

Adam T. Johnston

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Current Effort Overview

- Course development and instruction in physics, multidisciplinary science, and science education at multiple levels, including workshops for teachers, hosting field trips for K-12 students, and undergraduate and graduate students at Weber State.
- Creation, organization, and documentation of *Science Education at the Crossroads* (<http://www.sciedxroads.org>), an interactive, reform minded conference in science education. (2012 meeting hosted in Providence, RI; Sept. 6-8)
- Associate Director for Science Teacher Education, Center for Science and Math Education, Weber State University.
- Research in science misconceptions, learning strategies, and conceptual change in undergraduate learners and teachers.
- Outreach in science education, including summer parks programs (<http://community.weber.edu/ottreach/>), visits to schools, and service in teacher professional development.

Education

- Ph.D., Science Education (2000). University of Utah, Salt Lake City, UT
- M.S., Physics; emphasis in education (1997). University of Utah, Salt Lake City, UT
- B.S., Physics; departmental honors (1994). Lewis & Clark College, Portland, OR

Honors

- Brady Presidential Distinguished Professor, Weber State University (2013)
- Governor's (UT) Medal for Science & Technology, Science Education category (2012)
- Nominee, U.S. Professor of the Year (2011)
- John S. Hinckley Award, Weber State University (2011)
- Outstanding University Science Educator, Utah Science Teachers Association (2011)
- Crystal Crest Master Teacher Award, Weber State University (2009)
- Finalist, Crystal Crest Master Teacher, Weber State University (2008)
- Lowe Innovative Teaching Award, Weber State University (2006)
- Hemingway Faculty Excellence Award, Weber State University (2006)
- Eccles Fellowship, Weber State University Honors Program (2005-06)
- Gwen S. Williams Award of Excellence, Weber State University (2005)
- Hemingway Faculty Vitality Award, Weber State University (2005)
- Hemingway Faculty Collaboration Award, Weber State University (2005)
- Honorary inductee into Phi Kappa Phi Honor Society (2005)
- Honorary inductee of Golden Key International Honor Society (2004)
- Hemingway Faculty Vitality Award, Weber State University (2003)
- Nye/Cortez Distinguished Professor, Weber State University Honors Program (2002)

Experience

Weber State University	Professor	July 2008 – present
	Coordinator, Teaching & Learning Forum	July 2009 – June 2012
	Associate Professor	July 2003 – June 2008
	Assistant Professor	July 2000 – June 2003
	Visiting Instructor	July 1997 – June 2000
	Adjunct Instructor	August 1996 – June 1997

University of Utah	Adjunct Instructor Research assistant Laboratory manager Laboratory manager Teaching Assistant	Various; 1999 - 2007 June – Sept. 1998 June - Sept. 1997 June 1995 - Sept. 1996 August 1994 – June 1997
Lewis & Clark College	Research assistant	June 1992-August 1994

Teaching (See physics.weber.edu/johnston/courses.htm for details)

Weber State University

Introduction to Physics (PHYS 1010)
Elementary Astronomy (PHYS 1040)
Physical Science for Elementary Teachers (PHYS/CHEM 1360)
Introduction to Honors (HNRS 1110)
Physics of the Mundane (HNRS 1500)
Contemporary Issues in Physics (HNRS 1500)
General Physics I & II (PHYS 2010/2020)
Physics laboratories (PHYS 2019, 2029, 2219, 2229)
The Construction of Truth: A User's Guide to Knowledge (HNRS 3900)
Foundations of Science Education (PHYS/BTNY/CHEM/GEO/MICR/PHYS/ZOOL 3570)
Secondary Science Teaching Methods (PHYS/BTNY/CHEM/GEO/MICR/PHYS/ZOOL 4570)
Independent research/readings (PHYS 4800/4830; HNRS 4990; additional thesis committees)
Nature of Scientific Inquiry (Independent Readings course with Michael Hernandez; PHYS/GEO 4830)
Honors seminar, "Foundations of Research" (HNRS 4920)
First Course in Algebra (MATH 0960)
Understanding Science (MED 6650)
Advanced Physics for Teachers (MED 6670; Utah State Office of Education through Weber State University)
Scientific Inquiry Methods for Teachers (Utah State Office of Education through Weber State University)
Interstate Science Safari (with Stacy Palen; Miller Education Project Workshop, 2008)
Desert Solitaire: Science & Writing Hybrid Workshop (with Carl Porter; Miller Education Project Workshop, 2009)

University of Utah

The Nature of Science & Science Education (TL 6733) [Summer 2001; Summer 2004; Summer 2007]
Physical Science Teaching Methods (Phys 5070) [Summer 1999]
Introduction to Physics (Phys 1010) [Summer 1998]

