

Tamara Holmlund (formerly Nelson)*Professor, Science Education*

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360.546.9663 tnelson1@wsu.edu**PROFESSIONAL PREPARATION**

Ph.D. 2002. University of Washington. Curriculum & Instruction; specialization in Science Education. Dissertation: *Dialogic Inquiry in School-University Partnerships: Case Studies of Teacher-Graduate Student Partnerships in Science Education*

M.Ed. 1996. Western Washington University. Science Education; specialization in Natural Science. Thesis: *Development and Implementation of an Interdisciplinary High School Program with Exhibition Assessment*

B. S. 1980 The Evergreen State College. Marine biology and ecology.

EDUCATIONAL WORK EXPERIENCE

2002-present **Full (2014) Professor**, Science Education, Washington State University Vancouver. Research agenda focuses on how teachers transform new understandings about science and STEM teaching and learning into classroom practice, especially to successfully and meaningfully engage underrepresented student populations in science learning.

2000-2002 **Research Assistant**. University of Washington, College of Education. Seattle, Washington. Initiated and conducted a study of the NSF-funded PRIME partnerships (Partnership for Research in Inquiry-Based Math, Science, & Engineering Education) between scientists and science teachers.

2000-2001 **Instructor**, Science Education, University of Washington. Seattle, Washington. Developed and taught graduate level courses in science education, including “*Culturally and locally responsive mathematics and science teaching*” and “*Shifting the curriculum: Adopting inquiry and project-based science.*”

1998-2000 **Teaching Assistant**, University of Washington. Seattle, Washington. Assisted in planning, teaching, and assessing graduate-level secondary and elementary science education and technology courses. Mentored graduate students in developing professional electronic portfolios.

1996-1997, 1999 **Instructor**, Western Washington University. Bellingham, Washington. Developed and taught Elementary/Middle School Science Methods for undergraduates as a “Teacher-in-Residence.”

1984-1996 **Teacher**, High School Math & Science. Snohomish, Washington.
Teacher, Junior High Math & Science. Snohomish, Washington.
Teacher, High School Science. Boca Raton, Florida.

SCHOLARLY ACTIVITIES

My research agenda reflects multiple questions related to the current call for STEM education and the inclusion of students typically underrepresented in STEM courses and careers. Some of the areas I explore are: 1) how various stakeholders conceptualize “STEM education”; 2) how teachers learn about, develop curriculum, and implement STEM education in both traditional and specialized STEM schools; 3) how students are engaged and supported in science and mathematics practices through project-based STEM learning opportunities; and, 4) the role of leadership in affording and constraining STEM education implementation.

My past research focused on collaborative teacher inquiry in professional learning communities, the dialogic interactions associated with teachers’ use of student learning data, and the meanings and instructional transformations teachers made as result of their collaborative work.

REFEREED PUBLICATIONS (ARTICLES & BOOK CHAPTERS)

Lesseig, K., Firestone, J., Morrison, J., Slavit, D., & Holmlund, T. (in press, 2018). An analysis of cultural influences on STEM schools: Similarities and differences across K-12 contexts. *International Journal of Science and Mathematics Education*. Published online, January, 2018. ISSN: 1573:1774.

Lesseig, K., Slavit, D., & Nelson, T. H. (2017). Jumping on the STEM bandwagon: How middle grades students and teachers can benefit from STEM experiences. *Middle School Journal*, 48(3), 15-24. Included in the *Middle School Journal* collection of top 6 downloaded articles in 2017.

Slavit, D., Nelson, T. H., & Lesseig, K. (2016). The teachers’ role in developing, opening, and nurturing an inclusive STEM-focused school. *International Journal of STEM Education* 3(1), 1-17. DOI:10.1186/s40594-016-0040-5.

Lesseig, K., Nelson, T. H., Slavit, D., & Seidel, R. (2016). Supporting middle school teachers’ implementation of STEM design challenges. *School Science and Mathematics* 116(4), p. 177-188. DOI: 10.1111/ssm.12172

Slavit, D., Nelson, T. H., & Deuel, A. (2013). Teacher groups’ conceptions and uses of student-learning data. *Journal of Teacher Education* 64(1); 8-21.

Nelson, T. H., Slavit, D., & Deuel, A. (2012). Two dimensions of an inquiry stance toward student learning data. *Teachers College Record* 114(8), 1-42.

Slavit, D., Kennedy, A., Lean, Z., Nelson, T.H., & Deuel, A. (2011). Support for professional collaboration in middle school mathematics: A complex web. *Teacher Education Quarterly* 38(3), 113-131.

- Kennedy, A., Deuel, A., Nelson, T. H., & Slavit, D. (2011). Requiring collaboration or distributing leadership? *Phi Delta Kappan* 29(8), 20-24.
- Slavit, D., Nelson, T. H., & Kennedy, A. (2010). Laser focus on content strengthens teacher teams. *Journal of Staff Development* 31(5), 18-20, 22.
- Nelson, T. H., LeBard, L., & Waters, C. (2010). How to create a professional learning community. *Science and Children* 47(9), p. 36-40.
- Slavit, D. & Nelson, T. H. (2010). Collaborative teacher inquiry as a tool for building theory on the development and use of rich mathematical tasks. *Journal of Mathematics Teacher Education*, 13, 201-221.
- Nelson, T. H., Deuel, A., Slavit, D., & Kennedy, A. (2010). Leading deep conversations in collaborative inquiry groups. *The Clearing House* 83(5), p. 175-179.
- Deuel, A., Nelson, T. H., Slavit, D., & Kennedy, A. (2009). Looking at student work. *Educational Leadership*, 67(3), 60-72.
- Nelson, T. H. (2009). Teachers' collaborative inquiry and professional growth: Should we be optimistic? *Science Education*, 93(3), 548-580.
- Nelson, T. H. (2008). Making the hidden explicit: Learning about equity in K-8 preservice science education. *Journal of Science Teacher Education*, 19(3), 235-254.
- Nelson, T. H., Slavit, D., Perkins, M., & Hathorn, T. (2008). A culture of collaborative inquiry: Learning to develop and support professional learning communities. *Teachers College Record*, 110(6), 1269-1303.
- Nelson*, T. H. & Slavit*, D. (2008). Supported teacher collaborative inquiry. *Teacher Education Quarterly*, 35(1), 99-116. (*equal contributions as authors)
- Nelson, T. H. & Slavit, D. (2007). Collaborative inquiry amongst science and mathematics teachers in the U.S.A.: Professional learning experiences through cross-grade, cross-discipline dialogue. *Journal of In-Service Education*, 33(1), 23-39.
- Slavit, D. & Nelson, T. H. (2006). Dialogic teacher change: Two cases of supported collaborative inquiry. *Working Papers on Culture, Education and Human Development*, 2(2). <http://www.uam.es/otros/ptcedh/>
- Nelson, T. H. (2005). Knowledge interactions in teacher-scientist partnerships: Negotiation, consultation, and rejection. *Journal of Teacher Education*, 56(4), 382-395.
- Nelson, T. H. (2004, March). Helping students make connections. *The Science Teacher*, 71(3), 32-35.

