

Dr. Scott McDonald

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Professional Experience

Professor, Science Education

Pennsylvania State University – 2020 to Present

Associate Professor, Science Education

Pennsylvania State University – 2010 to 2020

Director, Krause Studios for Innovation

Pennsylvania State University – 2009 to Present

Visiting Professor

Martin-Luther-University Halle-Wittenberg, Germany – 2014

Fulbright Scholar in Science Education

Dublin City University, Dublin, Ireland

Center for the Advancement of Science & Mathematics Teaching and Learning – 2012

Assistant Professor, Science Education

Pennsylvania State University – 2004 to 2010

Education

Ph.D., Learning Technologies in Science Education

The University of Michigan. 2004

M.S., Science Education

The University of Michigan. 2001

M.A.T., Masters and Certification (MAC) Program

The University of Michigan. 1992

B.S., Physics

The Colorado College. Colorado Springs, CO. 1989

Refereed Journal Articles

* indicates co-author was current or former student or supervised post-doctoral scholar

*Wray, K., *McCausland, J.D., **McDonald, S.**, Pallant, A., Lee, H-S. (In press). Using summary tables to support students' use data-based models to explain science phenomena. *Science Scope*.

Gray, R., **McDonald, S.**, & Stroupe, D. (2021). What you find depends on how you see: Examining asset and deficit perspectives of preservice science teachers' knowledge and learning. *Studies in Science Education*. [All authors take equal credit for manuscript.]

*Tietjen, P., *Özkan-Bekiroglu, S., *Choi, K., *Rook, M. M., & **McDonald, S.** (2021). Three Sociomaterial Framings for Analysing Material and Spatial Affordances in Future Learning Spaces. *Pedagogy, Culture and Society*.

Pallant, A., **McDonald, S.**, & Lee, H-S., (2021). Shifting plates, shifting minds: Plate tectonics models designed for classrooms. *Earth Scientist*.

*Epler-Ruths, C., **McDonald, S.**, Pallant, A., & Lee, H-S. (2020). Focus on the Notice - Evidence of spatial skills effect on middle school learning from a computer simulation. *Cognitive Research: Principles and Implications*.

*Weidler-Lewis, J., *Wooten, M., & **McDonald, S.** (2020). The Ontological Construction of Technology and Behavior through Practice. *Human Behavior and Emerging Technologies*. 2(4), 377-386. <http://dx.doi.org/10.1002/hbe2.213>.

*Rook, M. M., *Özkan-Bekiroglu, S., *Tietjen, P., *Choi, K., & **McDonald, S. P.** (2020). Forming and sustaining a learning community and developing implicit collective goals in an open future learning space. *Journal of Learning Spaces*, 9(1), 19-30.

Plummer, J. D., Palma, C., *Flarend, A., *Rubin, K., *Ong, Y. S., *Botzer, B., **McDonald, S.** and Furman, T. (2020). Evaluating a learning progression for the solar system: Progress along gravity and dynamical properties dimensions. *Science Education*. 104(3), 530-554. <https://doi.org/10.1002/sce.21567>

Thompson, J., Hagenauh, S., **McDonald, S.**, & *Barchenger, C. (2019). Improvement cycles and the co-evolution of scientific modeling tools and practices in job-embedded professional learning. *Science Education*. 106(3), 1423-1455. <https://doi.org/10.1002/sce.21547>.

McDonald, S., *Bateman, K., *Gall, H., *Tanis-Ozcelik, A., *Webb, A., & Furman, T. (2019). Mapping the increasing sophistication of students' understandings of plate tectonics: A learning progressions approach. *Journal of Geoscience Education*, 67(1), 83-96, <http://doi.org/10.1080/10899995.2018.1550972>.

McDonald, S., *Grimes, P., & van Kampen, P. (2018). A workshop approach to developing the professional pedagogical vision of Irish secondary pre-service science teachers. *Journal of Science Teacher Education*. 30(5), 434-460. <https://doi.org/10.1080/1046560X.2019.1583033>.

*Grimes, P., **McDonald, S.**, & van Kampen, P. (2018). "We're getting somewhere": Development and implementation of a framework for the analysis of productive science discourse. *Science Education*, 103(1), 5-36. <http://doi.org/10.1002/sce.21485>. [Note: Top downloaded paper for *Science Education* for 2018-19.]

*Bateman, K., **McDonald, S.**, *Gall, H., *Tanis-Ozcelik, A., *Webb, A. & Furman, T. (2018). Getting beneath the surface: Modeling the mechanism of plate tectonics. *Science Scope*, 42(2), 45-54.

*Criswell, B., Rushton, G., **McDonald, S.**, & *Gul, T. (2017). A clearer vision: Creating and evolving a model to support the development of science teacher leaders. *Research in Science Education*, 48(4), 811-837. <http://doi.org/10.1007/s11165-016-9588-9>.

McDonald, S. (2016). The transparent and the invisible in professional pedagogical vision for science teaching. *School Science and Mathematics*, 116(2), 95-103. <https://doi.org/10.1111/ssm.12156>.

Plummer, J. D., Palma, C., *Flarend, A., *Rubin, K., *Ong, Y. S., *Botzer, B., **McDonald, S.**, & Furman, T. (2015). Development of a learning progression for the formation of the solar system. *International Journal of Science Education*, 37(9), 1381–1401. <http://doi.org/10.1080/09500693.2015.1036386>.

*Rook, M., *Choi, K., & **McDonald, S.** (2015). Learning theory expertise in the design of learning spaces: Who needs a seat at the table? *Journal of Learning Spaces*, 4(1), 1-13. <http://libjournal.uncg.edu/jls/article/view/1046>.

*Emig, B., **McDonald, S.**, Zembal-Saul, C., & Strauss, S. G. (2014). Inviting argument by analogy: Analogical-mapping-based comparison activities as a scaffold for small-group argumentation. *Science Education*, 98(2), 243-268.

*Rubin, R., Plummer, J., Palma, C., *Flarend, A., Spotts, H., **McDonald, S.**, & *Ong, Y.S. (2014). Assessing student progress along a solar system learning progression. *Science Scope*, 38(1) 27-33.

*Sezen, A., *Tran, M., **McDonald, S.P.**, & Kelly, G. (2014). A cultural historical activity theory perspective to understand preservice science teachers' reflections on and tensions during a microteaching experience. *Cultural Studies in Science Education*, 9(3), 675-697.

*Osczlik, A., & **McDonald, S.** (2013). Preservice science teachers' uses of inscriptions in science teaching. *Journal of Science Teacher Education*, 24(7), 1103-1132.