Major Program Coordination

- Co-creator and coordinator of *Science Education at the Crossroads*, a national science education conference aimed at education and scholarly reform (see sciedxroads.org); 2005-present.
- Director, *Science in the Parks*, Weber State University, a summer outreach program to Ogden City parks (see community.weber.edu/ottreach/parks.html); 2007-present. Has led to pilots of other programs, including:
 - *Taking Science to Schools*, Weber State University, a program aimed to organize science education efforts from the university to local schools, 2010-present.
 - *Taking Science Outside*, Weber State University, a program recently funded and in concert with the *Parks and Schools* efforts in which students and community members are given opportunity to pursue science outdoors, supplied with equipment, curricula, and mentoring; 2010 – present.
- Associate Director and Advisor, Science Teaching Programs at Weber State University, Center for Science and Math Education (2000 – present), including development of inservice teacher professional development for both K-12 educators and faculty in our College of Science.
- Teaching & Learning Forum Coordinator, Weber State University, 2009 - 2012 (see weber.edu/tlf):
 - New Faculty Orientation, 2009, 2010, 2011
 - Faculty Forum, 2009, 2010, 2011
 - Adjunct Faculty Retreat, 2010
 - Teaching & Learning Symposium, 2010, 2011, 2012

- Professional Learning Groups, 2011 and onward

Scholarly Work

Proceedings Edited

- Settlage, J. & Johnston, A. (Eds.) (2012). Proceedings of the 2012 meeting of *Science Education at the Crossroads*. Providence, RI.
- Settlage, J., Johnston, A., Dotger, S., & Ceglie R. (Eds.), (2011) Proceedings of the 2011 *Science Education at the Crossroads* Conference. San Antonio, TX.
- Settlage, J. & Johnston, A. (Eds.) (2009). Proceedings of the 2009 meeting of *Science Education at the Crossroads*. Portland, OR.
- Johnston, A. & Settlage, A. (Eds.) (2008). Proceedings of the 2008 meeting of *Science Education at the Crossroads*. Alta, UT.
- Settlage, J. & Johnston, A. (Eds.) (2007). Proceedings of the 2007 meeting of *Science Education at the Crossroads*. Amherst, MA.
- Johnston, A. & Settlage, J. (Eds.) (2006). Proceedings of the 2006 meeting of *Science Education at the Crossroads*. Ogden, UT.
- Settlage, J. & Johnston, A. (Eds.) (2005). Proceedings of the 2005 meeting of *Science Education at the Crossroads*. Storrs, CT.

Publications, refereed

- Johnston, A., Butler, M. B., Moore Mensah, F., Williams, B. (2011). Playing with science: Models for engaging communities. *Children, Youth, and Environments*. 21(2), 312-324.
- Amsel, E., Johnston, A., Alvarado, E., Kettering, J., Rankin, L., & Ward, M. (2009). The effect of perspective on misconceptions in psychology: A test of conceptual change theory. *The Journal of Instructional Psychology*, 36, 289-296.
- Nixon, R. & Johnston, A. (2009). Investigations into the Hot Chocolate Effect. *Ergo*, 4, 63-69.
- Amsel, E., Klaczynski, P. A., Johnston, A., Bench, S., Close, J., Sadler, E., Walker, R. (2008). [A dual-process account of the development of scientific reasoning: The nature and development of metacognitive intercession skills](#). *Cognitive Development*, 23(4), 452-471.
- Johnston, A. & Settlage, J. (2008). [Framing the professional development of members of the science teacher education community](#). *Journal of Science Teacher Education*, 19, 513-521.
- Johnston, A. (2008). Demythologizing or dehumanizing? A response to Settlage and the ideals of open inquiry. *Journal of Science Teacher Education*. 19(1), 11-13.
- Johnston, A. (2007). Emphasizing the Tentative Nature of Science in the Classroom. In Settlage, J & Southerland, S.A. (2007). *Teaching science to every child: Using culture as a starting point*. New York: Routledge. [ISBN 9780415956369]
- Settlage, J. & Johnston, A. (2007). In the present. *Journal of Science Teacher Education*, 18(1), 129-132.
- Sowell, S., Johnston, A., & Southerland, S. A. (2007). Calling for a focus on where learning happens: A response to Abd-El-Khalick and Akerson. *Science Education*, 91(1), 195-199.
- Johnston, A., Southerland, S. A., Sowell, S. (2006). Dissatisfied with the fruitfulness of 'learning ecologies'. *Science Education*, 90(5), 907-911.
- Southerland, S. A., Johnston, A., Sowell, S. (2006). Describing teachers' conceptual ecologies for the nature of science. *Science Education*, 90(5), 874-906.
- Inglefield, C., & Johnston, A. T. (2004). What Constitutes Successful Undergraduate Research? *Journal of Materials Education*, 26(3&4), 261-266.
- Gess-Newsome, J., Southerland, S. A., Johnston, A., & Woodbury, S. (2003). Educational Reform, Personal Practical Theories, and Dissatisfaction: The Anatomy of Change in College Science Teaching. *American Educational Research Journal*, 40(3), 731-767.
- Southerland, S.A., Gess-Newsome, J., Johnston, A. (2003). Portraying science in the classroom: The manifestation of scientists' beliefs in classroom practice. *Journal of Research in Science Teaching*, 40(7), 669-691.
- Johnston, A. T. (2001). *A conceptual change analysis of nature of science conceptions: The deep roots and entangled vines of a conceptual ecology*. Unpublished doctoral dissertation, The University of Utah, Salt Lake City. (Defended Sept. 15, 2000; Abstracted 2001.)