Moscovici, H. & Nelson, T. H. (1998). Shifting from activitymania to inquiry. *Science & Children*, 35(4), 14-17.

OTHER BOOKS AND BOOK CHAPTERS

Slavit, D., Deuel, A., & Nelson, T. H. (2017). The development and use of student-learning data tools as formative mathematics assessments. *2017 Annual perspectives in mathematics education*. Reston, VA: The National Council of Teachers of Mathematics, p. 167-181

Slavit, D. & Nelson, T.H. (2015). How changes in instruction force changes in assessment: The case of an inclusive STEM-focused school. *2015 Annual perspectives in mathematics education*. Reston, VA: The National Council of Teachers of Mathematics.

Slavit, D., deVincenzi, A., Lesseig, K., Nelson, T.H., & Ernst-Slavit, G. (2014). Developing an improving stance toward research in preservice teachers. In P. Blessinger & J. M. Carfora (Eds.) *Inquiry-based learning for the arts, humanities, and social sciences: A conceptual and practical resource for educators* (pp. 455-474). Bingley, U.K.: Emerald Publishing.

Nelson, T. H. (2009). Building leadership capacity by nurturing community. In Wieseman, K. & Weinburgh, M. (Eds.) *Becoming and leading in the K-16 science education community: Women's experiences*. Springer Publishing.

Slavit, D., Nelson, T. H., & Kennedy, A. (Eds.) (2009). *Perspectives on supported collaborative teacher inquiry*. New York: Routledge.

Slavit, D. & Nelson, T. H. (2009). Supported collaborative teacher inquiry. In Slavit, D., Nelson, T. H., & Kennedy, A. (Eds.) *Perspectives on supported collaborative teacher inquiry*. New York: Routledge.

Nelson, T. H., Kennedy, A., Deuel, A., & Slavit, D. (2009). The influence of standards and high-stakes test-related documents on teachers' collaborative inquiry. In D. Slavit, T. H. Nelson & A. Kennedy (Eds.), *Perspectives on supported collaborative teacher inquiry*. New York: Routledge.

Slavit, D., Laurence, W., Kennedy, A., & Nelson, T. H. (2009). Resource networks for collaborative teacher inquiry. In Slavit, D., Nelson, T. H., & Kennedy, A. (Eds.) *Perspectives on supported collaborative teacher inquiry*. New York: Routledge.

Kennedy, A., Slavit, D. & Nelson, T. H. (2009). Supporting collaborative teacher inquiry. In Slavit, D., Nelson, T. H., & Kennedy, A. (Eds.) *Perspectives on supported collaborative teacher inquiry*. New York: Routledge.

INVITED PUBLICATIONS

- Seidel, R., Lesseig, K., Nelson, T. H., & Slavit, D. (2016). Research to Practice Article: Implementing STEM design challenges in classrooms. *School Science and Mathematics Research to Practice*. (available online at <http://ssma.play-cello.com/wp-content/uploads/2016/03/April2016Seidel-et-al-STEM-Design-Challenges-1.pdf>)
- Nelson, T. H., Deuel, A., Slavit, D., & Kennedy, A. (2014). Leading deep conversations in collaborative inquiry groups (adapted from 2010 publication). My Digital Chalkboard: Where California Educators Collaborate. <https://www.mydigitalchalkboard.org/portal/default/Resources/Viewer/ResourceViewer?action=2&resid=510291>
- Nelson, T. H. (2009). Review of the book *Teachers in professional communities* by A. Lieberman & L. Miller. *Teachers College Record*, Date Published: February 09, 2009. <http://www.tcrecord.org>
- Nelson, T. H. (2005, September). Paying attention to equity in preservice science teaching: Bridging K-12/13-20 science education in Washington. *Washington Science Teachers' Journal*, 45(3), 12-13.

REPORTS

- Nelson, T. H. & Slavit, D. (2012). A study of professional learning communities amongst secondary science and mathematics teachers. *Final Report to the National Science Foundation*.
- Nelson, T. H. & Slavit, D. (2012). A study of professional learning communities amongst secondary science and mathematics teachers. *Project Outcomes Report*. <http://www.research.gov>

REGIONAL PUBLICATIONS

- Slavit, D., Kennedy, A., Nelson, T., & Deuel, A. (2011). Reframing teacher leadership in the context of collaborative doing. *Curriculum in Context*, 37(1), p. 19-22. Note: Authors listed in alphabetical order in journal.
- Slavit, D., Nelson, T., Kennedy, A., & Laurence, W. (2007). The power of teachers working with teachers. *Curriculum in Context*, 34(1), p. 6-9.

CONFERENCE PROCEEDINGS

- Slavit, D., Nelson, T. H., Deuel, A. F., & Mason, M. (2011). A framework for analyzing teachers' use of data during collaborative inquiry. *Proceedings of the Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education*, Reno, NV.

Slavit, D., Nelson, T. H., Kennedy, A., Deuel, A. & Mason, M. (2009). Supporting collaborative teacher inquiry. *Proceedings of the Research on Collaborative Teacher Inquiry Conference*, Skamania, WA.

