver, BC.
- Leary, H.**, Walker, A., Fitt, M. H., & Shelton, B.E. (2009, April). Expert Versus Novice Tutors: Impacts on Students Outcomes in Problem Based Learning⁵. Roundtable presentation at the American Educational Research Association annual meeting, San Diego, CA.
- Fitt, M. H., Walker, A., & **Leary, H.** (2009, April). Assessing the Quality of Doctoral Dissertation Literature Reviews in Instructional Technology. Paper presentation at the American Educational Research Association annual meeting, San Diego, CA.
- Leary, H.**, Holliday, W., & Diekema, A. (2009, April). Teaching Information Literacy with Authentic Problems: Creating and Using an Online Module. Presentation at the Utah Library Association annual conference, Sandy, UT.
- Alvord, T., **Leary, H.**, & Williams, R. (2009, April). FolkBistro: USU's Folklore Podcasts. Presentation at the Utah Library Association annual conference, Sandy, UT.
- Haderlie, S., Walters, C., **Leary, H.**, & Diekema, A. (2009, March). Using Digital Primary Sources to Enhance Teaching and Learning. Presentation at the Utah Educational Library Media Association conference, Ogden, Utah.
- Robertshaw, M. B., **Leary, H.**, & Bloxham, K. (2008, November). Reciprocal Mentoring and Technological Pedagogical Content Knowledge: An Emerging Model of Technology Professional Development for K-12 Teachers. Presentation at the Association for Educational Communication and Technology international convention, Orlando, FL.

⁵ Winning paper of the 2009 AERA Sig ATL/LS Best Student Paper

- Leary, H.** & Wiley, D. (2008, September). What Web 2.0 can Teach the Open Education Movement. Presentation at the annual Open Education Conference, Logan, Utah.
- Robertshaw, M.B., Bloxham, K., Walker, A., **Leary, H.**, & Recker, M. (2008, September). Teacher as Designers of Online and Open Educational Resources: An empirical examination of professional development for re-use. Presentation at the annual Open Education Conference, Logan, Utah.
- Giersch, S., **Leary, H.**, Palmer, B., & Recker, M. (2008, September). Supporting Meaningful Learning with Online Resources: Developing a Review Process. Presentation at the annual Open Education Conference, Logan, Utah.
- Leary, H.**, Robertshaw, M.B., Walker, A., & Bloxham, K. (2008, April/May). Crossing Paths to Connect Educators and Learners with Online Resources. Presentation at the Utah Library Association/Mountain Plains Library Association conference, Salt Lake City, UT.
- Williams, R., Walters, C., & **Leary, H.** (2008, April/May). Sound Collaboration: Creating an Oral History Digital Collection from Scratch. Presentation at the Utah Library Association/Mountain Plains Library Association conference, Salt Lake City, UT.
- Leary, H.**, Robertshaw, M.B., & Bloxham, K. (2008, Feb/March). The Instructional Architect: A Blueprint for Connecting Teachers and Students to Online Resources. Presentation at the Utah Coalition for Educational Technology annual conference, Salt Lake City, UT.
- Walker, A. & **Leary, H.** (2008, March). A Problem-based Learning Meta-analysis: Differences Across Problem Types, Implementation Types, Disciplines, and Educational Levels. Paper presentation at the American Educational and Research Association annual conference, New York, NY.
- Robertshaw, M. B., **Leary, H.**, Gardner, J., & Bentley, J. (2007, November). Listening to the Librarians: Lessons from a 5-year Program Evaluation. Presentation at the American Evaluation Association conference, Baltimore, MD.
- Walker, A. & **Leary, H.** (2007, October). Problem-based learning: A Meta-analytic Review of Problem and Implementation Types Across Disciplines and Educational Levels. Paper presentation at the Association for Educational Communications and Technology international convention, Anaheim, CA.
- Johnson, D., Walker, A., **Leary, H.**, & Robertshaw, B. (2007, March). Connecting Teachers and Learners with Online Resources. Presentation at the Utah Coalition for Educational Technology annual conference, Murray, UT.
- Leary, H.** (2007, April). Lessons Learned: Coding a Meta-analytic Review of Problem Based Learning Literature. Annual Graduate Research Symposium, Utah State University, Logan, UT.