- Johnston, A. T. (2000). Deliberating over science curricula: A 'mundane' solution. *National Honors Report*, 20(4), 23-27.
- Johnston, A. (1997). *A computer interactive student laboratory investigating the properties of heat and temperature*. Unpublished master's thesis, Department of Physics, University of Utah, Salt Lake City.
- Johnston, A. T. (1994). *Unraveling convective roll patterns within a Rayleigh-Benard cell*. Unpublished undergraduate thesis completed for departmental honors in physics, Lewis & Clark College, Portland, OR.

Other Publications

- Amsel, E. & Johnston, A. (2010). Training the preschool scientist-in-waiting (Book review of Gelman et al., *Preschool pathways to science: Facilitating scientific ways of thinking, talking, doing, and understanding*, Paul H. Brookes Publishing Company), 31(6), 484-486.
- Fountain, H. (Feb. 1, 2010). Up in the Air, and Down, with a Twist. *The New York Times*. [cited consultant in article and associated multimedia]; see <http://www.nytimes.com/2010/02/02/science/02ski.html>
- Johnston, A. (2008). Brick by brick: A conversation with Billy Collins. *Weber: The Contemporary West*. 25(1), 2-14.
- Johnston, A. (2007). Book reviews: *Walking Zero*, by Chet Raymo. *American Journal of Physics*, 75, 478.
- Johnston, A. & Settlage, J. (March/April 2004). Last call [Originally titled: A Call to Homebrewers: The Future of Science Education]. *Brew Your Own*, 64.
- Web-based and interactive CD quizzes (600 questions) for Hester et al. (2002), *21st Century Astronomy*, W. W. Norton.
- Rudolph, S. & Johnston, A. (1997). *Elementary Physics Lab Manuals*. Department of Physics, University of Utah.

Invited addresses and keynote presentations

- Johnston, A. (November 2011). Our Greatest Invention(s). Invited Annual Hinckley Lecture, Weber State University, Ogden, UT.
- Johnston, A. (September, 2011). Vexations and Ventures in Professional Learning, Collaborations, and Scholarship. Invited keynote address given at the Big Sky Teacher Education meeting, Ogden, UT.
- Settlage, J. & Johnston, A. (September, 2011). Little Blue and Little Yellow. Keynote address given at Science Education at the Crossroads, San Antonio, TX.
- Johnston, A. (March, 2010). Reforming the Academy: A vision for professional learning and faculty development at Weber State University. WSU Teaching & Learning Symposium.
- Settlage, J., & Johnston, A. (2009, April). Between Sputnik's Launch and Halley's Return: Grand Challenges at the Crossroads. Presidential Invited Session presented at the Annual Meeting of the National Association of Research for Science Teaching, Garden Grove, CA.
- Johnston, A. (2009, May). Learning for Life. Invited Keynote Address for the Annual Meeting of the Utah College Reading and Learning Association, Ogden, UT.
- Johnston, A. (2008, August). *Blazing your own trail . . . But where are you going?* Keynote address presented at the Weber State University Academy of Leadership. Midway, UT.
- Johnston, A. (2008, May). *Extraordinary education from ordinary ideals*. Keynote address presented at the Rocky Mountain regional meeting of the National Academic Advising Association, Park City, UT.
- Johnston, A. (2007, September). *Orchestrations of Science Education Adventurism*. Keynote address given at Science Education at the Crossroads, Amherst, MA.
- Johnston, A. (May 6, 2005). *Success in failure*. General studies commencement address, Weber State University.
- Johnston, A. (April 17, 2003). *The Joy of Teaching*. A keynote address for the 2003 Nye/Cortez Honors Banquet, Weber State University.

Public/Media consultations of note

- Invited guest on KUER's *Radio West* (11 February 2011). "Celebrating Science Education," <http://www.publicbroadcasting.net/kuer/news.newsmain/article/184/0/1761430>
- Cited consultant in New York Times article and associated multimedia. Fountain, H. (Feb. 1, 2010). Up in the Air, and Down, with a Twist. *The New York Times*. <http://www.nytimes.com/2010/02/02/science/02ski.html>

Papers and presentations at professional meetings (refereed)

- Johnston, A. & Amsel, E. (2010, June). Students' Understanding of the Scientific Process: Transformation or