*Licona, P., **McDonald, S.**, & Furman, T. (2013). Student conceptions of the cause and locations of earthquakes. *The Earth Scientist*, 29(2), 50-54.

*Dreon, O., & **McDonald, S.** (2012). Being in the hot spot: A phenomenological study of two beginning teachers' experiences enacting inquiry science pedagogy. *Teachers and Teaching*, 18(3), 297-313.

Yerrick, R., Thompson, M., **McDonald, S.**, & McLaughlin, S. (2011). Collected from the cutting room floor: An examination of teacher education approaches to digital video editing as a tool for shifting classroom practices. *Contemporary Issues in Technology and Teacher Education*, 11(1), 118-148.

McDonald, S. (2010). Building a conversation: Preservice teachers' use of video as data for making evidence-based arguments about practice. *Educational Technology*, 50(1), 28-31.

*Petula, J., & **McDonald, S.** (2010). Three-dimensional analyses of teachers' professional development. *Catalyst for Change*, 36(1), 23-28.

*Kerlin, S., **McDonald, S.**, & Kelly, G. (2009b). Complexity of secondary scientific data sources and students' argumentative discourse. *International Journal of Science Education*, 32(9), 1207-1225.

*Kerlin, S., **McDonald, S.**, & Kelly, G. (2009a). Mapping an inquiry science unit. *Journal of Classroom Interaction*, 43(2), 4-13.

McDonald, S., & Songer, N. B. (2008). Enacting classroom inquiry: Theorizing teachers' conceptions of science teaching. *Science Education*, 92(6), 971-993.

McDonald, S. (2008). Seeing the science: Professional pedagogical vision for instructional leaders. *Catalyst for Change*, 35(2), 12-18.

McDonald, S., & Kelly, G. J. (2007). Understanding the construction of a science storyline in a chemistry classroom. *Pedagogies*, 2(3), 1-12.

Songer, N. B., Lee, H.-S., & **McDonald, S.** (2003). Research towards an expanded understanding of inquiry science beyond one idealized standard. *Science Education*, 87(4), 490-516.

Books

Stroupe, D., Hammerness, K., & **McDonald, S.** (Eds.). (2020) *Preparing Science Teachers through Practice-Based Teacher Education*. In P. Grossman (Ed.), Teaching core practices in teacher education book series. Cambridge: Harvard University Press. ISBN-13: 978-1-68253-531-8

Hammerness, K., Stroupe, D., **McDonald, S.**, and Matsko, K. K. (2020). Ch. 1: How do teachers learn to teach science in ambitious and equitable ways? In Stroupe, D., Hammerness, K., & **McDonald, S.** (Eds.) *Preparing Science Teachers through Practice-Based Teacher Education*. Harvard Education Press: Cambridge, MA.

McDonald, S., *Bateman, K., & *McCausland, J. (2020). Ch. 10: Practice-Embedded Science Teaching Methods. In Stroupe, D., Hammerness, K., & **McDonald, S.** (Eds.) *Preparing Science Teachers through Practice-Based Teacher Education*. Harvard Education Press: Cambridge, MA.

McDonald, S., Hammerness, K., & Stroupe, D., (2020). Ch. 14: Conclusion: Strands in Core Practices in Science Teacher Education. In Stroupe, D., Hammerness, K., & **McDonald, S.** (Eds.) *Preparing Science Teachers through Practice-Based Teacher Education*. Harvard Education Press: Cambridge, MA.

Refereed Conference Proceedings

McDonald, S., Wray, K.*, McCausland, J.*, Bateman, K.*, Pallant, A., & Lee, H-S. (2020). *Taking up the mantle of knowing: Supporting student engagement in progressive scientific discourse in geoscience. Proceedings of the 2020 International Conference of the Learning Science (ICLS)*. Nashville, TN: International Society of the Learning Sciences.

McCausland, J.* & **McDonald, S.** (2020). *Understanding self-ethnography as a pedagogical tool to combat whiteness in science education. Proceedings of the 2020 International Conference of the Learning Science (ICLS)*. Nashville, TN: International Society of the Learning Sciences.

Acher, A., Krabbe Sillasen, M., I.M. Febri, M., Lyngved Staberg, R., Karlström, M., Hamzaand, K., & **McDonald, S.** (2017). Teaching practices in preservice science teacher education. In M. Evagorou & M. Michelini (Eds). *Proceedings of the 2017 European Science Education Research Association (ESERA)*. Dublin, Ireland: ESERA.

*Tietjen, P., **McDonald, S.**, & *Rook, M.M. (2016). Theorizing learning spaces: A sociomaterial approach. *Proceedings of the 2016 International Conference of the Learning Science (ICLS)*. Singapore: International Society of the Learning Sciences.

Hod, Y., Charles, E.S., Ben-Zvi, D., Bielaczyc, K., Kapur, M., Acosta, A., Chen, M-H, *Choi, K. Cober, R., Kali, Y., Lenton, K., **McDonald, S.**, Moher, T., *Rook, M. M., Slotta, J. D., *Tietjen, P., Weiss, P., Whittaker, C., & Zhang, J. (2016). Future learning spaces for learning communities: New directions and conceptual frameworks. *Proceedings of the 2016 International Conference of the Learning Science (ICLS)*. Singapore: International Society of the Learning Sciences.

McDonald, S. (2015). Developing pedagogical chefs: Teacher education as creativity and human centered design. In J. Settlage & A. Johnston (Eds.), *Proceedings of the 2015 Science Education at the Crossroads Conference* (pp. 66-67). Cleveland, OH. [available online at www.sciedxroads.org/proceedings2015.html].

McDonald, S., & Thompson, J. (2014). *Creating material representations of practice at the boundary of professional development and classroom practice*. Proceedings of the 2014 International Conference of the Learning Sciences (ICLS). Boulder, CO: International Society of the Learning Sciences.

McDonald, S. (2014). Lurching toward utopia: Starting up a teacher learning community. In J. Settlage & A. Johnston (Eds.), *Proceedings of the 2014 Science Education at the Crossroads Conference* (pp. 66-67). Portland, OR. [available online at www.sciedxroads.org/proceedings2014.html].

McDonald, S. (2011). Breaking science education into pieces just leaves it broken. In J. Settlage, A. Johnston, S. Dotger, & R. Ceglie (Eds.), *Proceedings of the 2011 Science Education at the Crossroads*

Conference (pp. 58-59). San Antonio, TX. [available online at www.sciedxroads.org/proceedings2011.html].