Nelson, T. H., Slavit, D., Deuel, A., Kennedy, A., & Mason, M. (2009). A three-dimensional theoretical framework for understanding teachers' use of classroom-based data in collaborative groups *Proceedings of the Research on Collaborative Teacher Inquiry Conference*, Skamania, WA.

EXTERNAL GRANTS RECEIVED

Geary, E., Antilla, J., Baldwin, K., Dechaine-Berkas, J., & Nelson, T. H. (2016). *Collaborative research: The next generation of STEM teacher preparation in Washington State*. National Science Foundation Improvement of Undergraduate Education program. \$3 million collaborative project with WWU, SPU, EWU, CWU, and WSUV. This includes:

Nelson, T. H. (PI), Kruse, S., Morrison, J., & Rollwagen-Bollens, G. (2016). *Collaborative Research: The Next Generation of STEM Teacher Preparation in Washington State*. National Science Foundation; 9/2016 – 9/2020; \$296,234 as a sub-award.

Rollwagen-Bollens, G., Nelson, T. H., & Bollens, S. *Columbia River Estuary Science Education and Outreach (CRESCENDO): A Landscape-scale University-High School Partnership Integrating Scientific and Educational Research*. Washington Sea Grant; 2/1/16 – 1/31/18; \$219,570.

Lesseig, K. (PI), Siegel, R. (Co-PI), Nelson, T. H., Ferguson, G., Dimitrov, A., Kennedy, C., Archer, T., Rhodes, H., Bluestein, S., Walker, C., and Jones, K. (2013). *Increased STEM achievement through multi-level learning inquiry teams (STEM-LIT)*. Federal ESEA, Title II Part B/Office of the Superintendent of Public Instruction Mathematics and Science Partnership Award. A 3-year, \$750,000 project. (Budget management through ESD 112)

Nelson, T. H. (Primary Investigator), Slavit, D. (Co-P.I.). (2008). Supplement to *A study of professional learning communities amongst secondary science and mathematics teachers: Changes, support systems, and student learning*. National Science Foundation Teacher Professional Continuum Award. \$21,936 funded.

Rollwagen-Bollens, G. (Primary Investigator), Bollens, S. M., Kennedy, A., Lock, B., Nelson, T. H., & Tissot, B. (2008-present). *Global change in a local context: Partners in discovery of the Columbia River watershed*. National Science Foundation GK12 Award. \$2.7 million funded for a 5 year project.

Nelson, T. H. (Primary Investigator), Slavit, D. (Co-P.I.). (2006-2012). *A study of professional learning communities amongst secondary science and mathematics*

teachers: Changes, support systems, and student learning. National Science Foundation Teacher Professional Continuum Award. \$383,174 funded for 2006-07; \$446,156 funded for 2007-08, \$451,436 funded for 2008-09, \$459,566 funded for 2009-2010 of a \$1.9 million, 4.5-year project.

Nelson, T. H. & Slavit, D. (Co-Primary Investigators). (2004-2007). *Partnerships for Reform in Secondary Science & Mathematics* (PRiSSM). Department of Education Title IIB/Office of the Superintendent of Public Instruction Award. A 3-year, \$1.4 million project.

Nelson, T. H. & Slavit, D. (Co-Primary Investigators). (2003). *Improving Instruction through Exemplars in Mathematics & Science* (IITEMS). Office of the Superintendent of Public Instruction. \$90,739 funded.

CONFERENCE ORGANIZATION – NATIONAL & REGIONAL

Kennedy, A., Slavit, D., & Nelson, T. H. (May, 2010). Co-creator and organizer, *Supporting Teacher Collaboration: A Work Session for PLC Leaders*. Pack Forest, WA. Funded by the National Science Foundation.

Kennedy, A., Slavit, D., & Nelson, T. H. (February, 2010). Co-creator and organizer, *Case Study Development Retreat*. Anderson Lodge, WA. Funded by the National Science Foundation.

Slavit, D., Nelson, T. H., & Kennedy, A. (May, 2009). Co-creator and organizer, *Research on Collaborative Teacher Inquiry Conference*. Skamania, WA. Funded by the National Science Foundation.

PRESENTATIONS AT PROFESSIONAL MEETINGS

Rollwagen-Bollens, G., Holmlund, T., Bollens, S., Zimmerman, J., & Wait, J. (February, 2018). Engaging high school students as collaborators in university-level estuarine ecology research: Lessons from the “Columbia River Estuary Science Education and Outreach” (CRESCENDO) project. Poster presentation at the Association for the Sciences of Limnology and Oceanography Ocean Sciences conference. Portland, OR.

Baldwin, K., Berger, M., Eggers, A., Geary, E. Holmlund, T, Morrison, J., Nolet, V., Rollwagen-Bollens, G., Nollmeyer, G., & Watson, T. F. (December, 2017). Education for sustainability in Washington State’s K-12 teacher preparation programs. Poster presentation at the Hawaiian International Conference on Education. Honolulu, HI.

Holmlund, T. D. & Huggins, K. S. (October, 2017). Leadership for the implementation of a STEM education plan. Interactive presentation at the National STEM Education Research & Practice Summit. Purdue University, IN.