- Stagnation? Workshop presented at the Annual Meeting of the Council on Undergraduate Research, Ogden, UT.
- Hernandez, M. W., Johnston, A., Domek, M. J., Inglefield, C., Rague, B. (2010, June). A STEM Interdisciplinary Research Experience Program for Pre-Service Science Teaching and Science/Technology Majors: Introduction and Experiences from the Initial Scientific Inquiry Course. Poster presented at the Annual Meeting of the Council on Undergraduate Research, Ogden, UT
 - Drits, D., Johnston, A., & Palen, S. (2009, April). On the Road: Effectiveness of an Experiential Professional Development Program on Teacher Perceptions of Self and Science. Paper presented at the Annual Meeting of the National Association of Research for Science Teaching, Garden Grove, CA.
 - Settlage, J., Johnston, A., & Kittleson, J. (2009, April). Crafts(wo)men and Guilds: Expertise Development among Science Education Researchers. Paper presented at the Annual Meeting of the National Association of Research for Science Teaching, Garden Grove, CA.
 - Settlage, J., Johnston, A., Ceglie, R., & Harkins, H. (2009, March). Professional Development for when you KNOW you don't know. A professional development workshop for the 2009 annual meeting of the National Science Teachers Association.
 - Johnston, A., Settlage, J., Moss, D. M., & Carlone, H. (2008, April). Perspectives of scholar activism, pragmatism, and orchestration in science education. Symposium presented at the Annual Meeting of the National Association of Research for Science Teaching, Baltimore, MD.
 - Settlage, J. & Johnston, A. (2008, March). Communities of Learning, Practice, and Scholarship: Applying Social Learning Systems Theory to an Association of Educational Stakeholders. Paper presented at the Annual Meeting of the American Educational Research Association, New York, NY.
 - Amsel, E. & Johnston, A. (2008, March). The role of imagination in conceptual change. Paper presented at the Annual Meeting of the American Educational Research Association, New York, NY.
 - Johnston, A. (2007, September). 'Correspondence to.' Paper presented at Science Education at the Crossroads, Amherst, MA.
 - Settlage, J., Johnston, A., Meadows, L., Harkins, H., Kittleson, J. (2007, January). *Professional Development at a Crossroads. Using Vexations as the Focal Point.* Workshop presented at the Annual Meeting of the Association for Science Teacher Education, Clearwater, FL.
 - Johnston, A. (2006, September). *The Good Book for Our Science Education Neighborhood.* Paper presented at Science Education at the Crossroads, Ogden, UT.
 - Johnston, A. (2006, April). Learning the nature of research: Models for undergraduate research experiences? Pre-conference presentation at the Annual Meeting of the Rocky Mountain Psychological Association, Park City, UT.
 - Johnston, A. & Amsel, E. (2006, April). *Student questioning and reflection in introductory astronomy.* Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, San Francisco, CA.
 - Johnston, A. & Settlage, J. (2006, January). *Science education at the crossroads.* Paper presented at the Annual Meeting of the Association for Science Teacher Education, Portland, OR.
 - Proctor, R., Johnston, A., Palen, S. & Armstrong, J. (2006, January). *The effectiveness of scientific visualization techniques: Teaching the lunar cycle.* Poster presented at the Annual Meeting of the American Astronomical Society, Washington, D.C.
 - Johnston, A. (2005). *What Learning Leaves.* Paper presented at *Science Education at the Crossroads*, University of Connecticut, Storrs.
 - Johnston, A. (2005). *The Physics of Brewing Beer.* Presentation at the Summer Meeting of the American Association of Physics Teachers, Salt Lake City, UT.
 - Southerland, S., Sowell, S., Johnston, A., & Settlage, J. (2005, April). *Perhaps triangulation isn't enough: A call for crystallization as a methodological referent in NOS research.* Paper presented at the Annual Meeting of the American Educational Research Association, Montreal, Canada.
 - Southerland, S., Johnston, A., & Sowell, S. (2005, April). *Reinvoking conceptual ecologies: Inservice teachers' conceptual change in nature of science.* Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, Dallas, TX.
 - Johnston, A. (2004, April). *Learning the process of science: The case of undergraduate research and the nature of science.* Paper presented at the Annual Meeting of the National Association for Research in Science Teaching, Vancouver, BC, Canada.

- Inglefield, C. & Johnston, A. (2004, April). *What Constitutes Successful Undergraduate Research?* Paper presented at the Annual Meeting of the Materials Research Society, San Francisco, CA.
- Shipman, H., Jordan, J., Southerland, S., Johnston, A., Jackson, D., & Meadows, L. (2003, March). *Science and religion in the context of science education*. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching; Philadelphia, PA.
- Southerland, S., Settlage, J., Johnston, A., Scuderi, A., & Meadows, L. (2003, March). *Development and application of a web-based NOS instrument*. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching; Philadelphia, PA.
- Settlage, J., Southerland, S. A., Johnston, A. T., & Meadows, L. (2003, January). *Electronically informing teacher decision making: Utilizing computers to provide instantaneous assessments of students' understanding of the nature of science*. Paper presented at the Annual meeting of the Association for Educators of Teachers of Science, St. Louis, MO.
- Smith, M. T., Inglefield, C. E., & Johnston, A. T. (2002, August). *Atomic force microscope model*. Poster presented at the Summer Meeting of the American Association of Physics Teachers, Boise, ID.
- Johnston, A. T., & Southerland, S. A. (2002, April). *Conceptual ecologies and their influence on nature of science conceptions: More dazed and confused than ever*. Paper presented at the Annual Meeting of the National Association for Research in Science Teaching April, 2002; New Orleans, LA.
- Johnston, A. T., & Southerland, S. A. (2001, November). *The multiple meanings of tentative science*. Paper presented at the 6th International History, Philosophy, and Science Teaching conference, Denver, CO.
- Johnston, A. T. & Southerland, S. A. (2001, March). *Conceptualizing the nature of science: Extra-rational evaluations of tiny atoms, round planets, and big bangs*. Paper presented at the Annual Meeting of the National Association of Research in Science Teaching, St. Louis, MO.
- Gess-Newsome, J., Southerland, S. A., Johnston, A. T., & Woodbury, S. (2001, March). *Offering a model of reform: The interaction of factors and their impact on scientists' practice of reform-based teaching*. Paper presented at the Annual Meeting of the National Association of Research in Science Teaching, St. Louis, MO.
- Gess-Newsome, J., Southerland, S. A., Johnston, A. T., & Woodbury, S. (2001, January). *Reforming the reformers: Conceptual change of scientists' conceptions of teaching and learning*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, Costa Mesa, CA.
- Gess-Newsome, J., Southerland, S. A., & Johnston, A. T. (2000, January). *Translation of Teachers' Views to Students' Understandings of the Nature of Science: Examining a Reform Based College Science Course*. Paper presented at the Annual meeting of the Association for the Education of Teachers in Science, Akron, OH.
- Southerland, S. A., Gess-Newsome, J., & Johnston, A. T. (2000, April). *Defining Science In the Classroom: How Scientists' Views Shape Classroom Practice*. Paper presented at the Annual meeting of the National Association of Research in Science Teaching, New Orleans, LA.
- Johnston, A. T., & Southerland, S. A. (2000, April) *A Reconsideration of Science Misconceptions Using Ontological Categories*. Paper presented at the Annual meeting of the National Association of Research in Science Teaching, New Orleans, LA.