McDonald, S. (2009). "This is what I mean by inquiry...": Building teachers' social capital through participatory research. In A. Johnston & J. Settlage (Eds.), *Proceedings of the 2009 Science Education at the Crossroads Conference* (pp. 54-55). Portland, OR: National Science Foundation. [available online at www.sciedxroads.org/proceedings2009.html].

McDonald, S. (2008). I know it when I see it ... the ephemeral nature of classroom inquiry science teaching. In A. Johnston & J. Settlage (Eds.), *Proceedings of the 2008 Science Education at the Crossroads Conference* (pp. 60-61). Alta, UT: National Science Foundation [available online at www.sciedxroads.org/proceedings2008.html].

McDonald, S. (2008). Understanding professional vision in inquiry science teaching. *Proceedings of the 2008 International Conference of the Learning Sciences (ICLS)*. Utrecht, The Netherlands: International Society of the Learning Sciences.

*Dreon, O., & **McDonald, S.** (2006). Using an online community of practice to foster inquiry as pedagogy amongst student teachers. *Proceedings of the 2008 International Conference of the Learning Sciences (ICLS)*. Bloomington, IN.: International Society of the Learning Sciences.

McDonald, S., & Songer, N. B. (2000). Online teacher reflection as a scaffold to support reform-based curriculum implementation. In B. Fishman, & S. O'Connor-Divelbiss (Eds.), *Proceedings of the 2000 International Conference of the Learning Sciences* (pp. 324-325). Mahwah, NJ: Lawrence Erlbaum Associates.

Other Publications

Hammerness, K*, Stroupe, D., & **McDonald, S.** (2020). The Critical Role of Science Teaching and Learning during COVID-19: How Teacher Educators Can Support Science Teachers Learning and Preparation in These Times. *Harvard Education Press Blog*. <https://www.hepg.org/blog/the-critical-role-of-science-teaching-and-learning>.

*Tanis-Ozcelik, A., & **McDonald, S.** (2018). Discourse of professional pedagogical vision in teacher education. In G. Kelly, & J. Green (Eds.), *Sociocultural Research in Science and Engineering Education*. Routledge: Cambridge, England.

Furman, T., & **McDonald, S.** (2018). Integrated content and pedagogy workshops. *SciTech Europa*. [available at <https://www.scitecheuropa.eu/scientific-education-content-workshops/85740/>].

McDonald, S., Furman, T., Pallant, A., & Lee, H-S. (2018). Plate tectonics: Investigating and visualising our dynamic earth. *SciTech Europa*. [available at <https://www.scitecheuropa.eu/plate-tectonics-dynamic-earth/90115/>].

*Ozcelik, A., & **McDonald, S.** (2016). Professional pedagogical vision as a way of thinking about reflection on practice. *School Science and Mathematics*. [online only at <https://doi.org/10.1111/ssm.12156>].

McDonald, S., & *Rook, M. (2014). Digital video analysis to support the development of professional pedagogical vision. In B. Calanda & P. Rich (Eds.), *Video analysis in teacher education*, (pp. 29-43). New York: Routledge.

*Rook, M. M., & **McDonald, S.** (2012). Digital records of practice: A literature review of video analysis in teacher practice. In P. Resta (Ed.), *Proceedings of Society for Information Technology & Teacher Education International Conference 2012*, (pp. 1441-1446). Austin, TX: AACE.

McDonald, S., & Kelly, G. (2012). Beyond argumentation: The rich complexity of discourse in science classroom. In M. S. Khine (Eds.), *Perspectives on Scientific Argumentation: Theory, Practice and Research*. (pp. 265-281). Dordrecht: Springer.

Kelly, G. J., **McDonald, S.**, & Wickman, P. O. (2012). Science learning and epistemology. In K. Tobin, B. Fraser, & C. McRobbie (Eds.), *Second International Handbook of Science Education* (pp. 281-291). Dordrecht: Springer.

Camplese, C., & **McDonald, S.** (2010). Disrupting the classroom. *Phi Delta Kappan EDge*. 5(4), 2-19.

McDonald, S., *Criswell, B., & *Dreon, O. (2008). Inquiry in the chemistry classroom: Explanation generation, perplexity, and synthesis. In J. Luft, J. Gess-Newsome, & R. Bell (Eds.), *Science as Inquiry in the Secondary Setting* (pp. 41-51). Arlington, VA: NSTA Press.

McDonald, S. (2005). Review of “Powering up: Learning to teach well with technology” by Eileen M. Coppola. *Science Education*, 89(6), 1045-1047.

Songer, N.B., & **McDonald, S.** (2001). Smiling while guiding thirty sixth graders through internet-based curricula when the internet is down (and other lessons learned with one sky, many voices projects). *ERIC on-line newsletter*. [available online at <http://www.ericit.org/newsletter/Volume22-2/songer.shtml>].

Publications - In Progress

*Télliez-Acosta, M., Acher, A., & **McDonald, S.** (Submitted 2021-01-05). Pedagogies and Tools to Support Elementary Preservice Teachers in Learning to Plan Modeling-Based Investigations Using Science Content Resources. *Journal of Research on Science Teaching*.

Grants

Pallant, A. (PI), **McDonald, S.** (Co-PI), & Lee, H-S. (Co-PI). Geological Construction of Rock Arrangements from Tectonics: Systems Modeling Across Scales (GeoCRAFT). National Science Foundation, Discovery Research K-12, Early Stage Full Design and Development Project to the Learning Strand. \$2,630,050. (October 1, 2020 - September 30, 2024)

Pallant, A. (PI), **McDonald, S.** (Co-PI), Lee, H-S. (Co-PI), Larson, E. (Co-PI), & McAuliffe, C. (Co-PI). (2018 - 2021). *GeoHazard: Modeling Natural Hazards and Assessing Risks*. National Science Foundation, Discovery Research K-12, Early Stage Full Design and Development Project to the Learning Strand (DRK - 1812362). \$2,853,004.

Pallant, A. (PI) , **McDonald, S.** (Co-PI), & Lee, H-S. (Co-PI). (2016 - 2020). *Geological Models for Explorations Of the Dynamic Earth (GEODE): Supporting middle school students' learning through geodynamic modeling*. National Science Foundation, Discovery Research K-12, Early Stage Full Design and Development Project to the Teaching Strand (DRK - 1621176). \$2,698,654.

Furman, T. (PI), **McDonald, S.** (Co-PI), Palma, C. (Co-PI), & Guertin, L. (Co-PI). (2010 - 2017). *Targeted Math Science Partnership – Middle Grade Earth and Space Science Education*. National Science Foundation, Math Science Partnership (MSP). (DUE - 0962792). \$9,181,723.

