Mark A. Windschitl

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Education

Ph. D. Curriculum and Instruction
Iowa State University 8/95
*University Research Excellence Award

Master of Science, Educational Research and Evaluation
Iowa State University 8/92

Teaching Certification, Iowa State University, 1981
Bachelor of Science, Zoology, Iowa State University, 1979

Recent Grants and Funding

Co-Principal Investigator: *Effective Novice Teachers: How Systems of Support Can Transform the Clinical Experience During Teacher Preparation.* $800,000. National Science Foundation. 2018-2021. This R&D project will use design principles from the information sciences to develop tools for supporting novice teachers during their clinical experiences. Novices and their mentors are treated as a dyad, learning together about the necessary conditions for and impacts of rigorous and responsive instruction. The UW will lead four institutions in this work; others include UC Santa Barbara, UC Irvine, and Boise State.

Key personnel: *PASTL project, creating a community of ambitious science teacher leaders*. $78,000. Puget Sound Educational Service District. This continues a four-year project that draws classroom teachers from Western Washington (Canadian border to the Peninsula to Tacoma) who want to improve instruction and work with members of their school community to improve as well. Features partnerships with three different ESDs, focuses on high needs schools.

Principal Investigator: *Mapping the Clinical Experience*. $800,000. National Science Foundation. 2015-2018. This project combines social network analyses and survey research to study the opportunities to learn for novice science teachers while in their field placements. Multi-institutional project includes UW, University of Wisconsin, University of California Irvine.

Principal Investigator: *Supporting early career teachers in science*. $168,000. Annenberg Foundation. 2014-2017. Goals of this project are to build a systemic way of supporting the appropriation of ambitious teaching practice by early career educators.

Co-Principal Investigator. *Building capacity for the Next Generation Science Standards through Networked Improvement Communities*. $500,000. National Science Foundation. 2013-2015. Goals are to create the technological infrastructure to support entire communities of teacher and teacher leaders to continually improve their respective practices. This, in turn will support student learning in high needs schools in south Puget Sound.

Principal Investigator: *Tool Systems to Support Progress toward Expert-Like Teaching by Early Career Science Educators*. $1,900,000. National Science Foundation. 2008-2013. The goals of this project are to develop and study a system of tools and tool-based practices for early career and pre-service secondary science teachers that support transitions from novice to expert-like pedagogical reasoning and practice.

Principal Investigator: *Noyce Teaching Scholars Program*. $750,000. National Science Foundation. 2008-2012. This project capitalizes on a recently introduced revision of the University of Washington's teacher preparation program, "Teachers for a New Era", and benefits from existing collaborations

among science and mathematics departments in the Colleges of Arts and Sciences and of Education, and three of the largest school districts in Washington: Seattle, Highline, and Renton. Thirty-six scholarships are being awarded, 9 each year over 4 years, balanced between mathematics and science majors.

Principal Investigator: *Teacher's Learning Trajectories*. $165,000. Carnegie Foundation through *Teachers for a New Era*. 2006-2009.

Senior researcher on NSF-funded *Observing Evidence of Learning grant*. Leroy Hood, Institute for Systems Biology, PI. $500,000. 2005-2009.

Co-principal investigator: *Collaborations to enhance understanding of science and ethics*, $956,000. National Institute of Health. Proposes to develop strategies for working with teachers to integrate ethics into science education at the high school level. 2003-2005.

Co-principal investigator, *Teaching mathematics in the context of scientific inquiry*, 2003-2004, Higher Education Board, State of Washington, $133,000.

Senior Researcher, *REVEL Project* with Oceanography, 2003-2006, National Science Foundation, $300,000.

Co-principal investigator, *Using Virtual Reality to Facilitate Conceptual Learning*, National Science Foundation, 1999-2002. $1,100,000.

Recent Invited Addresses

Windschitl, M. (2018). *How do people learn, and how can we apply what we know to forensics education?* Academy of Forensic Sciences, 70th Annual Scientific Meeting, Seattle WA, Feb 19-24.

Windschitl, M. (2017). *Productive talk in classrooms*. Oregon State University, June 28, 2017.

Windschitl, M. (2016). Keynote Address: *Planning for 3-dimensional classroom instruction through the use of anchoring phenomena*. California State Science Leadership Conference, Sacramento California, December 14th and 15th.

Windschitl, M. (2016). Keynote Address: *Modeling in Elementary and Secondary Classrooms.* Northern Illinois Science Teachers Association, November 14th, Naperville Illinois.

Windschitl, M. (2016). *High-leverage practices and the preparation of science teachers in the United States*. Society of Chemistry and Physics Education in Germany, Zurich Switzerland, September 6, 2016.

Windschitl, M. (2016). *Modeling and discourse in the reform classroom*. Annual Meeting of National Association of Science Teachers, Nashville, TN, April 1.

Windschitl, M. (2015) *Articulating the core of effective teaching: The heresy and promise of high-leverage practices for a nation of novice educators*. The Curry School of Education, University of Virginia.

Stroupe, D. & Windschitl, M. (2015). *Supporting beginning teachers' learning of ambitious instruction with tools and practices*. Annual meeting of the Association of Science Teacher Educators. Portland, OR.

Windschitl, M. (2014). *Modeling and explanation in the Next Generation Science Standards: What teacher leaders need to know*. Sacred Heart University, Hartford Connecticut. Conference on Teacher Leadership with the NGSS.

Windschitl, M. (2014). *The role of modeling in teacher education.* Invited presentation at University of Michigan, TeachingWorks, April 2014.

Windschitl, M. & Thompson, J. (2014). *Enriching Research and Innovation Through the Specification of Professional Practice: The Core Practice Consortium.* Invited Presidential Session at the Annual Meeting of the American Educational Research Association, Philadelphia, PA, April, 2014.

Windschitl, M. & Berk, Lindsay. (2014). Building a repertoire of literacy support practices in science. Invited presentation the *National Academy of Sciences,* Committee on Literacy for science in the common core ELA standards and the Next Generation Science Standards. December, 2013.

Windschitl, M. (2013). *What's at the core of ambitious science teaching, and can it be taught to novices? A study of instructional variation among first-year educators*. An invited presentation given at Michigan State University, October, 2013.

Windschitl, M. (April, 2013). The Next Generation Science Standards: Preparing a community to learn. *Clemson University*, Clemson South Carolina.

Windschitl, M. (April, 2012). How will we prepare the next generation of teachers? *Vanderbilt University*, Nashville TN.

Windschitl, M. (April, 2012). Ambitious teaching and the promise of core practices. *The Waterbury Lecture; Penn State University,* State College PA.

Windschitl, M. (February 2011). The Beginner's Repertoire: Ambitious teaching practice by novices. *Stanford University*, invited address.