Grants

Funded Contracts/Grants

*Strategies: Collaborative Research: Engineering Experiences: Pathways for Underserved Youth, Innovative Technology Experiences for Students and Teachers (ITEST), National Science Foundation, Tamara Sumner (PI), **Heather Leary (co-PI)**, with collaborators John Ristvey, Holly Devaul, Randy Russell, Catherine Williamson, \$286,117 (CU portion), 2015-2018.*

*Inquiry Hub: Supporting Common Core and Next Generation Science Standards Curriculum Adaptations and Development, Undergraduate Research Opportunity Grant (UROP), University of Colorado Boulder, **Heather Leary (PI)**, \$3,000, 2015.*

*Teaching with Primary Sources, Regional Teaching With Primary Sources, Library of Congress, \$10,000, Cheryl Walters (PI), **Heather Leary (co-PI)**, Anne Diekema (co-PI), Sheri Haderlie (co-PI), 2009.*

*Map Printing for Patrons, Technology, Library Services and Technology Act, John Walters (PI), **Heather Leary (co-PI)**, \$7,500, 2004.*

Proposed Contracts/Grants

Improving K-12 Problem-Based Learning: The Intersection of Research and Practice, Research Conference, American Educational Research Association, **Heather Leary (PI/organizer)**, with collaborators Peg Ertmer, Mary English, Jill Bradley-Levine, \$34,934, 2015.

ALL for One: The Science Adaptable Learning Lab, STEM-C Partnerships: MSP, National Science Foundation, Tamara Sumner (PI), Erin Furtak (co-PI), Patricia Kincaid (co-PI), Kathy Perkins (co-PI), Josh Allen (co-PI), Rajul Pandya (Senior Personnel), **Heather Leary (Senior Personnel)**, Emily Moore (Senior Personnel), Donna Caccamise (Senior Personnel), William Penuel (Senior Personnel), John Weatherley (Senior Personnel), Michael Klymkowsky (Senior Personnel), with collaborators: Mimi Recker, Victor Lee, Andrew Walker, \$7,498,990, 2014-2018.

DIP: Collaborative Research: Opera: Open Educational Resource Assessments, Cyberlearning, National Science Foundation, Tamara Sumner (PI), **Heather Leary (co-PI)**, Jordan Boyd-Graber (co-PI), with collaborators: Kirsten Butcher, Mimi Recker, Holly Devaul, \$699,438 (CU portion), 2015-2018.

Informed Learning: Using Authentic STEM Problems to Learn Science Practices and Information Synthesis, American Honda Foundation, **Heather Leary (PI)**, with collaborators: Anne Diekema and Robert Payo, \$74,973, 2014-2015.

Collaborative Research: Theorizing Big Data: From Teachers' Technology Use to Student Learning, EHR Core (ECR), National Science Foundation, Tamara Sumner (PI), **Heather Leary (co-PI)**, Tomasz Miaskiewicz (co-PI), with collaborators: Mimi Recker, Victor Lee, Keith Maull, Mike Wright, \$606,982 (CU portion), 2014-2016.

Creating 21st Century Learners: An online module to stimulate active learning, critical thinking, and knowledge building, National Leadership Grant, Institute of Museum and Library Services, Anne Diekema (PI) and **Heather Leary (co-PI)**, \$48,321 (CU portion), 2012-2014.

Teaching**Courses Taught**

IP&T 653: Introduction to Qualitative Research

IP&T 286: Technology Integration for Secondary Teachers

Educator Professional Development Workshops

Inquiry Hub. Blended learning teacher professional development to support understanding of the Common Core State Standards for Mathematics (CCSS-M) and the Next Generation Science Standards (NGSS). High school Algebra teachers gained a better understanding of high quality mathematical tasks and the CCSS-M through task ratings on cognitive demand, language, and technology as well as authoring adaptations to math tasks and implementing them in their classrooms. High school Biology teachers gained a better understanding of the NGSS and how to implement them through a co-design process writing new biology units and implementing them in their classrooms. 2012-2015