McDonald, S. (PI). (2012). *The Cross Cultural Nature of Professional Pedagogical Vision*. The Fulbright Association. The CASTeL Center, Dublin City University, Dublin, Ireland \$18,200.

Cahoy, E. (PI), & **McDonald, S.** (Co-PI). (2012 - 2013). *Faculty practices in creating and managing personal digital archives*. Andrew E. Mellon Foundation. \$143,000.

Cyr, R. (PI), & **McDonald, S.** (Project Faculty). (2010 - 2015). *Improving the Recruitment and Preparation of Secondary School Biology Teachers*. Howard Hughes Medical Institute. \$1,000,000.

McDonald, S. (2008 - 2010). *Understanding Professional Pedagogical Vision for Inquiry Science Teaching*. Knowles Science Teaching Foundation, Early Career Research Fellowship. \$110,000.

McDonald, S. (2005). *The Invisible College for Inquiry Science Study (ICISS)*, A grant from The Pennsylvania State University College of Education Research Initiation Program. \$8,925.

Stroupe, D. (PI), **McDonald, S.** (Co-PI), Johnson, H. (Co-PI), Kloser, M. (Co-PI), & Mawyer, K. (Co-PI). "Preparing preservice teachers to disrupt epistemic injustice" Lyle Spencer Research Awards to Transform Education, The Spencer Foundation. Total requested \$998,673. (August 1, 2020 - July 31, 2023). [LOI downselect led to request for a full proposal, but not funded].

Awards

Outstanding Teaching Award (2009), College of Education, The Pennsylvania State University.

Computer Supported Collaborative Learning (CSCL). Early Career Workshop Participant (2007) [selective]

International Conference of the Learning Sciences (ICLS). Early Career Workshop Participant (2006) [selective]

International Conference of the Learning Sciences (ICLS). Doctoral Consortium Participant (2002) [selective]

Invited Presentations

McDonald, S. (2018). *Designing ambitious science teaching preparation through design-based research and conjecture mapping*. Invited Presentation at the NSF-Funded, Ambitious Science Teacher Preparation Conference. Michigan State University, East Lansing, MI.

McDonald, S. (2017). *The role of technology in science investigations*. Presentation at the Workshop for the Committee on Science Investigations and Engineering Design for Grades 6-12. Invited talk at the National Academies of Sciences, Engineering and Medicine. Washington, D.C.

McDonald, S. (2017). *Technology is not the answer*. Invited opening keynote at the PSU Google Summit. Pennsylvania State University, University Park, PA.

McDonald, S. (2015). *Designing learning spaces with learning theory in mind*. Invited talk at the Educause Learning Initiative (ELI) Webinar Series. <http://www.educause.edu/events/eli-webinar-designing-learning-spaces-learning-theory-mind>.

McDonald, S., Lewis-King, T., & Nolan, J. (2015). *The change game: Understanding science teacher leadership*. Invited Keynote at the annual Pennsylvania Earth and Space Science Teachers Association conference. Philadelphia, PA

McDonald, S. (2015). *Hacking for educational good*. Invited Keynote at HackPSU, Pennsylvania State University Hack-a-thon. State College, PA.

McDonald, S., & Lewis-King, T. (2013). *Science teacher leadership: In and out of the classroom*. Invited Keynote at the annual Pennsylvania Earth and Space Science Teachers Association conference. Media, PA.

McDonald, S. (2013). *Designing innovative technology-supported spaces to support collaborative learning*. Invited talk at the Halle Centre for Multimedia Teaching and Learning (@ LLZ) Martin-Luther-University Halle-Wittenberg, Germany.

McDonald, S. (2013). *Professional pedagogical vision as an evolving cultural practice for preservice science teachers*. Invited talk at the Martin-Luther-University Halle-Wittenberg, Germany.

McDonald, S. (2013). *Professional pedagogical vision as an evolving cultural practice for preservice science teachers*. Invited talk at the University of Stockholm, Sweden.

McDonald, S. (2013). *Research to support ambitious science teaching: Learning progressions and professional vision*. Invited talk at the CASTeL Center, University of Dublin, Ireland.

McDonald, S. (2011). *Digital intellectual life(stream): Using emerging technology tools to do intellectual work*. Invited talk at the annual meeting of the National Association for Research on Science Teaching, Orlando, FL.

McDonald, S. (2010). *Using video analysis to develop beginning teachers' pedagogical expertise in science*. Invited talk at the University of Leeds, England.

McDonald, S. (2010). *Minding the research–practice gap: Attending to the dialogic nature of research and practice*. Invited panelist at the annual meeting of the National Association for Research on Science Teaching, Philadelphia, PA.

McDonald, S., *Delone, S., *Criswell, B., & *Kerlin, S. (2009). *Engaging with teachers around science education research*. Invited paper presented at the annual meeting of the National Association for Research on Science Teaching, Garden Grove, CA.

McDonald, S., *Criswell, B., & *Kerlin, S. (2009). *The impact of video analysis on the development of professional vision in preservice and practicing teachers*. Invited paper presented at the annual meeting of the National Association for Research on Science Teaching, Garden Grove, CA.

Conference Papers, Presentations and Other Talks

*Wooten, M. & **McDonald, S.** (2021). Mapping Consensus and Dissensus in Perspectives on Learning Progressions Research: Past, Present, and Future Figurations. Paper presented at the NARST Annual Meeting. Orlando, FL.

McDonald, S., *McCausland, J., *Baker, G., *Bateman, K., and *Jacobson, E. (2021). Supporting progressive discourse in epistemically authentic geoscience investigations. Paper presented at the NARST Annual Meeting. Orlando, FL.

*Wray, K., *Botch, M., & **McDonald, S.** (2021). Teacher discourse practices supporting student progressive discourse in an ambitious science classroom. Paper presented at the NARST Annual Meeting. Orlando, FL.

*McCausland, J., *Jackson, J., & **McDonald, S.** (2021). "That's not evidence!": Teacher's navigating conceptual and pedagogical dilemmas in Earth science teaching. Poster presented at the NARST Annual Meeting. Orlando, FL.

*Bateman, K. & **McDonald, S.** (2021). Using Assemblage Theory to Develop New Ideas for Science Teacher Learning. Paper presented at the NARST Annual Meeting. Orlando, FL.

Grey, R., **McDonald, S.,** & Stroupe, D. (2021). Examining asset and deficit perspectives of preservice science teachers' knowledge and learning. Paper presented at the NARST Annual Meeting. Orlando, FL.