Windschitl, M. (June 2011). The role of representations of practice in teacher learning. *University of Michigan*, invited address.

Windschitl, M. (October, 2011). The Next Generation Science Standards: What are the implications for teacher practice over the next 20 years? Presentation to the *Chief Science Education Officers of United States*, Nashville TN.

Windschitl, M. (February 2010). The Support of Early Career Expertise in Science Educators. Invited paper and presentation for *International Research and Development Conference. The National Science Learning Centre, University of York Science Education Group and the Wellcome Trust*. London, England.

Windschitl, M. (October 2009) Rejecting the myth of mere survival: The tools beginning educators need to support ambitious teaching and success in the profession. Invited address at *Florida State University*. Tallahassee, FL.

Windschitl, M. (2009) Developing outstanding science teachers. Invited address at *Iowa State University*. Ames, Iowa.

Windschitl, M. (2009). Cultivating 21st Century Skills in Science Learners: How Systems of Teacher Preparation and Professional Development Will Have to Evolve. *National Academy of Science's Committee on The Development of 21st Century Skills*. February 5, Washington DC.

Windschitl, M. (2007). Panel discussion about critical questions regarding science teacher preparation in the United States. Presented to *National Research Council*'s Committee on Teacher Preparation. February 15, Washington DC.

Publications

(*Refereed) (**Invited)

*Windschitl, M., Thompson, J., Braaten, M. & Stroupe, D. (accepted) Sharing a vision, sharing practices: How communities of educators improve teaching. *Remedial and Special Education*.

*Kang, H. & Windschitl, M. (In press). How does practice-based teacher preparation influence novices' first-year instruction? *Teachers College Record*.

*Windschitl, M. & Stroupe, D. (2017) The Three-Story Challenge: Implications of the *Next Generation Science Standards* for Teacher Preparation. *Journal of Teacher Education*, 68(3), 251-261.

*Davis, E. A., Kloser, M., Wells, A., Windschitl, M., Carlson, J., & Marino, J.-C. (2017). Teaching the practice of leading sense-making discussions in science: Science teacher educators using rehearsals. *Journal of Science Teacher Education, 28*(3), 275-293.

* Colley, C., & Windschitl, M. (2016). Rigor in elementary science students' discourse: The role of responsiveness and supportive conditions for talk. *Science Education*, 100(6), 1009 – 1038. doi: 10.1002/sce.21243

*Kang, H., Windschitl, M., Stroupe, D. & Thompson, J. (2016). Designing learning opportunities for students that advance scientific thinking, *Journal of Research in Science Teaching*, 53(9), 1316-1340.

**Windschitl, M. & Calabrese Barton, A. (2016) Rigor and Equity By Design: Seeking a Core of Practices for the Science Education Community. *AERA Handbook of Research on Teaching*, 5th Edition.

*Thompson, J., Hagenah, S., Kang, H., Stroupe,D., Braaten, M., Colley, C., & Windschitl, M. (2016). Rigor and Responsiveness in Classroom Activity, *Teachers College Record*.

*Campbell, T., Schwarz, C., & Windschitl, M. (2016). What we call misconceptions may be necessary stepping-stones on a path towards making sense of the world. NSTA Journals: *The Science Teacher,* 83(3), 69-74*; Science Scope* 39(7), 19-24*; Science & Children,* 53(7), 28-33. *(published across all three journals as part of NSTA's NGSS series)*.

Contributing author, National Research Council (2016). *Strengthening K-12 Science Education through a Teacher Learning Continuum*. National Academy Press.

*Kang, H., Windschitl, M., Thompson, J., Stroupe, D. (2015). Creating Opportunities for Students to Show What They Know: The Role of Scaffolding in Assessments Tasks. *Science Education*.

**Windschitl, M. & Berk, L. (2014). *Giving Science Students Access to the Tools of Knowledge Production.* Invited white paper for the *National Academy of Sciences,* Committee on Literacy for science in the common core ELA standards and the Next Generation Science Standards. December, 2013.

*McDonald, M., Kazemi, E., Kelley-Petersen, M., Mikolasy, K., Thompson, J., Valencia, S., & Windschitl, M. (Forthcoming). Practice Makes Practice: Learning to Teach in Teacher Education. A theme issue of the *Peabody Journal of Education*. Fall, 2014.

*Thompson, J., Windschitl, M., & Braaten, M. (2013) Developing a Theory of Ambitious Early-Career Teacher Practice. *American Educational Research Journal*, 50(3), 574-615.

*Windschitl, M. (2013). Making student thinking visible with public representations: What's in your toolkit? *The Science Teacher*, September Issue.

*Windschitl, M., Thompson, J., Braaten, M., & Stroupe, D. (2012). Proposing a Core Set of Instructional Practices and Tools for Teachers of Science, *Science Education, 96*(5), 878-903.

* Braaten, M. & Windschitl, M. (2011) Towards a Stronger Conceptualization of Scientific Explanation for Science Education. *Science Education,* 95, pp. 639-669.

* Windschitl, M. Thompson, J., & Braaten, M. (2011) Ambitious Pedagogy by Novice Teachers? Who Benefits From Tool-Supported Collaborative Inquiry into Practice and Why. *Teachers College Record.* 113(7) , pp.1311-1360.

**Windschitl, M. (2009). Cultivating 21st Century Skills in Science Learners: How Systems of Teacher Preparation and Professional Development Will Have to Evolve. Paper commissioned by *National Academy of Science's Committee on The Development of 21st Century Skills*. February 5, Washington DC.

*Thompson, J., Braaten, M., Windschitl, M., Sjoberg, B., Jones, M., & Martinez, K. (2009). Examining Student Work: Evidence-based learning for students and teachers. *The Science Teacher, 76*(8), 48-52.

* Windschitl, M., Thompson, J. & Braaten, M. (2008). How novice science teachers appropriate epistemic discourses around model-based inquiry for use in classrooms. *Cognition and Instruction, 26(3), 310-378.*

*Windschitl, M., Thompson, J. & Braaten, M. (2008). Beyond The Scientific Method: Model-Based Inquiry As A New Paradigm of Preference for School Science Investigations. *Science Education*. *92*(5), 941-967

**Windschitl, M. (2007). Three critical questions about science teacher preparation. Paper commissioned by *National Research Council*'s *Committee on Teacher Preparation.* February 15, Washington DC.

*Windschitl, M., Ryken, A., Tudor, M. & Koehler, G. (2007). A comparative model of field investigations: Aligning school science inquiry with practices of contemporary science. *School Science and Mathematics*, 107(1), 382-390.

*Windschitl, M. & Thompson, J. (2006) Transcending simple forms of school science investigations: Can pre-service instruction foster teachers' understandings of model-based inquiry? *American Educational Research Journal, 43(4) ,783-835.*

Windschitl, M. (2006). Why we can't talk to one another about science education reform. *Phi Delta Kappan,* January, 349-356.