- Holmlund, T. D. & Geary, E. (October, 2017). The next generation of STEM teacher preparation in Washington State. Interactive presentation at the National STEM Education Research & Practice Summit. Purdue University, IN.
- Morrison, J., Lesseig, K., Firestone, J., Holmlund, T., & Slavitt, D. (October, 2017). Exploring teaching, learning, and culture in STEM schools across elementary, middle, and high school levels. Interactive presentation at the National STEM Education Research & Practice Summit. Purdue University, IN.
- Nelson, T. H. & Huggins, K. S. (April, 2017). Implementing STEM education at a district level. Poster presentation at the National Association for Research in Science Teaching. San Antonio, Texas.
- Nelson, T. H., Lesseig, K., & Slavitt, D. (March, 2017). Making sense of STEM education in K-12 contexts and the implications for professional development. Interactive presentation at the National Science Teachers Association National Conference. Los Angeles, CA.
- Nelson, T. H., Goodwin, J, Kent, A., Kenworthy, F., & Reynosa, J. (November, 2016). Implementing elementary STEM design challenges. Poster presentation at the National Science Teachers Association Regional Conference. Portland, OR.
- Nelson, T. H., Lesseig, K., & Slavitt, D. (November, 2016). What does STEM education look like in a 6th-12th grade classroom? Interactive presentation at the National Science Teachers Association Regional Conference. Portland, OR.
- Slavitt, D., Lesseig, K., Nelson, T. H., & deVincenzi, A. (October, 2016). What is STEM education: Views and examples from the field. Presentation at the 55th annual meeting of the Northwest Mathematics Conference. Yakima, WA.
- Baldwin, K., Egger, A., Geary, E., Nelson, T. H., & Nollmeyer, G. (September, 2016). The next generation of education for sustainability. Paper presentation at the annual meeting of the Geological Society of America. Denver, CO.
- Geary, E., Antilla, J., Baldwin, K., Clark-Blickenstaff, J., Dechaine, J., Ebert, E., Hanley, D., Nelson, T.H., Rios, J., Ronca, R., & Wright-Mockler, A. (September, 2016). Adapting Washington State's teacher preparation programs to support implementation of the Next Generation Science Standards. Oral presentation at the annual meeting of the Geological Society of America. Denver, CO.
- Nelson, T. H., Lesseig, K., & Slavitt, D. (April, 2016). Varying conceptualizations of "STEM Education" and the implications for professional development. Poster presentation at the annual meeting of the National Association for Research in Science Teaching. Baltimore, MD.

- Nelson, T. H., Lesseig, K., & Slavit, D. (March, 2016). Implementing STEM design challenges at the middle school level. Interactive workshop presented at the National Science Teachers Association International Conference. Nashville, TN.
- Nelson, T. H., Lesseig, K., & Slavit, D. (March, 2016). Making sense of STEM education in a K-12 context. WSU Academic Showcase. Pullman, WA.
- Lesseig, K., Slavit, D., & Nelson, T. H. (January, 2016). Mathematics teachers making sense of STEM through the use of engineering design challenges. Presentation at the Association of Mathematics Teacher Educators. Irvine, CA
- Nelson, T. H., Lesseig, K., Slavit, D., Kennedy, C., & Seidel, R. (April, 2015). Supporting middle school teachers' implementation of STEM design challenges. Individual paper presentation at the annual meeting of the National Association for Research in Science Teaching. Chicago, IL.
- Nelson, T. H., Lesseig, K., Slavit, D., & Seidel, R. (March, 2015). Middle school teachers' learning about STEM education through the implementation of design challenges. WSU Academic Showcase. Pullman, WA.
- Nelson, T. H. & Iremonger, C. I. (March, 2015). Learning from the first two years of an inclusive, STEM-focused, project-based secondary school. Interactive workshop presented at the National Science Teachers Association International Conference. Chicago.
- Nelson, T. H., Lesseig, K., & Slavit, D. (2015). Middle school teacher and student learning through project-based STEM education. Themed paper set (with J. Morrison & J. Firestone) at the annual meeting of the Association for Science Teacher Education, Portland, OR.
- Nelson, T. H. & Slavit, D. (2015) STEM teacher preparation at WSU. Poster presentation at the Washington State Forum on STEM Teacher Preparation. Seattle, WA.
- Nelson, T. H. & Slavit, D. (2014). Implementing project-based learning in a new STEM-focused secondary school. Individual paper presentation at the annual meeting of the National Association for Research in Science Teaching, Pittsburgh.
10.13140/2.1.1309.6008
- Nelson, T. H., Slavit, D., Burns, H., & de Vincenzi, A. (2014). Implementing project-based learning in a new, inclusive STEM-focused secondary school. Poster presentation at the WSU Vancouver Research Showcase.
- Slavit, D., Iremonger, C., & Nelson, T.H. (2014). Supporting school-wide efforts to enact project-based learning in mathematics. Paper presented at the 18th Annual Meeting of the Association of Mathematics Teacher Educators. Irvine, CA.

- Nelson, T. H., Holm, J., & Meade, D. (2013). Implementing interdisciplinary STEM projects, Year 1. One hour interactive workshop at the National Science Teachers Association regional conference, Portland, OR.
- Nelson, T. H., Simpson, L., & Iremonger, C. (2013). Connecting students and community in a new STEM-focused school. One hour interactive workshop at the National Science Teachers Association regional conference, Portland, OR.
- Slavit, D. Nelson, T. H., & Deuel, A. (2013). Teacher talk during collaborative inquiry: Results of a three-year analysis. Poster presentation at the annual meeting of the American Educational Research Association. San Francisco, CA.
- Slavit, D., deVincenzi, A., Castro, E, Nelson, T. H., & Ernst-Slavit, G. (2013). Developing an improving stance toward research in preservice teachers. Poster presentation at the annual meeting of the American Educational Research Association. San Francisco, CA.
- Nelson, T. H., Slavit, D., & Deuel, A. (2013). Teachers' collaborative inquiry into scientific models: Making sense of standards. Individual paper presentation at the annual meeting of the National Association for Research in Science Teaching. Puerto Rico.
- Slavit, D, Roth-McDuffie, A., Lesseig, K. & Nelson, T.H. (2013, January). Establishing STEM-focused schools with diverse student populations. 17th Annual Conference of the Association of Mathematics Teacher Educators.
- Slavit, D. Nelson, T. H., & Deuel, A. (2012). What do teachers mean by “student learning data”? Poster presentation at the WSU Academic Showcase and WSUV Research Showcase.
- Slavit, D., Nelson, T. H., & Deuel, A. (2012). How teachers use and discuss student-learning data: A multi-case analysis. Roundtable presentation at the annual meeting of the American Educational Research Association. Vancouver, British Columbia.
- Nelson, T. H., Slavit, D., & Deuel, A. (2012). The nature of teachers' collaborative use of student learning data. Symposium at the annual meeting of the American Educational Research Association. Vancouver, British Columbia.
- Nelson, T. H., Slavit, D., & Deuel, A. (2012). Talking about student learning: Science and mathematics teachers' collaborative inquiry processes. Individual paper presentation at the annual meeting of the National Association for Research in Science Teaching. Indianapolis, IN.
- Rollwagen-Bollens G., T. Nelson, A. Kennedy, B. Lock, M. Graves, S. Bollens, B. Tissot. (2012). Building scientist-teacher collaborations to support student learning and inquiry skills.” Ecological Society of America Annual Meeting. Portland, OR.