The Curriculum Customization Service. Teacher professional development face-to-face and online workshops focused on the Curriculum Customization Service, an online tool to assist middle and high school Earth and Physical science teachers and high school Algebra teachers to customize their curriculum using publisher resources, online resources, and shared resources from other teachers. For six school districts: Denver Public Schools (CO), St. Vrain Valley School District (CO), Mapleton Public Schools (CO), Douglas County School District (CO), Davis County School District (UT), and Clark County

School District (NV). Workshops were designed and delivered by H. Devaul and **H. Leary** in fall 2011, 2012, 2013, and 2014.

Introduction to the Instructional Architect. Teacher professional development workshop focusing on the Instructional Architect, inquiry based learning, and the evaluation of online educational resources for the integration of online resources in the classroom. Davis County School District, Farmington, UT. Workshops were designed and delivered by M. Recker, A. Walker, **H. Leary**, L. Sellers, B. Robertshaw, and D. Johnson in fall 2010 (Davis County School District), spring 2010 (Cache County School District), fall 2009 (Cache County School District), spring 2009 (Cache County School District), fall 2008 (Cache County School District), spring 2007 (Edith Bowen Laboratory School).

Teaching with Primary Sources. Teacher and school library media specialist professional development workshop focusing on primary sources in the Library of Congress, Mountain West Digital Library and Utah State University Digital Library; tool for archiving and presenting primary sources in the classroom. Utah State University, Logan, UT. Workshop was designed and delivered by C. Walkers, **H. Leary**, A. Diekema, and S. Haderlie in summer 2009.

A Review of the Instructional Architect. School library media specialists review and introduction to advanced features of the Instructional Architect. Utah State University, Logan, UT. Workshop was designed and delivered by K. Bloxham and **H. Leary** in summer 2008.

Introduction to software programs. Series of workshops for academic librarians on the basics of Photoshop Elements, Word, Excel, and PowerPoint. The intent was to prepare them for helping patrons use the programs in a newly created Information Commons. Utah State University, Logan, UT. Workshops were designed and delivered by **H. Leary** in spring 2005.

Invited Lectures

- Leary, H.** (Fall 2010). *National & Local Digital Libraries and an Online Technology Tool for Teaching.* Presented a lecture to graduate students in INST 5000/6060 at Utah State University on various digital libraries, copyright considerations, and the Instructional Architect.
- Leary, H. & Walters, C.** (Spring 2009). *National & Local Digital Libraries and an Online Technology Tool for Teaching.* Presented a lecture to graduate students in INST 5030/6030 at Utah State University on the Library of Congress, Mountain West, and Utah State digital libraries along with an introduction to the Instructional Architect.
- Leary, H.** (Fall 2008). *National & Local Digital Libraries and an Online Technology Tool for Teaching.* Presented a lecture to graduate students in INST 5000/6060 at Utah State University on the Library of Congress, Mountain West, and Utah State digital libraries along with an introduction to the Instructional Architect.
- Leary, H.** (Fall 2007). *The Instructional Architect.* Presented a lecture to graduate students in INST 5000/6060 at Utah State University on the Instructional Architect.

Instructional Materials Developed

- Recker, M., Walker, A., **Leary, H.**, Sellers, L., Ye, Lei, & Robertshaw, M. B. (2011). Redesign of the Instructional Architect online course module: Connecting People with Online Resources, PBL and Technology only. The course was created as html pages for easy importing into Blackboard and reuse of the material.
- Leary, H.**, Holliday, W., & Diekema, A. (2009). *Information Literacy.* Design and development of an information literacy course module for students at Utah State University. The course was created as html pages for easy importing into Blackboard and reuse of the material.