Lee, H-S., **McDonald, S.** (2021). Reconstructing Reality through Simulations to Enable Classroom Enactment of Science Practices. Paper presented at the NARST Annual Meeting. Orlando, FL.

McDonald, S. (2021). "When Teaching Online Poses a Subject Area Difficulty". Panel for Teaching and Learning with Technology Webinar. University Park, PA.

*Wooten, M. & **McDonald, S.** (2020*). *Tracing and mapping consensus and dissensus through dis/embodied dialogue: A case study in science teaching and learning*. Paper presented at the 16th International Congress of Qualitative Inquiry. Urbana, IL.

*Bateman, K., & **McDonald, S.** (2020*). *Principals as policy players: How leadership practices impact science instruction*. Paper presented at the NARST Annual Meeting. Portland, OR.

McDonald, S., *Bateman, K., & *Tanis-Ozcelik, A. (2020*). *Instructional Differences in the Support of System-Level Mechanistic Models of Plate Tectonics*. Paper presented at the NARST Annual Meeting. Portland, OR.

Grey, R., Stroupe, D., & **McDonald, S.** (2020*). *A Critical Examination of the Deficit Perspective in Science Education Preservice Teacher Knowledge Studies*. Paper presented at the NARST Annual Meeting. Portland, OR.

Campbell, T., Thompson, J., Windschitl, M., Stroupe, D., **McDonald, S.**, Luehmann, A., Lundgren, L., Hancock, B., Hagenah, S., & Kloser, M. (2020*). *Context-Dependent Approaches to Partnering with Mentor Teachers: Supporting Novice Teachers Ambitious Science Teaching*. Symposium presented at the NARST Annual Meeting. Portland, OR.

McDonald, S., *Bateman, K., *Flarend, A., *McCausland, J., *Ricketts, A., & *Tanis Ozcelik, A. (2019). *Ambitious science teacher learning across the professional continuum*. Symposium presented at the NARST Annual Meeting. Baltimore, MD.

Grey, R., Hammerness, K., Johnson, H., Larkin, D., Luehmann, A., Mawyer, K., MacPherson, A., **McDonald, S.**, Stroupe, D., & Wenk-Gotwals, A. (2019). *Toward a coherent vision of ambitious science teacher preparation*. Symposium presented at the NARST Annual Meeting. Baltimore, MD.

Damilen, D., Dixon, C., Gweon, S., Hardy, L., Hsi, S., Kelly, G., Lee, H-S., **McDonald, S.**, Pallant, A., & Stephens, L. (2019). *Uncertainty manifested within science and computational thinking practices*. Symposium presented at the NARST Annual Meeting. Baltimore, MD.

*Tanis Ozcelik, A., & **McDonald, S.** (2018). *Preservice science teachers' noticing in decomposition of a model teacher's practice*. Paper presented at the 27th International Congress on Educational Sciences (ICES). Antalya, Turkey.

*Tanis Ozcelik, A., & **McDonald, S.** (2018). *Preservice science teachers creating lesson plans to elicit students' ideas*. Paper presented at the 27th International Congress on Educational Sciences (ICES). Antalya, Turkey

*Tanis Ozcelik, A., & **McDonald, S.** (2018). *Discourse of professional pedagogical vision in preservice teacher education*. Poster in structured poster session presented at the American Educational Research Association (AERA) Annual Meeting. New York, NY.

Gray, R., Braaten, M., Ross, D.K., Stroupe, D., Howes, E., Wolff, D., Settlage, J., **McDonald, S.**, Johnson, H., & Mawyer, K. (2017). *Affordances and challenges of framing science teacher preparation programs around core practices*. Symposium presented at the NARST annual meeting in San Antonio, TX.

*Tietjen, P., *Ozken-Bekiroglu, S., *Choi, K., Rook, M.M., & **McDonald, S.** (2017). *A sociomaterial investigation of an active learning space*. Paper presented at the Annual Meeting of the American Educational Research Association, San Antonio, TX.

*Rook, M. M., **McDonald, S.**, *Choi, K., & *Tietjen, P. (2016). *Facilitating bridges of practice among multiple learning communities*. Poster presented as part of symposium session (titled Future learning spaces for learning communities: New directions and conceptual frameworks; Hod et al.) at the International Conference of the Learning Sciences, Singapore.

McDonald, S., & *Ozcelik, A. (2016). *Negotiating tensions: Development of ambitious science teaching practices*. Paper presented at the NARST Annual Meeting, Baltimore, MD.

Maeng, S., Plummer, J., **McDonald, S.**, Kangwon, K.L., Palma, C., Park, Y-S, Duschl, R., & Furman, T. (2016). *Methodological approaches to the development of Earth and space science learning progressions*. Symposium presented at the NARST Annual Meeting, Baltimore, MD.

Braaten, M., Stroupe, D., Settledge, J., **McDonald, S.** (2016). *Preparing novices for ambitious instruction: A look at different opportunities in learning settings*. Symposium presented at NARST Annual Meeting, Baltimore, MD.

*Olcese, N., *Taylor, P., *Merrit, M., **McDonald, S.**, *Rook, M. M., Norton, P., & McKinzie, C. (2016). *"I feel like this is just for play!": Investigating the exclusive use of iPads in a STEM-focused teacher candidate cohort*. Round table presented at the Annual Conference of the Society for Information Technology and Teacher Education, Savannah, GA.

*Choi, K., *Rook, M., & **McDonald, S.** (2016). *Comparing the built pedagogy in a learning space with patrons' experiences: An analysis of two perspectives*. Poster presented at the annual meeting of the American Educational Research Association (AERA). Baltimore, MD.

McDonald, S., *Bateman, K., *Ozcelik, A., *Gall, H., *Webb, A., & Furman, T. (2015). *Understanding students' ideas about plate tectonics: A learning progressions approach*. Paper presented at the annual meeting of the Geological Society of America (GSA), Baltimore, MD.

*Bateman, K., **McDonald, S.**, & Furman, T. (2015). *The challenge of assumptions: A comparison of curricular materials and empirical learning progressions in middle grades plate tectonics*. Paper presented at the annual meeting of the Geological Society of America (GSA), Baltimore, MD.

*Webb, A., **McDonald, S.**, Furman, T., *Gall, H., *Bateman, K., & *Ozcelik, A. (2015). *A plate tectonics multiple choice assessment: A pilot*. Paper presented at the annual meeting of the Geological Society of America (GSA), Baltimore, MD.