Note: Also appears in *Educational Digest*, April 2006, Vol. 71, #8.

Note: This article also used for on-line teacher professional development with *PBS in Boston*, MA.

**Windschitl, M. (2005). Our challenge in disrupting popular folk theories of "Doing Science". *Proceedings of NSF-sponsored Inquiry Conference on Developing a Consensus Research Agenda*. Rutgers University, February.

**Windschitl, M. (2005). The future of science teacher preparation in America: Where is the evidence to inform program design and guide responsible policy decisions? *Science Education, 89 (4), 525-534.*

**Windschitl, M. (June, 2004, paper commissioned by the *National Academy of Sciences*.) What types of knowledge do teachers use to engage learners in "doing science"? Rethinking the continuum of preparation and professional development for secondary science educators. Committee on High School Science Laboratories: Role and vision.

*Windschitl, M. (2004). Caught in the cycle of reproducing folk theories of "Inquiry": How pre-service teachers continue the discourse and practices of an atheoretical scientific method. *Journal of Research in Science Teaching*, 41(5), 481-512.

*Windschitl, M. & Thompson, J. (2004). Inquiry in Pre-service Classrooms: Epistemological and Methodological Aspects. *Proceedings of the National Association of Research in Science Teaching Conference*, Vancouver BC, April.

*Thompson, J, & Windschitl, M. (2004). Seeing Beyond Science: How Underachieving Girls Engage in Personal and Relational Spaces. *Proceedings of the National Association of Research in Science Teaching Conference*, Vancouver BC, April.

*Windschitl, M. (2003) Inquiry projects in science teacher education: What can investigative experiences reveal about teacher thinking and eventual classroom practice? *Science Education*, 87(1), 112-143.

*Windschitl, M. (2002) Framing Constructivism as the Negotiation of Dilemmas: An Analysis of the Conceptual, Pedagogical, Cultural, and Political Challenges Facing Teachers. *Review of Educational Research*, 72(2), 131-175.

Note: Article won the AERA Presidential Award for Best Review of Research, 2002-2003.

*Windschitl, M. (2002). The reproduction of cultural models of inquiry by pre-service teachers: An examination of thought and action. *Proceedings of the International Conference of the Learning Sciences*, 2002.

* Windschitl, M. & Sahl, K. (2002)Tracing Teachers' Use of Technology In A Laptop Computer School: The Interplay of Teacher Beliefs, Social Dynamics, and Institutional Culture. *American Educational Research Journal*, 39 (1), 165-205.

*Windschitl, M. (2001). The diffusion and appropriation of ideas: An investigation of events occurring between groups of learners in science classrooms. *Journal of Research in Science Teaching*, 38 (1), 17-42.

*Winn, W. & Windschitl, M. (In press). Learning science in virtual environments: The interplay of theory and experience. *Themes in Education*.

*Windschitl, M. (2000). Supporting the development of science inquiry skills with special classes of software. *Educational Technology, Research and Development*, 48 (2), 81-97.

* Windschitl, M. (2000). An investigation of events occurring between groups of learners in science classrooms. In B. Fishman and S. O'Connor Divelbiss (Eds.) *Proceedings of the International Conference of the Learning Sciences*, pp. 358-361. Mahwah NJ: Lawrence Erlbaum Associates.

* Windschitl, M., & Winn, W. (2000). Learning from virtual worlds. In B. Fishman and S. O'Connor Divelbiss (Eds.) *Proceedings of the International Conference of the Learning Sciences*, pp. 290-296. Mahwah NJ: Lawrence Erlbaum Associates.

* Windschitl, M. (2000). Using simulations in the middle school: Does assertiveness of dyad partners influence conceptual change? *International Journal of Science Education*, 23 (1), 17-32.

Note: This article appears as research report by *Education Week*, 17 (35), 1998.

Note: This article appears as research report in *Teacher Magazine*, October, 1998.

*Windschitl, M. (2000). Using the WWW for teaching and learning in K-12 classrooms: What are the interesting research questions? *Cyberpsychology and Behavior*, 3 (1), 89-96.

*Windschitl, M. & Buttemer, H. (May, 2000). What should the inquiry experience be for the learner? *American Biology Teacher*, 346-352.

Windschitl, M. (1999). The challenges of sustaining a constructivist classroom culture. *Phi Delta Kappan*, 80(10), 751-755.

•Note: This article reprinted as chapter 8 in *Taking Sides: Clashing views on controversial issues in educational psychology*, 2000, New York: McGraw-Hill.

•Note: This article reprinted as chapter 24 in *Educational Psychology 2000/2001*, 15th Edition. New York: McGraw-Hill.
•Note: This article reprinted as chapter 25 in *Educational Psychology: Annual Editions 2002-2003*.

Windschitl, M. (1999). Influence of assertive partners in group learning activities. *Research Bulletin: Phi Delta Kappa Center for Evaluation, Development, and Research*, September, No. 24

Windschitl, M. (1999). Constructivism and computers: How to make learning meaningful. *Classroom Leadership*, 3 (3), p. 8.

* Windschitl, M. (1999). A vision educators can put into practice: Envisioning constructivism as a classroom culture. *School Science and Mathematics*, 99 (4), 189-197.

* Windschitl, M. & Irby, J. (1999). Inquiry in middle school: Tapping the resources of the world wide web. *Middle School Journal*, 30 (3), 40-46.
•Note: This article reprinted as chapter 10 of *Computer Studies: Computers in Education* 9th Edition, 2000. New York: McGraw-Hill.

* Windschitl, M. (1998). The WWW and classroom research: What path should we take? *Educational Researcher*, 27 (1), 28-33.

*Windschitl, M. (1999). In-lecture small group discussions. *College Teaching*, 47 (1), 23-28.

*Windschitl, M. (1998). A practical guide for incorporating computer-based simulations into science instruction. *American Biology Teacher*, 60 (2), 92-97.

* Greenbowe, T., Burke, K. & Windschitl, M. (1998). Developing and using conceptual computer animations for chemistry instruction. *Journal of Chemistry Education*, 75 (1), 1658-1661.

*Windschitl, M. & Andre, T. (1998). Using computer simulations to enhance conceptual change: The roles of constructivist instruction and student epistemological beliefs. *Journal of Research in Science Teaching*, 35 (2), 145-160.

*Windschitl, M. (1998). Participant perspectives on the learning teams experience. *Journal of College Student Development*, 39 (4), 373-382.

Windschitl, M. (1998). Independent student inquiry: Unlocking the resources of the world wide web. *National Association of Secondary School Principals Bulletin*, 82 (596), 93-98.