- Rollwagen-Bollens G., B. Lock, M. Graves, T. Nelson, A. Kennedy, B. Tissot, S. Bollens, K. James. (2012). Partners in Discovery of the Columbia River Watershed GK-12 Project: Building Lasting Collaboration through Scientist-Teacher Partnerships. National Science Foundation GK-12 Program Annual Meeting. Washington, DC.
- Rollwagen-Bollens G., B. Lock, M. Graves, S. Bollens, B. Tissot, T. Nelson, A. Kennedy. (2012). Partners in Discovery GK-12 project at WSU Vancouver: Building scientist-teacher collaborations to support student learning and inquiry skills. 2012 Urban Ecology and Conservation Symposium. Portland, OR.
- Slavit, D., Nelson, T. H., Deuel, A. F., & Mason, M. (October, 2011). A framework for analyzing teachers' use of data during collaborative inquiry. Poster presented at the Annual Meeting of the North American Chapter of the International Group for the Psychology of Mathematics Education. Reno, Nevada.
- Nelson, T. H., Deuel, A., Slavit, D., & Mason, M. (2011). Middle school science teachers' uses of student learning data in collaborative teacher inquiry. Poster presentation at the WSUV Research Showcase. Vancouver, WA.
- Nelson, T. H., Deuel, A., Slavit, D., & Mason, M. (2011). Teachers' Engagement with Student Learning Data in a Collaborative Inquiry Cycle. Individual paper presentation at the annual meeting of the National Association for Research in Science Teaching. Orlando, FL.
- Kennedy, A., Deuel, A., Slavit, D., & Nelson, T. H. (2011). The role of distributed leadership in the development of a rural school professional learning community. Paper presentation at the annual meeting of the American Educational Research Association. New Orleans, LA.
- Rollwagen-Bollens, G. S., Bollens, S, Tissot, B., Nelson, T. H., Kennedy, A., & Locke, B. (2010). Partners in Discovery of the Columbia River Watershed GK-12 project: Connecting kids to their environment through student-driven research. ASLO-AGU Ocean Sciences Meeting. Portland, OR.
- Nelson, T. H., & Slavit, D. (2010). Developing teacher leaders as facilitators of collaborative inquiry groups. Paper presentation at the annual meeting of the American Educational Research Association. Denver, CO, May 2.
- Slavit, D., McDuffie, A. R., & Nelson, T. H. (2010). Self-directed teacher learning in collaborative contexts. Roundtable presentation at the annual meeting of the American Educational Research Association. AERA, Denver, CO, May 2.
- Nelson, T. H. (2009). Collaborative inquiry in PLCs: Linking inquiry questions, learning expectations, and classroom data collection. One hour interactive workshop at the National Science Teachers Association regional conference, Phoenix, AZ.

- Nelson, T. H., Waters, C., & LeBard, L. (2009). Using classroom-based data to inform teaching. One hour interactive presentation at the National Science Teachers Association regional conference, Phoenix, AZ.
- Nelson, T. H., LeBard, L., & Waters, C. (2009). Collaborative inquiry in PLCs: Using focus questions and classroom-based data to improve teaching and learning. One hour interactive presentation at the National Science Teachers Association regional conference, Phoenix, AZ.
- Nelson, T. H. (2009). Supporting teacher research: Inquiry, dialogue, engagement – A report on 4 year’s work. Poster presentation at annual NSF DRK12 Principal Investigator’s meeting. Washington, D.C.
- Nelson, T. H., Slavit, D., and Deuel, A. (2009). Three dimensions of teachers’ collaborative inquiry: Using data to improve science teaching & learning. Individual paper presentation at the annual meeting of the National Association for Research in Science Teaching. Garden Grove, CA.
- Nelson, T. H. & Waters, C. (2009). Using classroom-based data to inform teaching. Invited symposium participant on Engaging with Teachers around Science Education Research at the annual meeting of the National Association for Research in Science Teaching. Garden Grove, CA.
- Nelson, T. H. (2009). The nature and role of collaborative inquiry in science and mathematics teachers’ professional growth. Presidential Invited Session: Simple Participatory Accelerated Research Kick-Offs (SPARK) Talks at the annual meeting of the National Association for Research in Science Teaching, Garden Grove, CA.
- Slavit, D. & Nelson, T. H. (2009). Moving away from a “proving” stance in teacher inquiry. Paper discussion at the annual meeting of the American Educational Research Association. San Diego, CA .
- Nelson, T. H. & Slavit, D. (2009). Three Dimensions of Teachers’ Collaborative Inquiry: Using Data to Improve Science Teaching & Learning. Poster presentation at the WSUV Research Showcase, Pullman WA and Vancouver, WA.
- Williams, M., Wanderscheid, S., Barta, D., & Nelson, T. (2009). Implementing professional learning communities. Interactive Presentation at the Office of the Superintendent of Public Instruction Winter Institute. Seattle, WA.
- Siegel-Vexler, S., Nelson, T. H., & Kubota, C. (2008). Leadership and Assistance in Science Education Reform: Connecting Higher Education and K-12 science teacher education. Full day workshop presented at the annual Teachers of Teachers of Science retreat. Pullman, WA.