*Choi, K., *Rook, M., & **McDonald, S.** (2015). *Experiencing informal learning spaces*. Paper presented at the Association for Educational Communications and Technology (AECT) International Convention, Jacksonville, Florida.

*Grimes, P., van Kampen, P., **McDonald, S.**, Finlayson, O., & McLoughlin, E. (2015). *Professional vision of inquiry-based science education: An analysis of the highlighting and coding practices of pre-service science teachers in Ireland and the U.S.*. Paper presented at the European Science Education Research Association (ESERA), Helsinki, Finland.

*Osczlik, A., & **McDonald, S.** (2015). *Discourse practices across science education contexts*. Paper presented at the annual meeting of the National Association of Research on Science Teaching (NARST), Chicago, IL.

Thompson, J., Bell, P., Shouse, A., Penuel, W., & **McDonald, S.** (2015). *Models of practice-based professional development in support of Next Generation Science Standards*. Symposium presented at the annual meeting of the National Association of Research on Science Teaching (NARST), Chicago, IL.

Palma, C., Plummer, J., *Ghent, C., *Gleason, T., *Ong, Y.S., & **McDonald, S.** (2015). *Have astronauts visited Neptune? Student ideas about how astronomers study the solar system*. Poster presented at the annual meeting of the National Association of Research on Science Teaching (NARST), Chicago, IL.

Palma, C., Plummer, J., *Ghent, C., *Gleason, T., *Ong, Y.S., & **McDonald, S.** (2015). *Have astronomers been to Neptune? Results of a study of high school students' ideas about how astronomers study the solar system*. In American Astronomical Society Meeting Abstracts (Vol. 225), Seattle, WA.

*Osczlik, A., & **McDonald, S.** (2015). *Science teacher candidates' developing professional vision in science teaching*. Paper presented at the annual meeting of the American Educational Research Association (AERA), Chicago, IL.

McDonald, S., Plummer, J., Rivet, A., Delgado, C., Kastens, K., *Flarend, A., *Rubin, K., *Pickard, M., *Bembenic, M., & Anderson, C. (2014). *Integrating crosscutting themes, practices, and core ideas: Learning progressions in Earth and space science symposium*. Symposium presented at the annual meeting of the National Association for Research in Science Teaching (NARST), Pittsburgh, PA.

Kang, H., Stroupe, D., Hagenah, S., Thompson, J., Braaten, M., **McDonald, S.**, & Larkin, D. (2014). *Rigorous and responsive learning by design: Transforming classrooms and practice-based teacher education*. Symposium presented at the annual meeting of the National Association for Research in Science Teaching (NARST), Pittsburgh, PA.

*Rook, M. M., **McDonald, S.**, & *Safran, M. (2014). *The forgotten technology: Understanding our learning spaces*. Paper presented at the Symposium for Teaching and Learning with Technology, The Pennsylvania State University, University Park, PA.

McDonald, S., *Bembenic, M., Guertin, L., *Licona, P., *Preston, S., & Furman, T. (2013). *Developing a hypothetical learning progression for plate tectonics*. Poster presented at the annual meeting of the National Association for Research on Science Teaching (NARST), Rio Grande, PR.

*Rook, M. M., & **McDonald, S.** (2013). *Investigating built pedagogy: How learning theory contributes to the design of a learning space*. Paper presented at Annual Conference of the American Educational Research Association (AERA), San Francisco, CA.

McDonald, S., & *Brightbill, B. (2013). *Science teacher leadership: What can you do to lead?* Paper presented at the Pennsylvania Science Teachers Association Annual Meeting. State College, PA.

Furman, T., **McDonald, S.**, Guertin, L., Plummer, J., Palma, C., Lauver, S., Lewis-King, T., & Mundry, S. (2013). *The Pennsylvania Earth and space science partnership: Midlife reflections on success, struggles and change*. Paper Presented at the National Science Foundation's Math and Science Partnership (MSP) Learning Network Conference (LNC), Washington, DC.

Palma, C., *Flarend, A., *Petula, J., Richards, M., Spotts, H., **McDonald, S.**, & Furman, T. (2013). *Design, delivery, and results of the Earth and space science partnership teacher professional development program*. American Astronomical Society Meeting Abstracts, 221, #342.08

McDonald, S. (2012). *Professional pedagogical vision as an evolving cultural practice for preservice science teachers*. Paper presented at the annual meeting of the American Educational Research Association (AERA), Vancouver, BC, Canada.

McDonald, S., Furman, T., & Guertin, L. (2012). *Refining learning progressions in astronomy and plate tectonics*. Paper presented at the National Science Foundation's Math and Science Partnership (MSP) Learning Network Conference (LNC), Washington, DC.

McDonald, S., & Cahoy, E. (2012). *Digital scholarship: How digital tools are reshaping academic work*. Paper presented at the Symposium for Teaching and Learning with Technology. State College, PA.

McDonald, S., Furman, T., & Palma, C. (2011). *Developing learning progressions in Earth and space science as a tool for teacher professional development and student learning*. Paper presented at the National Science Foundation's Math and Science Partnership (MSP) Learning Network Conference (LNC), Washington, DC.

Cahoy, E., & **McDonald, S.** (2011). *Curating digital intellectual lives: A discipline-based approach*. Paper presented at the Conference on Personal Digital Archiving, San Francisco, CA.

McDonald, S. (2010). *Developing professional vision: Learning to notice in complex classroom settings*. Paper presented at the annual meeting of the American Educational Research Association (AERA), Denver, CO.

*Dreon, O., & **McDonald, S.** (2010). *New science teachers' descriptions of inquiry enactment*. Paper presented at the annual meeting of the American Educational Research Association (AERA), Denver, CO.

Cahoy, E.S., *Gael, P., & **McDonald, S.** (2010) *Citation and personal library management as research literacy*. Elsevier Scholarly Perspectives Webcast. [online]

McDonald, S., *Criswell, B., *Delone, S., & *Tang, C. (2010). *The invisible college for inquiry science study (ICISS): Integrating teaching and research in a professional community*. Symposium presented at the annual meeting of the National Association for Research on Science Teaching, Philadelphia, PA.

*Emig, B., **McDonald, S.,** & Zembal-Saul, C. (2009). *Analogical reasoning*. Paper presented at the annual meeting of the National Association for Research on Science Teaching, Garden Grove, CA.

*Sezen, A., *Tran, M., **McDonald, S.,** & Kelly, G. (2009). *Pre-service science teachers' reflections upon their micro-teaching experience: An activity theory perspective*. Paper presented at the annual meeting of the National Association for Research on Science Teaching, Garden Grove, CA.