*Windschitl, M. (1996) Student epistemological beliefs and conceptual change activities: How do pair members affect each other? *Journal of Science Education and Technology*, 6 (1) 24-38.

*Windschitl, M. (1996) Learning teams students and the college E-mail culture. *Journal of the Freshman Year Experience*, 9 (2) 53-82.
•Note: This article reprinted as research report by *The Freshman Year Experience Newsletter*, 9, (2), 8-9.

*Windschitl, M. (1995). Instructional animations: The in-house production of biology software. *Journal of Computing in Higher Education*, 7 (2), 78-94.

Windschitl, M. & Dolphin, W. (1995). Using networks to teach science. *Syllabus*, 9 (2), 26-28.

Books and Book Chapters

Windschitl, M., Thompson, J., Braaten, M. *Ambitious Science Teaching*. Harvard Ed Press, 2018.

Stroupe, D. & Windschitl, M. (in press). *Supporting beginning teachers' learning of ambitious instruction with tools and practices*. In Luft, J. & Dubois (Eds.) Supporting newly qualified teachers, Springer Press.
Windschitl, M., Colley, C. & Sjoberg, B. (forthcoming) Putting it all together: Two examples of teaching with the Next Generation Science Standards. In C. Passmore, B. Reiser, & C. Schwarz, *Teaching the Next Generation Science Standards* [title under construction].

Windschitl, M., Bybee, R., & Duschl, R. (forthcoming). Planning and Carrying Out Investigations. In C. Passmore, B. Reiser, & C. Schwarz, *Teaching the Next Generation Science Standards* [title, order of authorship under construction].

Windschitl, M. (2014). Forward. In M. Smith, J. Cartier, MK Stein, and D. Ross. *5 Practices for Orchestrating Productive Task-Based Discussions in Science.* NSTA Press.

Furtak, E., Thompson, J. & Windschitl, M. (forthcoming) Learning Progressions To Support Teacher Development. In A. Gotwals & A. Alonzo (Eds.) Learning Progressions in Science Education.

Windschitl, M., Thompson, J. & Braaten, M. (forthcoming) The Development of Tools and Routines for Supporting Expertise Early in a Teaching Career. In Saleh, I & Khine, M. (Eds.) *Teaching Teachers: Approaches in Improving Quality of Education*.

Van Zee, E., Long, M. & Windschitl, M. (2009) *Secondary science teaching methods courses*. In A. Collins and N. Gillespie (Eds.), The continuum of secondary science teacher preparation. Sense Publishers, Rotterdam/Boston/Taipei.

Windschitl, M. (2007). Folk theories of inquiry, how teachers think about "doing science." In R. Duschl & R. Grandy (Eds.) *Teaching scientific inquiry: Recommendations for research and application*. Sense Publishers: Rotterdam/Taipei.

**Windschitl, M. (2008) A framework for re-thinking the core knowledge-building experiences of inquiry in secondary school science. In J. Luft. R. Bell, & J. Gess-Newsome (Eds.) *Science as inquiry in the secondary setting*. Monograph funded by *National Science Foundation*, published by *National Science Teachers Association*.

(Book) Joseph, P., Bravman, S., Windschitl, M., Mikel, E. & Green, N. (2000) *Cultures of Curriculum*. Mahwah NJ: Lawrence Erlbaum.

(Book chapter) Andre, T. & Windschitl, M. (2002). Epistemological belief, interest, and hot conceptual change. In G. Sinatra & P. Pintrich (Eds.), *Intentional Conceptual Change*. Mahwah NJ: Lawrence Erlbaum.

Reviews

**Windschitl, M. (invited, in press). Review of "Learning Science: A Singular/Plural Perspective" by Wolff-Michael Roth. Sense Publishers. To appear in *Science Education*.

Windschitl, M. (1997). Review of Technology and the Future of Schooling
Journal of Computing in Teacher Education , 13 (4), 34-35.

Windschitl, M. (1996). Review of Multimedia Magic: Exploring the Power of Multimedia Production. *Journal of Computing in Teacher Education*, 13 (1), 34-35.

Other

Windschitl, M. (Nov. 2003) Transforming the way science is taught in Washington. Editorial in *Seattle Times*.

Conference Presentations and Papers
(*Refereed paper)

Lohwasser, K., Tasker, T., & Windschitl, M. (2018). *Opportunities to learn: Does congruency matter?* Annual Meeting of the American Educational Research Association. New York, NY.

Kloser, M., Wilsey, M., Davis, E., Windschitl, M., Wells, A., & Carlson, J. (2018). *Connecting the dots: Secondary science teacher candidates' uptake of facilitating discussions from teacher education experiences.* Annual Meeting of the National Association of Research in Science Teaching, March, Atlanta Georgia.

*Michelle Salgado & Mark Windschitl (2017) *Ambitious Science in the Kindergarten Classroom: Models as Mediators for Talk, Gesture, and Participation,* Annual Meeting of the National Association of Research in Science Teaching, April, San Antonio Texas.

Windschitl, M. Invited NSTA Webinar (August 6th, 2015). *How can teachers support explanatory writing by students?*

Windschitl, M. with Ellen Ebert, Phil Bell, Megan Bang (2015). *Meet the Next Generation Science Standards*. Annual meeting of the Washington Educational Research Association, SeaTac, WA.

*Colley, C. & Windschitl, M. (2015). *A Focus on Responsiveness and Rigor: How Elementary Science Teachers Facilitate Productive Science Talk*. Annual meeting of the American Educational Research Association, Chicago Il.

*Kang. H., Windschitl, M., Thompson, J. (2014). *Linking New Science Teachers' Use of Resources to Student Learning Opportunities Mediated by Instructional Tasks*. Roundtable presented at the Annual Meeting of the American Educational Research Association, Philadelphia, PA, April, 2014.

*Windschitl, M. (2013). The Beginner's Repertoire: The Design and Testing of Core Instructional Practices for Teacher Preparation *American Educational Research Conference,* San Francisco, May.

*Kang, H. (2013). Equitable formative assessments for young learners of science. *American Educational Research Conference,* San Francisco, May.

*Windschitl, M. (2011). The effect of discourse tools on pre-service teachers' classroom dialogue with students. Paper presented at the *European Science Education Association Conference*. Lyon, France, September.

*Windschitl, M. & Braaten, M. (2012). How to Press for Ambitious and Equitable Pedagogy: Changing Teacher Practice Through the Use of Discourse Tools. *American Educational Research Conference,* Vancouver Canada, April.

*Windschitl, M. (April 2011). Tool systems for supporting ambitious science teaching. *Annual Conference of the National Association of Research in Science Teaching*, April, Orlando Fl.