Other scholarly presentations

- Johnston, A. (Feb 8, 2013). *Physics is Fun: Science at Play*. Presentation for the Utah Science Teachers Association annual meeting.
- Johnston, A. (March 12, 2011). *Scientists at Play: Using Parks for Science Education Outreach*. Presentation for the UT/ID AAPT section meeting.
- Johnston, A. (March 2, 2011). *Physics Education: Promise, Purpose, and Problems*. Colloquium presentation for BYU Physics Department.
- Bartlett, A., Chisholm, J., Johnston, A. (Moderator), Palen, S., Smith, M., & Walker, C. (October 16, 2010). *Physics Education and Outreach: Opportunities and Responsibilities*. Panel Discussion at the Four Corners Meeting of the American Physical Society, Ogden, UT.
- Johnston, A. (March 28, 2008). *'To learn': Multiple meanings and goals for physics education*. Physics Department Colloquium, University of Connecticut.
- Johnston, A. (January 16, 2008). *'To learn': Multiple meanings and implications for physics education*. Physics Department Seminar, Weber State University.

- Johnston, A. (January 14, 2008). Meanings of learning in physics. Physics Department Colloquium, Idaho State University.
- Johnston, A. (October 12, 2007). Multiple views of learning in the sciences. Presentation for Weber State University tutors.
- Johnston, A. (January 24, 2007). Student Thinking in Science and Math. Workshop presented at the Weber State University Adjunct Faculty Retreat, Layton, UT.
- Amsel, E. & Johnston, A. (August 15, 2006). What you don't know your students don't know. Presentation for WSU New Faculty Retreat, Weber State University.
- Amsel, E. & Johnston, A. (September 12 & 20, 2005). What you don't know your students don't know (and what you can do about it). Presentation for TEAM workshop series, sponsored by the Teaching and Learning Forum, Weber State University.
- Johnston, A. & Durrant, L. (2005, March). Lies, damn lies, and statistics: A continual evaluation of a first year physics course. Presentation at the annual meeting of the Utah/Idaho section of AAPT, Salt Lake City, UT.
- Johnston, A. (2005, February). Undergraduate researchers' conceptions of science. Paper presented at Faculty Forum, Weber State University, Ogden, UT.
- Johnston, A. (2004, March). The shortcoming of physics education research. Presentation for the annual meeting of the Utah/Idaho section of AAPT, Pocatello, ID.
- "Measuring a molecule" and "Science myths" (February 18, 2005). Presentations for Utah Science Teachers Association annual meeting, Layton, UT.
- Johnston, A. T. (2003, March). Conceptual physics in a problem-solving physics course. Presentation for the Annual Meeting of the Utah/Idaho section of AAPT, Ogden, UT.
- Johnston, A. T. (2003, March). Glowing vegetables and levitating soap. Demonstrations for the Annual Demo Show of the Utah/Idaho section of AAPT, Ogden, UT.
- Invited panel participant: "Scientist teachers and science educators: Seeking common ground on teaching and learning issues." (Oct. 26, 2001). Presented at the National Science Teachers Association Western Regional Meeting, Salt Lake City, UT.
- Invited lecture: "The Cutting Edge of Physics Education Research." (April 21, 2000). Lewis & Clark College, Department of Physics; Portland, Oregon.
- "Physics of the Mundane: A curriculum alternative?" (April 16-18, 1999). Presented at the Western Regional Honors Conference, San Francisco, CA. (with Adam Taintor, student).
- "Physics of the Mundane: An alternative for general education?" (March 6, 1999). Presented to Utah-Idaho Section of American Association of Physics Teachers, Utah State University.
- "Non-science Students as Scientists." (March 7, 1998). Presented to the Utah-Idaho Section of American Association of Physics Teachers, Idaho State University