McDonald, S. (2009). *Video analysis in teacher preparation and professional development*. Invited discussant at the annual meeting of the American Educational Research Association, San Diego, CA.

McDonald, S. (2008). *Understanding professional vision in inquiry science teaching*. Poster Presented at the International Conference of the Learning Sciences (ICLS), Utrecht, The Netherlands.

McDonald, S. (2008). *Understanding professional vision in inquiry science teaching*. Paper presented at the National Association for Research on Science Teaching, Baltimore, MD.

*Criswell, B., & **McDonald, S.** (2008). *An investigation of the 'dead end' participant structure - Examining how student cognitive factors and teacher beliefs impact its contribution to progressive discourse*. Paper presented at the National Association for Research on Science Teaching, Baltimore, MD.

*Dreon, O., & **McDonald, S.** (2008). *Tackling tensions: The development of professional identity through participation in a community of practice*. Paper presented at the National Association for Research on Science Teaching, Baltimore, MD.

*Kerlin, S., & **McDonald, S.** (2008). *Student argumentative discourse in a seismology inquiry unit*. Paper presented at the National Association for Research on Science Teaching, Baltimore, MD.

*Kerlin, S., & **McDonald, S.** (2008). *Mapping a science inquiry unit*. Paper presented at the Hawaii International Conference on Education, Honolulu, HI.

*Dreon, O., *Criswell, B., & **McDonald, S.** (2007). *Mentoring new inquiry-minded science teachers: Experiences from ICISS*. Paper presented at How People Learn: The Implications of Learning Research for Science Education. Lancaster, PA.

*Dreon, O., & **McDonald, S.** (2007). *Negotiating contradictions: The development of professional identity through participation in a community of practice*. Paper presented at the annual meeting of the National Association for Research on Science Teaching (NARST), New Orleans, LA.

McDonald, S., & Kelly, G. J. (2007). *Building the science storyline using the mole concept*. Paper presented at the annual meeting of the National Association for Research on Science Teaching (NARST), New Orleans, LA.

*Dreon, O., & **McDonald, S.** (2006). *Using an online community of practice to foster inquiry as pedagogy amongst student teachers*. Paper presented at the International Conference of the Learning Sciences, Bloomington, IN.

McDonald, S. (2006). *Defining inquiry in practice: The invisible college for inquiry science study (ICISS)*. Paper presented at the annual meeting of the American Educational Research Association (AERA), San Francisco, CA.

McDonald, S. (2004). *Research towards varied models of classroom-based inquiry science*. Paper presented at the annual meeting of the American Educational Research Association (AERA), San Diego, CA.

McDonald, S. (2004). *Teacher choices about inscriptional and technological practices while enacting inquiry science*. Paper presented at the annual meeting of the National Association of Research on Science Teaching (NARST), Vancouver, BC.

McDonald, S. (2002). *Teachers' use of scientific inscriptions and argumentation in building inquiry understandings*. Presentation at the doctoral consortium at the International Conference of the Learning Sciences (ICLS), Seattle, WA.

McDonald, S., & Songer, N.B. (2001). *How teacher define and enact reflection in an online community*. Paper presented at the annual meeting of the American Educational Research Association (AERA), Seattle, WA.

McDonald, S., & Songer, N. B. (1999). *Research issues in the design of online communities*. Paper presented at a workshop at the annual meeting of Computer Human Interaction (CHI), Pittsburg, PA.

McDonald, S., & Songer, N. B. (1999). *How to make your students into hurricane scientists: A one sky, many voices program*. Paper presented at the National Science Teachers Association (NSTA) Regional Conference, Detroit, MI.

McDonald, S., & Modena, J. (1996). *Publishing student work on the world wide web*. Paper presented at the annual meeting of the Massachusetts Computer Using Educators (Mass CUE). Springfield, MA.

Design and Development

SCIED 552: Science Teaching and Learning [formalized this course through curricular affairs in 2011 and developed World Campus version in 2016]

SCIED/MTHED 460: Trends and Issues in Science, Technology, Engineering, and Mathematics (STEM) Education [co-developed with Fran Arbaugh for World Campus 2015]

McDonald, S. (2007). *Two Day Curriculum Module for School Leadership in Excellent Science Teaching*. National Institute for School Leadership, Washington, D.C. [Subject matter expert for online curriculum, and designer of two-day face to face curriculum].

Songer, N.B., Huber, A., Adams, K., Chang, H.Y., Lee, H.S., **McDonald, S., & Jones, T.** (2002). *BioKIDS: Kids' Inquiry of Diverse Species, An Eight-Week Inquiry Curriculum using Simple, Powerful Technologies*. [Pedagogical expert for consultation on development of technology tools and co-designer of online and face-to-face curriculum].

Parr, C.S., Espinosa, R., Jones, T., **McDonald, S.,** Songer, N.B., & Myers, P. (2002). *Introductory-level CyberTracker sequence for Detroit-area wildlife*. The University of Michigan. [Pedagogical expert for design of inquiry fostering software tools and co-designer of online and face-to-face curriculum].

Courses Taught

SCIED 412: Secondary Science Teaching II

SCIED/MTHED 460: Trends and Issues in Science, Technology, Engineering, and Mathematics (STEM) Education [World Campus]

SCIED 552: Science Teaching and Learning [both residence and on World Campus]

LDT/SCIED 583: Survey of Research in Learning Sciences and Technology [Co-taught]

EDUC 597: Learning Science Colloquium

C I 597X: Disruptive Technologies in Teaching and Learning

C I 597X: Video Analysis Methodologies

C I 597X: ICISS: The Invisible College for Inquiry Science Study

Workshop Facilitation

GeoHazard Professional Development Workshop, Remote Meeting. 2020.

GEODE: Geological Models for Explorations Of Dynamic Earth, Summer Professional Development Workshop - Ambitious Science Teaching and Geoscience Teaching. University Park Campus. 2018.

Earth and Space Science Partnership Summer Professional Development Workshop - Water. Brandywine Campus. 2015.

Earth and Space Science Partnership Summer Professional Development Workshop - Climate and Climate Change. University Park Campus. 2014.

Earth and Space Science Partnership Summer Professional Development Workshop - Climate and Climate Change. Brandywine Campus. 2014.

Inquiry Assessment Workshop for Center for the Advancement of Science & Mathematics Teaching and Learning, Dublin City University, Dublin, Ireland. 2013.

Earth and Space Science Partnership Summer Professional Development Workshop - Energy. University Park Campus. 2012.