*Windschitl, M. & Thompson, J. (December 2010). Raising performance expectations for novice teachers: The promise of pedagogical tools and core practices. Presentation at the *DR-K-12 National Science Foundation Conference*, Washington DC.

*Thompson, J. & Windschitl, M. (Nov. 2009) Tipping Points: A System of Tools and Routines To Support Expert-Like Practice in Early Career Teachers. *National Science Foundation, DR-K12 Meeting*, Washington DC.

*Braaten, M. & Windschitl, M. (April 2009). Tensions when Teaching Science: How a Teacher Juggles Multiple Demands of Ambitious Pedagogy in an Urban Middle School Classroom. *Annual conference of the National Association of Research in Science Teaching*. Anaheim, CA.

*Thompson, J. Windschitl, M. & Braaten, M. (April 2009). How Pedagogical Reasoning and Ambitious Practice Develops Across "Learning to Teach" Contexts. *Annual conference of the National Association of Research in Science Teaching*. Anaheim, CA.

*Windschitl, M., Thompson, J. & Braaten, M. (April 2009). Fostering Ambitious Pedagogy in Novice Teachers: The Collaborative Analyses of Pupil Work as a Bridge between Teacher Education and Early Career Practice. *Annual conference of the National Association of Research in Science Teaching*. Anaheim, CA.

*Windschitl, M., Thompson, J. & Braaten, M. (2007). How novice science teachers appropriate epistemic disciplinary discourses for use in classrooms. Paper presented at *American Educational Research Association*. Chicago Il. April.

*Thompson, J. & Windschitl, M. (2007). Multiple narratives: How underserved urban girls engage in co-authoring life stories and scientific stories. Paper presented at *American Educational Research Association*. Chicago Il. April.

*Windschitl, M., . & Nagasawa, P. (2006). What our Pre-service Teachers Understand of Scientific Epistemology and Practice: A Summary From a Series of Five Studies. *Annual meeting of the American Educational Research Association*, San Francisco, CA, April.

* Nagasawa, P. & Windschitl, M. (2006). Embedded rhetorical moves in writing genres: Revealing students' epistemological ways of handling and describing knowledge. *Annual meeting of the American Educational Research Association*, San Francisco, CA, April.

*Windschitl (2005). How does undergraduate education shape pre-service teachers' images of science? *Annual meeting of the American Educational Research Association*, Montreal, Canada, April.

*Windschitl, M. & Thompson, J. (2004). Inquiry in Pre-service Classrooms: Epistemological and Methodological Aspects. *National Association of Research in Science Teaching Conference*. Vancouver BC. Canada.

*Windschitl, M. & Thompson, J. (2004). Using scientific models to frame inquiry: Beginning teachers' understandings of canonical scientific practices. *Annual meeting of the American Educational Research Association*, San Diego, CA.

*Thompson, J, & Windschitl, M. (2004). Seeing Beyond Science: How Underachieving Girls Engage in Personal and Relational Spaces. *National Association of Research in Science Teaching Conference*. Vancouver BC. Canada.

*Thompson, J, & Windschitl, M. (2004). How Underachieving Girls Engage in Personal and Relational Spaces. *Annual meeting of the American Educational Research Association*, San Diego, CA.

*Windschitl, M. (2002). The reproduction of cultural models of inquiry by pre-service teachers: An examination of thought and action. *International Conference of the Learning Sciences*, Seattle WA, October.

* Windschitl, M. & Sahl, K. (2002). Tracing Teachers' Use of Technology in a Laptop Computer School: The Interplay of Teacher Beliefs, Social Dynamics, and Institutional Culture. *Annual Conference of the American Educational Research Association*, New Orleans, LA. April.

* Windschitl, M. (2002). The Reproduction of Cultural Models of "Inquiry" by Pre-service Science Teachers: An Examination of Thought and Action. *Annual Conference of the American Educational Research Association*, New Orleans, LA. April.

* Windschitl, M. (2002). Pre-service teachers and cultural models of "Inquiry."

National Association for Research in Science Teaching, New Orleans, LA. April.

* Winn, B. & Windschitl, M. (2002). Strategies used by university students to learn aspects of physical oceanography in a virtual environment. *Annual Conference of the American Educational Research Association*, New Orleans, LA. April.

* Thompson, J. & Windschitl, M. (2002). Engagement in science learning among at-risk girls: A sense of self and the importance of internal motivational factors. *Annual Conference of the American Educational Research Association*, New Orleans, LA. April.

* Windschitl, M. & Andre, T. (2002). Interest, epistemological belief, and intentional conceptual change. *Annual Conference of the American Educational Research Association*, New Orleans, LA. April.

* Thompson, J. & Windschitl, M. (2002). Engagement in science learning among at-risk girls. *National Association for Research in Science Teaching*, New Orleans, LA. April.

* Winn, B. & Windschitl, M. (2002). Features of virtual environments that contribute to learners' understandings of earth science. *National Association for Research in Science Teaching*, New Orleans, LA. April.

* Nesbitt, L. & Windschitl, M. (2001). Catastrophic events in Seattle: The collaborative development of an earth science workshop for middle school teachers. *Annual Conference of the Geological Society of America*. Boston MA, November.

*Windschitl, M. (2001) Independent inquiry projects for pre-service science teachers: Their capacity to reflect on the experience and to integrate inquiry into their own teaching. *Annual Conference of the National Association of Research in Science Teaching*. St. Louis, March

*Winn, W. D., Windschitl, M., Hedley, N., Fruland, R. & Posner, L. (2001) Learning science in immersive virtual environments. *Annual Conference of the National Association of Research in Science Teaching*. St. Louis, March

*Windschitl, M. (2001) Inquiry projects for pre-service science teachers. *Annual Conference of the American Educational Research Association*, Seattle, WA. April.

* Winn, W. D., Windschitl, M., Hedley, N., Fruland, R. & Posner, L. (2001) Learning science in an immersive virtual environment. *Annual Conference of the American Educational Research Association*, Seattle, WA. April.

*Joseph, P., Bravmann, S., Windschitl, M., Mikel, E. & Green, N. (2001). Cultures of Curriculum . *Annual Conference of the American Educational Research Association*, Seattle, WA. April.

Winn, W. D. & Windschitl, M. (2000) Learning about complex natural phenomena in an immersive virtual environment. Poster presentation at *REPP meeting of the National Science Foundation*, Washington DC.

(Invited address) Windschitl, M. (2000). Addressing the problem of physics teacher shortages in America and the United Kingdom. *Universities Council for the Education of Teachers Conference*. London, England.

* Windschitl, M. & Winn, B. & (2000). Learning science in virtual environments. *International Conference of the Learning Sciences*. Ann Arbor MI, June.

* Windschitl, M. (2000). A study of interactions between groups of learners in science classrooms. *International Conference of the Learning Sciences*. Ann Arbor MI, June.