- Nelson, T. H. (2008). Teachers' collaborative inquiry: Making sense of classroom-based data. Invited paper presentation at the National Science Teachers Association regional conference. Portland, OR.
- White, K., Johnson, K., Nelson, R., Schaadt, A., Goin, J., & Nelson, T. (2008). Teachers, Data & Supported Collaborative Inquiry. One-hour interactive presentation at the National Science Teachers Association regional conference. Portland, OR.
- Wanderscheid, S., Williams, M., Eldred, S., Waters, C., & Nelson, T. (2008). The Challenges and Successes of Supported Collaborative Inquiry. One-hour interactive presentation at the National Science Teachers Association regional conference. Portland, OR.
- Nelson, T. H., Kennedy, A., & Slavit, D. (2008). Teachers' collaborative inquiry: Making sense of classroom-based data. Poster presentation at annual NSF DRK12 Principal Investigator's meeting. Washington, D.C.
- Nelson, T. H. (2008). Collaborative inquiry in professional learning communities: Linking inquiry questions to learning expectations and classroom data collection. Interactive Presentation at the Office of the Superintendent of Public Instruction Summer Institute. Tacoma, WA.
- Waters, C. & Nelson, T. H. (2008). Collaborative inquiry in professional learning communities: Collecting and analyzing classroom data. Interactive Presentation at the Office of the Superintendent of Public Instruction Summer Institute. Tacoma, WA.
- Nelson, R., Schaadt, A. & Nelson, T. H. (2008). Collaborative inquiry in professional learning communities: Developing an inquiry question. Interactive Presentation at the Office of the Superintendent of Public Instruction Summer Institute. Tacoma, WA.
- Nelson, T. H. & Slavit, D. (April, 2008). Collaborative teacher research: Does it improve learning? Invited one-hour presentation at the WSU Research Showcase. Vancouver, WA.
- Nelson, T. H., Slavit, D., Laurence, W. L., LeBard, L., Wanderscheid, S., Waters, C., & Williams, M. (April, 2008). Improving our practice: Teachers' stories about supported collaborative inquiry. Poster presented at the WSU Research Showcase. Vancouver, WA.
- Slavit, D. & Nelson, T. (April, 2008). The depth of dialogue in secondary teachers' inquiry into using rich mathematics tasks to stimulate student participation. Poster presented at the WSU Research Showcase. Vancouver, WA.
- Nelson, T. H., Slavit, D., & Deuel, A. (March, 2008). Teachers' collaborative inquiry: Making sense of classroom-based data. Individual paper presentation at the annual meeting of the National Association for Research in Science Teaching. Baltimore, MD.

- Nelson, T. H., Laurence, W. L., LeBard, L., Wanderscheid, S., Waters, C., & Williams, M. (March, 2008). Improving our practice: Teachers' stories about supported collaborative inquiry. Poster presentation at the annual meeting of the National Association for Research in Science Teaching. Baltimore, MD.
- Laurence, W. L., LeBard, L., Nelson, T. H., Wanderscheid, S., Waters, C., & Williams, M. (March, 2008). Empowering teachers: Teachers advancing learning through inquiry. One-hour interactive presentation at the National Science Teachers Association national conference. Boston, MA.
- Slavit, D., Nelson, T. H., Laurence, W., & Kennedy, A. (March, 2008). Inquiry into Inquiry into Inquiry: Finding out what counts as support in SCTI. Paper presentation/Symposium at the Annual Meeting of the American Educational Research Association, New York.
- Nelson, T. H., Johnson, K., & Schaadt, A. (January, 2008). *Learning about science teaching, learning, and standards through collaborative inquiry*. Individual paper presentation at the Association for Science Teacher Education international conference. St. Louis, MO.
- Nelson, T. H., Slavit, D., Kennedy, A., Laurence, W., & Foster, A. (September, 2007). Supporting teacher research: Inquiry, dialogue, and engagement. Poster presentation at the annual National Science Foundation DR K-12 PI meeting. Washington, DC.
- Nelson, T. H. (April, 2007). *Supported collaborative inquiry and teacher learning*. Individual paper presentation at the annual meeting of the National Association for Research in Science Teaching. New Orleans, LA.
- Nelson, T. H., Bornemann, G., & Nelson, R. (April, 2007). *Teachers' reflections on supported collaborative inquiry in professional learning communities*. Poster presentation at the annual meeting of the National Association for Research in Science Teaching. New Orleans, LA.
- Nelson, T. H., Slavit, D., Laurence, W. & Foster, A. (April, 2007). *The dynamics of situated growth and development through supported collaborative inquiry*. Individual paper presentation at the annual meeting of the American Educational Research Association. Chicago, IL.
- Slavit, D. & Nelson, T. H. (April, 2007). *Supported teacher collaborative inquiry*. Individual paper presentation at the annual meeting of the American Educational Research Association. Chicago, IL.
- Nelson, T. H., Slavit, D., & Foster, A. (March, April, 2007). *Supported collaborative inquiry and teacher learning*. Poster presentations at WSU Research Showcases. Pullman,

WA. Vancouver, WA.

Nelson, T. H. (January, 2007). *Seeking the optimistic premise in professional learning communities*. Individual paper presentation at the Association for Science Teacher Education international conference. Clearwater, FL.

Nelson, T. H., Waters, C., & White, K. (January, 2007). *Professional learning communities in science and mathematics: Collaborative inquiry for improving teaching and learning*. Poster presentation at the Association for Science Teacher Education international conference. Clearwater, FL.

Slavit, D. & Nelson, T. H. (January, 2007). *Inquiry and collaboration in support of teacher change: Stories of secondary school mathematics teachers*. Paper presented at the 10th Annual Meeting of the Association of Mathematics Teacher Educators, Irvine, CA.

Nelson, T. H. (April, 2006). *Making the hidden explicit*. Individual paper presentation at the annual meeting of the American Educational Research Association. San Francisco, CA.

Nelson, T. H. (April, 2006). *A culture of collaborative inquiry: Learning to develop and support professional learning communities*. Individual paper presentation at the annual meeting of the National Association for Research in Science Teaching. San Francisco, CA.

Nelson, T. H., Bornemann, G., Goss, L., & White, K. (April, 2006). *Professional learning communities: Teachers' stories of supported collaborative inquiry*. Roundtable session at the annual meeting of the National Association for Research in Science Teaching. San Francisco, CA.

Nelson, T. H. (January, 2006). *Supported collaborative inquiry: Science and mathematics teachers working together toward high quality learning and teaching*. Individual paper presentation at the Association for Science Teacher Education international conference. Portland, OR.

Wieseman, K. C., Gilmer, P. J., Koch, J., Moscovici, H., Nelson, T. H., Osisioma, I., Simpson, P. R., Spector, B. S., Yeotis, C. G. (January, 2006). *Leadership development valuing women's ways of knowing: Personal capacity and leadership cultures valued institutionally and in professional science teacher education*. Two-hour workshop at the Association for Science Teacher Education international conference. Portland, OR.