Earth and Space Science Partnership Summer Professional Development Workshop - Hurricanes. University Park Campus. 2011.

National Institute for School Leadership (NISL) Workshop on Excellence in Science Teaching: Scranton, PA (2007); Boston, MA (2008); Marlborough, MA (2008); Lawrence, MA (2008); Chambersburg, PA (2008); Williamsport, PA (2008); Pueblo, CO (2009 & 2010).

Pennsylvania Inspired Leadership Workshop on Excellence in Science Teaching. 2011.

Professional Activities and Service

Professional service to field and consulting

Member, NARST Board of Directors. 2021 - 2024.

Board Liaison, NARST Elections Committee. 2021-2024.

Member, Pennsylvania State Science and Technology, Environment and Ecology Standards Steering Committee, 2020.

Mentor, NARST Meeting Doctoral Student Mentoring Program, 2020.

Chair of the Organizing Committee, Waterbury Summit on the Learning Sciences, 2019.

Member, State College Area School District, K-12 Science Curriculum Revision Committee, 2015 - 2019.

Chair, National Association for Research in Science Teaching (NARST), Standing Website Provider Committee. 2015 - 2020.

Member, Vosaic, Advisory Board. 2017 - 2018.

Panel Reviewer, Institute of International Education, Council for the Exchange of International Scholars, Fulbright Scholars. 2014 - 2016.

Chair, National Association for Research in Science Teaching (NARST), AdHoc Website Provider Committee. 2013 - 2015.

Development Consultant, National Board of Professional Teaching Standards, ATLAS Video analysis platform. 2013.

Member, Microsoft National Teacher Education Advisory Board. 2011 - 2012.

Mentor/Co-Facilitator, NARST Sandy K. Abell Institute for Doctoral Students, Colorado Springs, CO, 2011

Member, Outstanding Paper Awards Committee, *Journal of Research on Science Teaching (JRST)*, 2007 - 2009.

Member, Outstanding Paper Awards Committee, National Association of Research on Science Teaching (NARST), 2005 - 2006.

Program Chair, Special Interest Group for Advanced Technologies for Learning (SIG ATL) of the American Educational Research Association (AERA). 2006.

Coordinator of Student Volunteers, International Conference of the Learning Sciences (ICLS). Ann Arbor, MI, 2000.

Service to the University

Reviewer, Schreyers Honors College Applications, 2015 and 2020

Member, Learning Spaces Leadership Committee, Executive Committee and Academic Subcommittee. 2016 - present

Member, University Committee on Instructional Facilities. 2013 - 2016.

Member, Security Standards Task Force. 2017 - 2020

Member, Kozak Award Committee. 2010 - 2016

Member, New Classroom and Laboratory Building Program Committee. 2014 - 2015

Member, Task Force for Shared Programs. 2014 - 2015

Strand Reviewer - Learning Spaces, Teaching and Learning with Technology (TLT) Symposium. 2015

Member, Teaching and Learning with Technology (TLT) Symposium Program Committee. 2014 - 2015

Member, Provost's Learning Spaces Study Group. 2012 - 2013

Member, Social Science Research Institute Steering Committee. 2011 - 2015

Service to the College of Education

Member, College of Education Equity Team. 2020 - Present

Presenter, Graduate and Undergraduate Student Symposium, College of Education. 2020

Member, Promotion and Tenure Committee, College of Education. 2018 - 2019

Convener, Learning Science Initiative in the College of Education. 2018 - 2020

Chair, Science Education/Learning Sciences Faculty Search Committee. 2017 - 2018

Member, Learning Design and Technology/Learning Sciences Faculty Search Committee. 2017 - 18

Member, Educational Psychology Faculty Search Committee. 2016 - 2017

Member, Learning Sciences Task Force. 2015 - present

Chair, Curriculum and Instruction Department Head Search Advisory Committee. 2014 - 2015

Member, Sabbatical Leave Committee. 2013 - 2015.

Member, Search Committee, Learning Design and Technology/Learning Sciences Faculty. 2013 - 2015.

Member, Faculty Council. 2006- 2008. Secretary 2007 - 2008.

Chair, Graduate Studies and Research Standing Committee. 2007 – 2008.

Member, Waterbury Chair Search Committee. 2006 - 2007

Service to the Department of Curriculum and Instruction

Member, Promotion and Tenure Committee, 2020 - present.

Chair, Search Committee, Waterbury Chair in Secondary Education. 2019 - 2020.

Member, Search Committee, Curriculum & Instruction, Professor of Practice. 2019

Program Coordinator, Secondary Science Education. 2011 - present.

Professor-In-Charge, Science Education Graduate Emphasis. 2011 - present.

Member, Curricular Affairs Committee. 2005 - 2007 and 2014 - 2016.

Member, Graduate Staff Assistant Search Committee. 2014.

Chair, Search Committee, Science Education Faculty. 2011.

Author, NCATE Accreditation Report Element for Secondary Science Education as part of the University Report. 2011 - 2012

Member, Climate Committee. 2005- 2011; Chair 2005 – 2010.

Chair, Search Committee, Science Education Faculty. 2005.

Editorial Boards, Review Boards, and Reviewing

Editorial Board, *Journal of Science Teacher Education*. 2019 - 2022

Editorial Review Board, *Journal of Research on Science Teaching*. 2013 - 2016

Associate Editor, *Journal of Teacher Education*. 2010 - 2015.

Editorial Board Member, *Journal of Learning Spaces*. 2010 - 2013.

Associate Editor – Commentary Section. *Technology, Humanities, Education, and Narrative (THEN)*. 2004 - 2010.

Contributing Editor, *Educational Technology Research & Development*. 2002 - 2014.

Ad Hoc Reviewer:

International Journal of Science Education

Journal of the Learning Sciences

Journal of Experimental Psychology

Journal of Research in Science Teaching

Journal of Science Teacher Education

Journal of Teacher Education

Journal of Science Education and Technology

Science Education

Proposal Reviewer:

American Educational Research Association (AERA) Annual Meetings. 2000 - Present.

National Association of Research on Science Teaching (NARST) Annual Meetings. 2002 - Present.

International Conference of the Learning Sciences (ICLS). 2000 - Present.

Senior Reviewer: 2014, 2016

Computer Supported Collaborative Learning (CSCL). 2007, 2009

Memberships

American Educational Research Association (AERA), including SIGs:

Advanced Technologies for Learning (ATL),

Education in Science and Technology (EST), and

Learning Sciences (LS).

National Association for Research in Science Teaching (NARST)

International Society of the Learning Sciences (ISLS)

National Science Teachers Association (NSTA)