*Windschitl, M. (2000). The diffusion and appropriation of ideas: An investigation of events occurring between groups of learners in science classrooms. *The Annual Conference of the American Educational Research Association*. New Orleans, LA. April.

(Invited address) Windschitl, M. (2000). Inquiry in science education: What does it mean? *Annual Meeting of Catholic School Teachers of British Columbia*. Vancouver, BC. Feb.

*Windschitl, M. (2000). An analysis of preservice science teachers' open inquiry experiences. *The Annual Conference of the American Educational Research Association*. New Orleans, LA. April.

* Sahl, K. & Windschitl, M. (2000). Teacher learning in the context of a middle-school laptop computer program. *The Annual Conference of the American Educational Research Association*. New Orleans, LA. April.

*Windschitl, M. (2000). The diffusion and appropriation of ideas: An investigation of events occurring between groups of learners in science classrooms. *National Association of Research in Science Teaching Conference*. New Orleans, LA. April.

*Winn, B. & Windschitl, M. (1999). Learning science in virtual environments: A theoretical framework and research agenda. *The Annual Conference of the American Educational Research Association*. Montreal, Canada. April.

*Windschitl, M. (1999). Organizer, Chair, and Presenter for symposium: Does the World Wide Web Affect Learning? *The Annual Conference of the American Educational Research Association*. Montreal, Canada. April.

*Windschitl, M. (1998).Inquiry, what it is, and what it isn't. *National Science Teacher Association Conference*, Seattle, WA. October.

*Windschitl, M. (1998).Using Simulations in the Middle School: Does Assertiveness of Dyad Partners Influence Conceptual Change? *The Annual Conference of the American Educational Research Association*. San Diego, CA. April.

*Windschitl, M. (1998). Student Epistemology and Mathematics Learning. Chair and discussant. *The Annual Conference of the American Educational Research Association*. San Diego, CA. April.

Windschitl, M. (1998). Expanding the Idea of Learning Environments. *Northwest Regional Conference, Association for Experiential Education*. Stanwood, WA. February.

Windschitl, M. (1997). What Should the Inquiry Experience Be for the Learner? *Washington Science Teachers Association Conference*, Bellevue WA., October.

Windschitl, M. (1997). A Little Knowledge is a Dangerous Thing: The Challenge of Introducing Pre-service Teachers to Constructivism. Presented at *12th International Congress on Personal Construct Psychology*, Seattle, WA. July.

*Windschitl, M. (1997). Student Epistemological Beliefs and Conceptual Change Activities: How do Pair Members Affect Each Other? Presented at *The Annual Conference of the American Educational Research Association*. Chicago, Illinois. April.

(invited address) Windschitl, M. (1998). The Present and future influence of the World Wide Web on education. University of Nebraska Omaha. January.

*Windschitl, M. (1996).Enhancing Conceptual Change: The Roles of Constructivist Instruction and Student Epistemological Beliefs. *The Annual Conference of the American Educational Research Association*. New York, N.Y. April.

(Invited) Windschitl, M. (1995). The Future of Teaching and Learning in the Global Village. *Peregrine Publishing Directors' Meeting*. Los Angeles, CA. December.

(Invited address) Windschitl, M. (1995). Authentic learning, authentic assessment using the Internet. *Biotechnology Master Teacher Conference*. Ames, IA. July.

(Invited address) Windschitl, M. (1994).Using Computer-related Technologies to Teach Science: What's Out There? *Biotechnology Master Teacher Conference*. Ames, IA. July.

*Windschitl, M. (1994).The effective use of computer simulations in a high school/college biology lab. *Iowa Academy of Sciences*. Des Moines, IA. May.

*Windschitl, M. (1994). Technology for teaching and learning in higher education science courses. *Iowa Academy of Sciences.* Des Moines, IA. May.

*Windschitl, M. (1994). The infusion of technology into higher education: 7 Initiatives in I.S.U. biology. *Iowa Computer-Using Educators Conference*. Des Moines, IA. March.

Reviewing

Reviewer for *American Educational Research Journal*
* Outstanding reviewer award for AERJ, 2003.
Reviewer for *Teachers College Record*
Reviewer for *Educational Researcher*
Reviewer for *Review of Educational Research*
Appointed to Review Board for *Science Education* (2002-present).
Reviewer for *Cognition and Instruction*
Reviewer for *Journal of the Learning Sciences*
Reviewer for *Journal of Teacher Education*
Reviewer for *Elementary Education Journal*
Reviewer for *Journal of Research in Science Teaching*
Reviewer for *Science*
Reviewer for *Science Education*
Reviewer for *Journal of Curriculum Studies*
Reviewer for *Science (AAAS journal)*
Reviewer for *Contemporary Educational Psychology*
Editor for Reviews (1996) *Journal of Computing in Teacher Education*.

Teaching and Related Experience

	UW courses
2017-present	Scholarly Writing
2007-2014	Ambitious Teaching: The design of rigorous and equitable practice
2006	Using Evidence of Learning to Design Instruction
2004	Professional Development for Science and Mathematics Teachers
2003	Teaching Mathematics in the Context of Scientific Inquiry
1998-pres.	Research in Science Teaching
1999	Environmental Education for Science Teachers
1997-pres.	Science Education: Current Issues in a Historical Context
1997, 2000	Constructivism in Science Education
1996-pres.	Computer-supported Learning in the Science Classroom
1997- pres.	Programs and Practices in Secondary Science
1996- pres.	Secondary Science Methods
1996-98	Using Technology in the Science Classroom
1996	The Development of Instructional Multimedia

1993-1996 Coordinator of Instruction and Technology, Biology Program Iowa State University

1981-1993 Junior high school science, Sacred Heart School, West Des Moines, Iowa

1982-1987 Summer school algebra instructor, West Des Moines Public Schools

•Nominated for Teacher of the Year for the State of Iowa 1981 and 1987
•Nominated for UW Teaching Award 2001 and 2006
•Member of NASA Honor Society for Teachers

Service

National/professional:
Professional development to California Science Project Leaders, May 8-10.
Advisory Board, NSF-funded Project, Cal State Santa Cruz, 2014-2018.
Advisory Board, NSF-funded Project, Michigan State State University, 2016-2018.
Advisory Board, NSF-funded Project, Iowa State University, 2016-2018.
Advisory Board, PDMOST Project, Harvard University, Phil Sadler PI, 2016-2018.