Grants

- National Science Foundation, Noyce Grant for science teacher recruitment (in preparation).
- Adam Johnston & Brett Moulding (2011). "Partnership for Effective Mathematics and Science Teaching and Learning (PEMSTL)." Funded, \$198,647, No Child Left Behind, U.S. Department of Education, via Utah State Board of Regents.
- "Interfacing Scientific Research in the Classroom and Beyond". ARCC, Weber State University. Funded (\$4654) spring 2011.
- "OttReach: Taking Science Outside" Hall Endowment for Community Outreach. Funded (\$4,947.75) fall 2010.
- "Technology Library for Faculty," ARCC, Weber State University. Funded (\$9400), spring 2010.
- "Interactive SmartBoard Technology for Science Teacher Education," ARCC, Weber State University. Funded (\$5000), spring 2010.
- "OttReach: Science in the Parks & Science Moms." Utah Families Foundation (\$10,000), spring 2010.
- "Science in the Parks." Weber County RAMP program (\$4000), spring 2010.
- "Taking Science to Schools." Hall Community Foundation (\$4700), fall 2009.
- "Science in the Parks." Utah Families Foundation (\$5000), spring 2009.
- "Science in the Parks." Weber County RAMP program (\$4000), spring 2009.
- "Project OttReach: Science Education Outreach in Ogden City Parks." Hall Endowment for Community Outreach. Funded (\$6250) fall 2007.

- “Disseminating *Science Education at the Crossroads* to an International Audience.” Research, Scholarship, and Professional Growth grant, Weber State University. Funded (\$1250) fall 2007.
- “Capacity Building Conference Series: Supporting an Emerging Community of Science Education Researchers.” National Science Foundation. Co-PI with John Settlage, University of Connecticut. Funded (\$99,858) summer 2007, award number 0711264
- “Science Education at the Crossroads 2006.” Hemingway Faculty Excellence grant, Weber State University. Funded (\$1800) spring 2006.
- “Science Education at the Crossroads.” Hemingway Vitality grant, Weber State University. Funded (\$1026) spring 2005.
- “Reflective Learning in the General Education Curriculum.” Hemingway Collaborative grant proposal; Co-PI with Eric Amsel, Weber State University. Funded (\$5000) spring 2005.
- Proposed (not funded -- no appropriations): “Enhancing the nature of inquiry in undergraduate research experiences.” FIPSE grant proposal; Co-PI with Eric Amsel, Weber State University.
- Proposed (not funded): “Astrobiology Research Experience for Undergraduates (REU) Site.” NSF Grant Proposal 0453289. Co-investigator and program assessor with Palen, S. (PI) et al., Weber State University.
- Hemingway Faculty Vitality Grant, Weber State University. “The Davis Dilemma: A Student-Faculty Partnership for Physics Laboratory Development” (\$2713). Spring, 2003.
- Consultant for an educational grant from the U.S. National Institutes of Health (NIH) grant: Scientific Thinking and Internet Learning Technologies. See <<http://stilt.genetics.utah.edu/>>.
- Research, Scholarship, and Professional Growth Grant (RS&PG), Weber State University. “New Faculty” award (\$250), Fall 2000.
- Research, Scholarship, and Professional Growth Grant (RS&PG), Weber State University. Curriculum development grant (\$1585), Spring 1997.

Service, outreach, and interaction

General service opportunities (See also, “Major Programs Coordination,” above):

- Member of Utah Science Education “Leadership Team,” in coordination with the Utah State Office of Education, to plan curriculum development and inservice programs.
- Consultant and instructor for PESTL (pestl.org), professional development for elementary teachers throughout the state of Utah (2007 – present)
- American Physical Society reviewer for *Physical review: Physics Education research* (2005 – present).
- Consultant to Ott Planetarium education programming and outreach (2006 – present).
- DaVinci Academy of Science and Arts, Board of Directors (2006 – 2010).

Presentations given to campus and community groups

- “Physical Science at Play,” presentations for Early Childhood Courses (Carrie Ota). 22 October 2012.
- “Circus of Physics,” for 6th Annual Department of Physics Open House. 5 October 2012.
- “Family Science Night,” Ogden-Weber Community Action Partnership, 28 March 2012
- “Science in the hands and minds of children.” Workshop for Davis SD HeadStart teachers, March 9, 2012. Kaysville Family Enrichment Center.
- “My Road to Engaged Scholarship,” March 7, 2012. Presentation at Community Involvement Center workshop for faculty.
- “Designing Authentic Assessments,” Teaching & Learning Symposium, March 2, 2012, Weber State University.
- “Playful science for Head Start.” Workshop for Ogden/Weber Head Start teachers, October 23, 2011.
- “Circus of Physics,” for 5th Annual Department of Physics Open House. 14 October 2011.
- “The Problem and Promise of Science Education Reform,” an invited presentation for Humanists of Utah. May 12, 2011, Salt Lake City, UT.
- “Science Olympiad Circus of Physics Demonstration Show” for Science Olympiad participants, coaches, and families. March 26, 2011, Weber State University.
- “Scale of the Universe” presentation for sixth grade, Shadow Valley Elementary School, 8 March 2011.
- “Physics of charge,” for Science Moms, Weber State University, 8 January 2011.
- “Science Fair Kickoff Demonstration Show,” Polk E.S. assemblies (2 presentations), 6 January 2011.
- Physics Demos for “Operation Inspiration,” afterschool group for recruiting/retaining students. Weber State University, 17 February 2011.