Nelson, T. H., Goss, L., Thedell, T., & White, K. (January, 2006). *Teacher stories: Collaborative inquiry into high quality learning and teaching*. Roundtable presentation at the Association for Science Teacher Education international conference. Portland, OR.

- LaGuardia, A., LeFevre, D., Margolis, J., & Nelson, T.H. (2005). *The impact of globalistic thinking on the education of culturally diverse populations and teacher preparation in the Northwest*. Symposium presented at the International Globalization, Diversity, and Education Conference. Pullman, WA.
- Nelson, T. H. (2005). *Partnership for Reform in Secondary Science and Mathematics*. Roundtable presentation at the Association for the Education of Teachers in Science annual conference. Colorado Springs, CO.
- Nelson, T., Goss, L., Thedell, T., & Yates, G. (2005). *Teacher stories: Impact of professional learning communities on classroom practice*. One hour interactive presentation at the OSPI Summer Conference. Wenatchee, WA.
- Nelson, T., Bornemann, G., Burkhart, G., & Hathorn, T. (2005). *Educational change through collaboration and inquiry*. One hour interactive presentation at the Washington Educational Research Association. SeaTac, WA.
- Nelson, T. H. *Enacting project-based science*. (2004). One hour interactive presentation at the National Science Teachers Association regional conference. Seattle, WA.
- Nelson, T. H. *Learning about equity in science education*. (2004). Paper presentation at the National Science Teachers Association regional conference. Seattle, WA.
- Nelson, T. H. & Kubota, C. *Science educators' perceptions of professional development*. (2004). Experiential session at annual state-wide meeting of the Teachers of Teachers of Science (TOTOS). Pullman, WA.
- Nelson, T. H. *Dialogic inquiry into science teaching & learning through school-university partnerships*. (2004). Individual paper presentation at the annual meeting of the American Educational Research Association. San Diego, CA.
- Nelson, T. H. *Negotiating knowledge in school-university partnerships*. (2004). Individual paper presentation at the annual meeting of the National Association for Research in Science Teaching. Vancouver, British Columbia, Canada.
- Nelson, T. H. *Enacting project-based science*. (2003). Three-hour interactive presentation at the Washington Science Teachers Association state conference. Pullman, WA.
- Finley, S., Gillman, C., LeFevre, D., Linden, M. A., Nelson, T. H., & Norris, J. (2003). *Using readers theatre to tease out issues of interpretation and translation in qualitative research*. Research-based dramatic presentation at the Fourth International Interdisciplinary Conference: Advances in Qualitative Methods. Banff, Alberta, Canada.

- Nelson, T. H. (2002). *Negotiation of knowledge: Partnerships for inquiry-based science*. Individual paper presentation at the annual meeting of the American Educational Research Association, New Orleans, LA.
- Nelson, T. H. (2002). *Negotiating expertise in partnerships between middle school science teachers and graduate fellows*. Individual paper presentation at the annual meeting of the National Association for Research in Science Teaching, New Orleans, LA.
- Nelson, T. H. & Pratt, D. (2002). *Partnership for research in inquiry-based math, science, and engineering education: Designs for professional development*. Presentation at the National Science Teachers Association regional conference, San Diego, CA.
- Nelson, T. H. (2002). *Age-appropriate curriculum in fire prevention education*. Invited presentation at the 2002 Pacific Northwest Coordinating Group Fire Prevention Co-op Workshop and Oregon Fire Marshal's Association Annual Conference. (Invited).
- Nelson, T. H. (2001). *A science teacher's wisdom of practice in teaching inquiry-based oceanography*. Individual paper presentation at the annual meeting of the American Educational Research Association, Seattle, WA.
- Nelson, T. H. (2000). *Teaching science for empowerment and understanding: Girls and advanced oceanography*. Individual paper presentation at the annual meeting of the National Association for Research in Science Teaching, New Orleans, LA.
- Doyle, M., Hart, P., Nelson, T.H., Jay, J., Pynchon, S., & Sung, L. (1999). *Pedestals and potholes: Professional development strategies in context*. A two-hour interactive session for district administrators and professional developers at the annual conference of the National Staff Development Council, Dallas, TX.
- Nelson, T. H. (1999). *Project-based science: Scientific literacy through environmental studies*. Roundtable presentation at the annual meeting of the American Educational Research Association, Montreal, Canada.
- Nelson, T. H. (1997). *Project-based, interdisciplinary environmental science*. Western Washington University - Science, Math & Technology open house. (Invited).
- Nelson, T. H. (1996). *Interdisciplinary high school environmental studies*. Interactive session at the Environmental Education Resources for Teachers Conference, Ladner, B. C. (Invited).
- Nelson, T. H. (1996). *Interdisciplinary high school environmental studies*. Seminar for the American Cultural Exchange, Seattle University, Seattle, WA. (Invited).
- Nelson, T. H. (1994). *Interdisciplinary high school environmental studies*. Invited presentation at the Environmental Protection Agency/Superintendent of Public Instruction environmental education teacher inservice retreat. Pack Forest, WA.

DeGrow, G., Nelson, T. H., & Searle, P. (1993). *Connections and Consequences: An interdisciplinary course for high school juniors*. An interactive presentation at the Washington State Science Teachers Association Regional Conference, Everett, WA.

Nelson, T. H. (1993). *Project-based environmental science*. Presentation to the Environmental Education Association of Washington annual conference, Ellensburg, WA.

DeGrow, G., Nelson, T. H., & Searle, P. (1993). *Teaching high school science, American literature, and U. S. history using a project-based, interdisciplinary approach*. Presentation at the annual conference of the Washington State Association for Supervision and Curriculum Development, Tacoma, WA.

INTERNATIONAL PRESENTATIONS

Nelson, T. H. (2014). A theoretical framework for understanding and supporting collaborative teacher inquiry. Presentation to the College of Education, University of Auckland. New Zealand, March 11, 2014.