Reviewer for *National Research Council* draft of America's Lab Report II, 2018.
Reviewer for large grant proposals: *Spencer Foundation* 2015
Search committee for new editor for *Science Education* 2015
Editorial Board member for *Science Education* 2015
Advisory board member for National Science Foundation project, UCLA, Bill Sandoval PI, 2015
Advisory board member for National Science Foundation project, Michigan State University, Andy Anderson PI, 2015
Advisory board member for National Science Foundation project, Harvard, Phil Sadler PI, 2015
Advisory board member for National Science Foundation project, University of Wisconsin, Leema Berland PI, 2015
Advisory board member for National Science Foundation project, University of Colorado, Erin Furtak PI, 2015
Advisory board member for National Science Foundation project, UC Santa Cruz, Sarah Stull PI, 2015

On Advisory Boards for NSF funded grants at (for 2014):
MSU,
U of Nebraska,
UC Davis,
UC Santa Cruz
UC Santa Barbara
University of Washington REESE program.

Co-Conducting workshop at Sacred Heart University, Hartford Connecticut, 2014.

Member, *National Research Council* Committee on Strengthening Science Education through a Teacher Learning Continuum; 2012-2014

Advisory Board for Pittsburgh and Vanderbilt, National Science Foundation grant.
Advisory Board for University of Michigan, National Science Foundation grant.
Advisory Board for University of California at Davis, National Science Foundation grant.

Letters of external review (promotion) for:
Rutgers (2012)
Michigan State University
Penn State

Letters of external review (promotion) for:
Michigan State University (2011)

Letters of external review (promotion and tenure) for:
Michigan State University (2010)
Rochester University
University of Pittsburgh
Penn State
Utah
UMass
University of California at Davis

Knowles Foundation mentor to emerging young scholars in the field of science and math education research, 2007-2008. Mentoring Dr. Mark Olson and Dr. Laurie Rubel.

Advisory board member to NSF-funded project on science teacher induction research. Arizona State University, meeting May 6th, 2007. Tempe Ariz.

Advisory board member to NSF-funded project on the use of conceptual change and technology to improve science teaching. Towson State University, 2007.

Invited participant to *National Academy of Science and the NSTA*'s RAISE Conference on developing a national research agenda for science teacher preparation research. Co-sponsored by the. Washington, DC. June 5-7, 2007.

External reviewer for Robert Tai's (University of Virginia Curry School) tenure and promotion file, July 2007.

Editor for *Science Education*, Teacher Education section, 2007.

Workshop for Knowles Fellows (group of nationally selected novice science and math teachers funded by Knowles Foundation), Seattle WA, Oct 14, 2007.

Invited participant to RAISE Conference in Washington DC. Purpose to chart course for systematic national agenda for research in science education. Hosted jointly by National Academy of Science and National Science Teachers Association. June 2006.

Reviewer for National Science Foundation, Instructional Materials Development, May, 2006. Will fund $12 Million of proposals.

Committee member for Best Dissertation: National Association for Research in Science Teaching 2006-2007

Reviewer for Israeli Science Foundation, applicants seeking funding for research grants.

Reviewer for Knowles Foundation. Assessing proposal for fellowships in science education research. 2006.

Workshop for Knowles Fellows (15 selected pre-service teachers from a national pool of applicants). Adaptive practice for the inquiry-oriented classroom. September, 2006.

Named section editor for leading journal in science education research: *Science Education*. 2004-2008

External reviewer for Cornell University's evaluation of their Teacher Education Program 2004

Reviewer for National Science Foundation: Learning and Development Grant competition. 2004

Reviewer for annual conference for National Association of Research in Science Teaching. 2004

Reviewer for annual conference for American Educational Research Association.

Appointed to national committee to re-design National Standards for Science Teacher Preparation, 2002-2003.

Integrating inquiry into secondary science. Talk given at the National Meeting of Expeditionary Learning Leaders, Seattle WA. February, 2004.

Proposal reviewer for National Science Foundation, SBIR program, 2001.

Coordinator of the Technology Strand of National Association of Research in Science Teaching Conference, 2002.

Co- coordinator of the Technology Strand of National Association of Research in Science Teaching Conference, 2001.

Reviewer for National Association of Research in Science Teaching conference proposals, 1999-present

Reviewer for AERA conference proposals, Subject Matter & Conceptual Change SIG 1997 &1998

Conducted workshop for University of Nebraska (Omaha) faculty in uses of technology to support learning environments, 1997

Conducted week-long workshop for 32 University of Nebraska Omaha faculty in uses of technology to support learning environments, 1995

University:
Member of Integrated Science undergraduate degree committee, 2011

COE representative to UW Global Health Curriculum Committee, 2007.

Presenter at InnerBiology student group on UW campus (undergraduate science students interested in becoming teachers), October, 2006.

Member of *Teacher for a New Era* team to develop new undergraduate major in science, 2006.

"Evidence of learning team" with Teachers for a New Era project. 2003-2004

Member of Advisory Board for Gear-Up. 2003-2006.

Member of REVEL Advisory Board – Partnership project between scientists in oceanography and local science teachers. 2003-2006.

University Senator, representative for the College of Education 2001-2003.

Member of Math/Science Field Committee for University, 1997-present

Member of Advisory Board, Biology Master's in Science Teaching program, 1997 –present

Presentation of research on laptop integration in schools to the Computer Science Seminar, April, 2001.

Presentation, Emerging Research Laptops in Classrooms, to Visiting Committee (Washington citizens interested in University and College activities) 1/26/99.

Coordinated, with Department of Landscape Architecture, to bring in Robin Moore (as part of College of Architecture and Urban Planning Lecture Series). Presentation was on re-envisioning the outdoor environment as a learning space. May, 1998.

Graduate Student Representative on doctoral committee of music student, 1999.

Evaluator for curricular materials generated by REVEL program participants (School of Oceanography) April, 1997.

College:
Faculty President and Chair of Faculty Council, 2017-2018
Chair of Data for improvement Committee (Ad Hoc Faculty Council committee)
Faculty Vice President 2016-2017
Ex-Officio member of budget committee 2016-2017
Liaison for Islandwood program
Min Sun tenure committee
COE mentor for School of Oceanography MS students
Support of caucusing for TEP Fall quarter of 2017

Cluster leader, 2015
Faculty Council, Academic Programs Committee 2015
College Advisory Council Committee, 2015
Helped with planning for Secondary TEP Orientation 2015
Facilitator for Secondary TEP Graduation 2015
Mentor for *Noyce NSF Scholars* from UW 2015
Mentor for *Annenberg Teaching Scholars* from UW 2015
Interview secondary TEP candidates 2015

Curriculum Committee Chair 2011-2013
Search Chair for Quant policy and teacher quality 2012-2013

Liaison for IslandWood program
Liaison for new IslandWood Urban Track program

Ran Noyce Scholars program for science and math teachers
Ran the Annenberg Fellows program

Faculty Council 2011-2013

Faculty Council Chair of Curriculum Committee 2011-2012

Guest speaker in EDUC 526

Assisting in preparing Teach for America program of certification for COE

Conducted TEP interviews and ratings of candidates

Co-Manager of Noyce Scholarship program, 2010-present

Manages Noyce Scholarship program, 2009-present

Presenter at Ackerly meetings for school change, May 2011

Convener for Master's Colloquia 2010-2011

Member of search committee, EDLPS, 2011

Presented for Secondary Program R&R session, May 2009.