- HeadStart teacher training session: Taking Science in the Parks into the Schools. OWCAP. 17 February 2011.
- “Gravity and Motion,” 3rd Grade Science Field Day, Shadow Valley E.S., 21 December 2010.
- “Physics of Light,” demonstration and activities for Shadow Valley E.S. science club, 10 December 2010.
- “Physics of Sound,” demonstration and activities for Shadow Valley E.S. science club, 3 December 2010.
- “Science Education and Society” for New York Times Issues Forum, Weber State University, 17 November 2010.
- “The Nature of Scientific Inquiry,” Science Olympiad Workshop, Weber State University, 30 October 2010.
- Science activities for Family Night, Polk E.S., 13 September 2010.
- “Science at the Fairgrounds” (Davis Country Fair), 21 August 2010.
- “Science at the Golf Course” (Science in the Parks activities for families associated with Utah Families Foundation golf tournament and fundraiser), Midway, UT, 17 August 2010.
- Scientific Inquiry Field Day, Nebo S.D., 8 July 2010.
- Scientific Inquiry Field Day, Ogden S.D., 24 June 2010.
- “Circus of Physics,” for 4th Annual Department of Physics Open House, 9 April 2010
- “Nature of Science” workshop, Ogden S.D. teachers, 20 February 2010.
- Physics Demo Presentations for Engineering Day, Weber State University, 19 February 2010.
- “Nature of Science” workshop, Nebo S.D. teachers, 30 January 2010.
- Physical Science Teaching workshop for 7th, 8th, 9th grade teachers, Davis S.D., 19 January 2010.
- Electricity and Magnetism workshops for teachers, Nov. 14, 2009(Nebo District), Nov. 21, 2009 (Washington District), January 9 (Ogden District), 2010
- Physics Demo Presentations for Shadow Valley E.S. science club, 12 November 2009.
- “Teaching Philosophy Workshop,” Weber State University, 20 October 2009.
- “Circus of Physics,” for 3rd Annual Department of Physics Open House, 4 April 2009
- “Playing with Physics,” Presentation for SLC Science Education Center, 13 March 2009
- “Playing with Physics,” Presentation for White Pines Middle School (6 classes), 10 March 2009
- “Experiments of Change,” for St. Paul’s Preschool students (2 classes), 9 March 2009
- “Psychological Perspectives in Science Education.” A seminar for the Department of Psychology, Weber State University, 20 February 2009.
- “Frankenstein: The Intersection of Science, Technology, and Society.” A lecture for Weber Reads and the DaVinci Academy Lecture Series, 18 February 2009.
- “Nature of Science Field Studies,” daylong workshop for teachers, Ogden, UT, 31 January 2009.
- “Turning physics outside-in.” A presentation for S4, 22 January 2009.
- “Astronomy for Teachers,” daylong workshop for 6th grade teachers, Ogden, UT, 6 December 2008.
- “Astronomy for Teachers,” daylong workshop for 6th grade teachers, St. George, UT, 7 November 2008.
- “Negotiating the Intersections in Science Education: Vexations and Ventures in Reform Efforts,” WSU Physics Department Seminar, 29 October 2008.
- “Science Olympiad Training Session,” sponsored by CSME, Weber State. 24 October 2008.
- “Critical Components in the Intersections of Science Education Scholars,” presentation at the WSU Faculty Forum, 21 October 2008.
- “Polk Elementary School Science Fair Kickoff,” presentations for all grades. 7 & 14 October 2008.
- “Bates Elementary School Science Fair Kickoff,” presentations for all grades. 23 September 2008.
- “Nature of Science” workshop, Ogden & Nebo S.D. teachers, 13 August 2008.
- “Essences of Physics.” Interactive demonstration presentation for Weber School District’s PALS field trip, June 11, 2008.
- “Circus of Physics.” Presentation during WSU Physics 2nd Annual Open House, April 18, 2008.
- Physics demonstrations for St. Paul’s preschool classes, March 12, 2008.
- Host and co-coordinator for Bountiful JHS visit to Weber State College of Science, March 10, 2008. 240 8th graders cycled through a subset of 8 different authentic university science experiences.
- “Essences of Science,” presentation for WSU Honors Food For Thought, March 5, 2008.
- Circuits & Motors lab, Brownie Troop #2366, Feb. 26, 2008.
- Planetarium presentations for Madison Elementary Kindergarten classes, Feb. 22, 2008.
- Curling clinic and snowshoeing outing, spring 2008, for WSU Honors. (Cracked ribbed during curling clinic; suffered through it during snowshoeing.)