- Leary, H.,** Bloxham, K., & Recker, M. (2009). *Instructional Architect online course module*. Redesign of the Instructional Architect online course module. The course was created as html pages for easy importing into Blackboard and reuse of the material.
- Leary, H.,** Giersch, S., & Recker, M. (2008). *The Instructional Architect review rubric*. Design and development of an evaluation rubric for online educational resources, specifically Instructional Architect projects. It was created for classroom teachers to use to inform their designing and evaluation of IA projects.
- Recker, M., Walker, A., Johnson, D., Robertshaw, M. B., **Leary, H.,** Bloxham, K., & Sellers, L. (2007-2010). *The Instructional Architect*. Design and development of progressive professional development workshop materials for teaching the Instructional Architect.
- Leary, H.** (2005). *Introduction to software programs*. Designed and developed materials for a series of workshops for academic librarians on Photoshop Elements, Word, Excel, and PowerPoint. Courses were delivered face-to-face with supplemental Camtasia videos.

Service

Journal Advisory Board Member

- 2015-2018, Interdisciplinary Journal of Problem-Based Learning

Journal Reviewing

- 2012-Present, Educational Technology Research & Development
- 2011-Present, Interdisciplinary Journal of Problem-Based Learning
- 2015 Guest reviewer, Computers and Education
- 2013 Guest co-editor, Special issue: Interdisciplinary Journal of Problem-Based Learning
- 2013 Guest reviewer, Journal of Educational Psychology
- 2013 Guest reviewer, Journal of Online Learning and Teaching
- 2012 Guest reviewer, Educational Researcher
- 2010 Guest reviewer, American Educational Research Journal
- 2009 Guest reviewer, Journal of the Learning Sciences

Grant Proposal Reviewing

- 2015 National Science Foundation: Science, Technology, Engineering, Mathematics + Computing Partnerships (STEM+C)

Conference Proposal Reviewing

- 2017 Computer Supported Collaborative Learning
- 2009, 2013-2016 American Educational Research Association
- 2012, 2014, 2016 International Conference of the Learning Sciences
- 2012-2016 Association for Educational Communications and Technology

Conference Awards Reviewing

- 2014 Association for Educational Communications and Technology, Early Career Symposium
- 2012 Association for Educational Communications and Technology, Division of Distance Learning Crystal Award
- 2012 Association for Educational Communications and Technology, ECT Internship

Utah State University

Graduate Student Associations

- **Communications Officer**, Instructional Technology Student Association, 2009-2010

- **Department Representative**, Instructional Technology and Learning Sciences to the Graduate Student Senate, 2007-2010
- **Secretary**, Instructional Technology Student Association, 2007-2008

Committee Memberships

- **Copyright Committee**, Merrill-Cazier Library, 2009-2011
- **Institutional Repository Advisory Committee**, Chair, Merrill-Cazier Library, 2008-2011
- **Staff Development Committee**, Merrill-Cazier Library, 2004-2009
- **Digital Library Advisory Committee**, Merrill-Cazier Library, 2004-2009
- **Student representative faculty search committee**, Instructional Technology and Learning Sciences, 2008
- **Graphic designer search committee**, Faculty Assistance Center for Teaching, 2005

Conferences

- **Facilitator**, Association for Educational Communications and Technology Conference, Anaheim, CA, 2010
- **Volunteer**, Utah Library Association Conference, St. George, Utah, 2010
- **Organizer**, Institutional Repositories: Disseminating, Promoting, and Preserving Scholarship conference, September 20, 2009, Utah State University, Logan, Utah, 2009
- **Volunteer**, Open Education Conference, Logan, Utah, 2006-2008

External Leadership Positions

- **Chair**, History and Archives Committee, Association for Educational Communications and Technology, 2015-Present
- **Member**, Leadership Development Committee, Association for Educational Communications and Technology, 2012-Present
- **Member**, History and Archives Committee, Association for Educational Communications and Technology, 2009-2015
- **Member**, Intellectual Property Committee, Association for Educational Communications and Technology, 2009-2014
- **Liaison**, Utah State University Institutional Repository liaison with the Utah Academic Library Consortium, 2009-2011

Professional Memberships

- American Educational Research Association (AERA)
- Association for Educational Communications and Technology (AECT)
- International Society of the Learning Sciences (ISLS)
- National Science Teachers Association (NSTA)

Honor Society Memberships

- Golden Key National Honor Society, 2008-Present
- Phi Kappa Phi, 2005-Present