Nelson, T. H. (2014). Project-based learning in inclusive STEM-focused secondary schools. Brown bag presentation to STEM education faculty, College of Education, University of Auckland. New Zealand. March 10, 2014.

Nelson, T. H. (2014). Talking about student learning: Science & mathematics teachers' collaborative inquiry processes. Presentation to the Professional Learning and Development Advisory Group, New Zealand Ministry of Education, March 4, 2014.

Nelson, T. H. (2010). Two dimensions of an inquiry stance: A theoretical model for understanding and supporting teachers' collaborative work. Interactive seminar presented to the Psychology and Education departments at the Universidad Autonoma de Madrid, April 9, 2010.

INVITED PRESENTATIONS - NATIONAL

Nelson, T. H. (October, 2015). Making sense of STEM education: Professional development and classroom implementation. Center for Research in Mathematics and Science Education Colloquium. San Diego State University, CA.

Nelson, T. H. (October, 2009). Three dimensions of collaborative inquiry: Examining teachers' use of data to improve science teaching and learning. Center for Research in Mathematics and Science Education Colloquium, San Diego State University, CA.

Nelson, T. H. (October, 2009). Teacher talk and use of student learning data in professional learning communities: Opportunities, challenges, and affordances. Presentation to Dr. Hilda Borko's doctoral seminar "Research on Teaching" at Stanford University, CA.

INVITED PRESENTATIONS – REGIONAL, STATE, & LOCAL

- Holmlund, T. (September, 2017). Research on STEM education in Washington State. WSU STEM Education Research Summit. Pullman, WA.
- Nelson, T. H. (October, 2013). Project-based learning in inclusive, STEM-focused secondary schools. Brown bag presentation to the WSU College of Education.
- Nelson, T. H. (September, 2011). Teaching for understanding in K-12 science and mathematics. Washington State Academy of Sciences Annual Meeting, Seattle, WA.
- Nelson, T. H. (October, 2011). A longitudinal study of a professional development model: Teachers' professional learning communities. Interactive presentation to the University Scholars Honors Program, Washington State University Vancouver.
- Nelson, T. H. (April, 2011). Examining science discourse. Vancouver Public Schools Seminar Series, Vancouver, WA.
- Nelson, T. H. (May, 2010). What do we know about successful collaborative teacher inquiry groups? Interactive seminar presented to the Teacher Leadership cohort at The Evergreen State College.
- Nelson, T. H. & Slavit, D. (January, 2010). How teachers use data. Poster presented at the meeting of the WSU Board of Regents, Vancouver, WA.
- Nelson, T. H. (May, 2009). What have we learned about successful collaborative teacher inquiry groups? Interactive seminar presented to the Teacher Leadership cohort at The Evergreen State College.
- Nelson, T. H. (March, 2009). Supported collaborative teacher inquiry: The PRiSSM model and lessons learned. Washington State LASER Steering Committee meeting. Seattle, WA.
- Nelson, T. H. & Slavit, D. (March, 2009). PRiSSM and STRIDE. Presentation to the WSU College of Education Advocacy Board, Pullman, WA.
- Nelson, T. H. & Slavit, D. (January, 2009). Collaborative teacher professional development. Presentation at the WSUV Alumni Networking Event, Vancouver, WA.

MEDIA INTERVIEWS & ARTICLES

- McMurray, K. (March, 2018). Collaborative effort to transform STEM teacher preparation. WSU Insider. <https://insider.wsu.edu/2018/03/01/collaborative-effort-to-transform-stem-teacher-preparation-programs/>
- Brincks, R. (January, 2015). STEM. Alaska Airlines Magazine, p. 64-73.

HONORS & AWARDS

- 2015 Berry Family Fellowship
- 2012 Excellence in External Funding Award, Dept. of Teaching and Learning, WSU College of Education.
- 2011 Networking & Collaboration Award, WSU College of Education.
- 2010 WSU Top 150 Faculty Researchers.
- 2008 WSU Vancouver Chancellor's Research Excellence Award.
- 2007 Invited to participate in the National Commission on Teaching and America's Future Wingspread Conference on the Induction of Science and Mathematics Teachers into Professional Learning Communities.
- 2006 Nominated for the Kappa Delta Pi/AERA Division K Early Career Award.
- 2003 Nominated for WSU Vancouver Teaching Award.
- 1994 Washington State Association for Supervision and Curriculum Development Award for Excellence. An award recognizing the interdisciplinary program developed and implemented at Snohomish High School.
- 1994 Magic Apple Grant Recipient. Washington State Department of Ecology monetary award for environmental studies class at Snohomish High School. 1994
- 1994 Stillaguamish-Snohomish Enhancement Task Force Grant Recipient. Financial support for salmon mentorship between high school and elementary students, field excursions, and water quality testing equipment.

COURSES TAUGHT

- EdAd 510 Improvement of Instruction (MIT)
- EdPsy 502 Theoretical Foundations of Learning & Instruction (Ed.M)
- EdPsy 504 Classroom-Based Research (MIT)
- Biol 430 Secondary Science Methods (MIT)
- T&L 371 Elementary School Science Methods (K-8) (BA)
- T&L 445 Methods of Educational Technology (BA)
- T&L 521 Computer Technology for Education (MIT)
- T&L 522 Special Topics: Middle Level Science Education (MIT)
- T&L 523 Topics in Education (Ph.D)
- T&L 531 Frameworks for Research in Mathematics & Science Education (Ph.D)
- T&L 560 Research in Teaching (Ed.D)
- T&L 560 Research in Teaching STEM (Ed.D)
- T&L 572 K-8 Science Methods (MIT)
- T&L 574 Science for All: Culturally & Locally Responsive Science Teaching (Ed.M)
- T&L 584 Research in Teaching Mathematics & Science (Ph.D.)
- T&L 591 Research Internship in Mathematics & Science Education (Ph.D)
- T&L 702 Special Problems (MIT)
- UH 301 University Scholars Lecture Series
- UH 398 Honors Thesis Proposal Seminar
- UH 399 Honors Thesis Seminar

PROFESSIONAL MEMBERSHIPS

Association of Science Teacher Education (ASTE)
National Association for Research in Science Teaching (NARST)
National Science Teachers Association (NSTA)