Chair of Curriculum and Instruction. COE 2007.

Panel member for Microsoft Conference on Technology and Schooling, April, 27, 2007, Seattle WA.

Member of COE's Secondary Teacher Education Program Renewal, 2006-2009.

Advisor to Islandwood's film project, funded by *National Geographic* on children's learning in social and environmental contexts, 2007.

Liaison between IslandWood Environmental Learning Center and the UW COE, 2007.

Reviewer for OSPI of final draft of state science assessment questions. April 24, 2007.

Advisory Council Member for Seattle School District's Science Leadership, 2007.

Chair of search committee for Director of K-12 Institute for Science and Mathematics Education

Member Teacher Education Council, 2004-2006

Interviewer for Secondary TEP students applying for program, 2006.

Helped conduct portfolio workshops for masters students, 2005-2006

Member of Committee on Faculty Affairs 2003-2004

Member of Teacher Education Committee 2003-2004

Mentor for Zesbaugh Scholar, 2003-2004.

Served on Induction Team for Teaching Learning Partnership (teacher education program for middle school math and science teachers) 2003-2004

Search committee for WOT position in Educational Leadership 2003-2004

Search committee for Director for K-12 Institute for Science and Mathematics. 2003-2004

Presentation to undergraduates at College seminar for undergrads, 2003

Zesbaugh Scholar mentor, 2002-2003.

Member of Teacher Education Council, 2002-2003.

Member of Design Team for Strengthening and Sustaining Teachers project, 2000-2003.

Interviewer for candidates for SST program, 2002.

Chair (for 1999-2000 and 2000-2001) College Committee on Student Affairs (COSA)

Member of search committee for Elementary Science (2001)

Member, Gender Equity Group for Teacher Education, 2000-2001

Member of combined search committee for Science and Math positions in Curriculum and Instruction (2000).

Member of combined search committee for Literacy, ESL, and Math positions in Curriculum and Instruction (1999).

Developed College of Education partnership with graduate program at Puget Sound Environmental Learning Center, 1999-present.

Coordinated two-day Environmental Workshop at Coronet Bay for TEP students 1997, 1998 & 1999.

Interviewer for secondary TEP program applicants, 1995-present.

Member of Strengthening and Sustaining Teachers (SST) initiative, 2000-present.

Member College Committee on Student Affairs (COSA) (for 1998-1999)

Directed "Technology Night" for Language and Literacy class, University of Washington, November, 1996.

Member, Valerie Chabot Memorial Scholarship selection committee, 1996, 1997 & 1998.

Developed the undergraduate "science stream" of courses for early admission to TEP program (1998-1999).

Held Career Workshop with College of Education graduate students, February 1997 & January, 1999.

State/ Community:

Professional development to Seattle Teacher Leaders, April 18.

Professional Development for Cascade Middle School, Highline School District, April, 2012.

Served on board for "Smart-girls", local foundation to help girls remain in science education pipeline. 2006.

Served on drafting team for Grade-level Expectations in science for the WASL's, 2006.

Working with OSPI to develop new state guidelines for inquiry in the State Standards and the Washington Assessment of Student Learning. 2004

Consulted with Indiana State University on integrating technology into their teacher education program. 2003

Professional development workshop for Pacific Education Institute: Bringing new forms of inquiry into the science classroom. February, 2004.

Conducted a year of professional development activities for math and science teachers in under-resourced schools on the Peninsula. 2003-2004

Facilitator for statewide conference on professional development for professional developers in science and mathematics, Seattle, WA, June, 2003.

Invited speaker for State Conference on Science Education, North Bend, WA, 2002.

Invited speaker on panel to discuss partnerships in education for state-wide Gear-Up Conference, Bellevue WA, May, 2003.

Member of State Assessment Leadership Team in Science (professional development effort through OSPI), 2002.

Partner with Earth and Space Science Faculty and local middle school teachers to teach content courses specifically for teachers, summer 2001 and winter 2002.

Held workshop for middle school teachers on inquiry in the earth sciences, Burke Museum, UW campus, Oct. 2001.

Partner with Earth and Space Science Faculty and local middle school teachers to develop content courses specifically for teachers, 2001.

Reviewer for Washington Assessment of Student Learning science test questions, January, 2001.

Co-developed (with Seattle Schools and the UW K-12 Institute) a needs assessment survey for Seattle High School science teachers, 2001.

Consultant with Shoreline district science teachers to align their curriculum with state standards, 2000.

Developed after-school technology club at First Place (school for homeless children), 2000.

Workshop on Technology in the Science Classroom for 40 teachers in Forks, WA. July, 1998.

Workshop on Constructivism in Science Teaching. Puyallup Tribal School, March 1998.

Co-director for one-week institute for twenty five local teachers (in partnership with Landscape Architecture faculty) "Using the Outdoors as a Learning Environment." August, 1997.

Judge for science presentations by Lakeside School students, May 1997

Presenter at Ford Fellows Workshop (Leadership in Science and Math), LaConnor Washington, 1997 & 1998.

Guest science teacher at Kellogg Middle School, three class sections, for two weeks. 2/3/97 to 2/14/97.

Inservice/presentation on Technology in Teaching Science to Science staff at Kellogg Middle School, November, 1996

Presentation on constructivism in the science classroom. Antioch University, Seattle WA., September, 1998.

Other accomplishments/Activities

2010 Outstanding Alumni Achievement Award for the College of the Human Sciences, Iowa State University

AERA Presidential Award for Best Review of Research, 2003.

Outstanding reviewer award for AERJ, 2003.

Nominated for Teacher of the Year for the State of Iowa 1981 and 1987
Nominated for UW Teaching Award 2001 and 2006
Member of NASA Honor Society for Teachers

Iowa Educational Technology Showcase Award for The Darwin Project (contest for innovative instructional technology projects), 1996

University Research Excellence Award, Iowa State University, 1995

Nominated Iowa Science Teacher of the Year 1981, 1987

NASA Honor Society for Teachers

Created and managed Bio-Animation team, CD-ROM rights purchased by Norton Publishing; N.Y., 1994

Consultant to Peregrine Publishers, Boston, MA.

Member American Educational Research Association

Member National Association of Research in Science Teaching

Member of Center for Education and Environmental Design. (Service and research oriented consortium of faculty from University of Washington departments of Urban Planning, Landscape Design, Education, Architecture, Social Work, and Public Health)