- “Science Museum Roadshow” (October 4-5, 2007). Six physical science demonstration shows (grades K-5) for Polk elementary School, Ogden, UT.
- “Bubbleology” (August 17, 2007). Workshop for Girl Scouts of N. Davis County, Layton, UT.
- “Inquiries in the physical sciences: Hot chocolate, light bulbs, and simple machines.” A workshop for Science Olympiad training, Center for Science and Mathematics Education, Weber State University, 1 August 2007.
- “Wonders of Physics” (June 28, 2007). Demo show and lecture for Upward Bound, Weber State University.
- “First Grade Physics” (May 11, 2007). Demo show and lecture for 1st graders from Polk Elementary School.
- “Circus of Physics” (April 13, 2007). Two demo shows with Colin Inglefield for 1st Annual Physics Open House.
- “Wonders of physics” (November 14, 2006). Two demonstration and interactive lecture sessions for Central Middle School students.
- “Using our senses and imaginations (November 7, 2006). Demonstrations and discussions with preschoolers from Weber State University’s Children’s School.
- “Mechanics and motion” (October 20, 2006). Two demonstration and interactive lecture sessions for Mt. Ogden Middle School students (in coordination with Dr. John Sohl’s demo/lecture on thermodynamics).
- “Physics and the senses” (May 26, 2006). Interactive demonstrations for first grade classes at Sand Springs Elementary School (Layton, UT).
- “The light-up pickle and other wonders” (March 15, 2006). Two demonstrations and interactive lecture for St. Paul’s schools (Ogden, UT) pre-school classes.
- “Physics around us” (March 14, 2006). Demonstration and interactive lecture for Horizon School (Ogden, UT).
- “Imagination and the sky” (March 14, 2006). Planetarium presentation for St. Paul’s school’s (Ogden, UT) Kindergarten class.
- “The physics of flying, falling, and landing,” (November 3, 2005). A presentation for the first annual *Jump Start* Science Fair, Weber State University.
- “How and why to think like a scientist” (November 2, 2005). A presentation for First Year Experience, Weber State University.
- “Teambuilding” workshop for Honors Student Advisory Council, Weber State University (June 28, 2005).
- “The wonder of motion and sound” (June 14, 2005). A presentation for Ogden MOMS club.
- “The shape and size of space” (June 4, 2005). A slide show for the OAS/Ott Planetarium Star Party, Antelope Island.
- “The glowing pickle and other physics of change” (March 14, 2005). Presentations for two preschool classes from St. Paul’s School.
- “Engaging Students in the Classroom” (December 16, 2004). A presentation for FYE instructors and mentors.
- “Images of Science” (October 26, 2004). A ‘Pizza with a prof’ presentation for the WSU Honors program.
- “A brief tour of ‘out there’” (August 21, 2004). A slide show for the OAS/Ott Planetarium Star Party, Ogden Bay Bird Refuge.
- “The physics of change” (May 13, 2004). A presentation and demonstration show for MOMS club of Ogden.
- “How things change” (December 12, 2003). A presentation and demonstration show for local Head Start classes.
- “A primer on assessment: Philosophy and practice.” (November 24, 2003). A presentation for WSU English Literature/Writing Methods teaching methods courses.
- “Learning across the curriculum: Conceptual resistance and change in student understanding” (November 21, 2003). A presentation for NOUS (Weber State University Philosophy Club) with Eric Amsel, Psychology.
- Presented “Alternative assessment: What is it? How do I do it?” Sponsored by the University Teaching and Learning Forum (November 12 & 20, 2003).
- “A tour of observational astronomy” (August 30, 2003). A slide show for the OAS/Ott Planetarium Star Party, Antelope Island.
- “The Universe: A Crash Course” (April 28, 2003). A presentation for Wahlquist JHS MESA program.
- “The Physics of the Mundane Roadshow” (March 10, 2003). An outdoor demo presentation for Honors Emphasis Week, Weber State University.
- “The Nature of Natural Law” (February 13, 2003). A presentation for Science Seminars for Superior Students, WSU.

- “Astronomy across the curriculum” (January 31, 2003). A workshop for New Science Teacher Induction and Retention Program, Center for Science and Math Education, WSU.
- “Living on a spinning ball” and “Heat and light in space” (December 3, 2002). Two NASA Science Teachers Workshops, Center for Science and Math Education, WSU.
- “A physics demonstration tour” (November 1, 2002). A presentation for the WSU Student Chapter of the National Science Teachers Association.
- “Problem solving across the disciplines” (August 12, 2002). A presentation for the Honors Student Advisory Committee, WSU.
- “The Music of Physics” (April 19, 2002). Two presentations for the 6th grade class of Green Acres Elementary.
- “The nature of science education” (Nov. 1, 2001). A guest lecture/discussion for Science Teaching Methods (PHYS 4570).
- “Mother Nature’s rules of conservation” (Nov. 1, 2001). A presentation for MESA.
- “A crash course in science learning, constructivism, and conceptual change” (Oct. 11, 2001). A guest lecture for Science Teaching Methods (PHYS 4570).
- “The Mars files: Evaluating the evidence for life on the red planet” (Oct. 10, 2001). Workshop presented for WSU/NASA Teachers Workshop.
- “Playful science” (June 14, 2001). A presentation for MOMS Club of Layton, UT.
- Physics and astronomy presentation for career day (April 4, 2001), Sunset Jr. High School.
- “Exploring Europa” (Nov. 15, 2000). NASA Teacher Workshop Presentation with Dr. Brad Carroll.
- “What is astronomy?” (Nov. 10, 2000) Central Middle School, Ogden, UT.
- “Bridging Heaven and Earth: The nature of natural laws” (Oct. 24, 2000). WSU Honors/AP Night.
- “Probing for understandings of science: The deep roots and entangled vines of a conceptual ecology” (Oct. 11, 2000). WSU Physics Department Seminar.
- “The nature of science” (Oct. 2, 2000). A guest lecture for Science Teaching Methods.
- “Constructivism & science learning” (Sept. 29, 2000). A guest lecture for Science Teaching Methods.
- Doctoral defense: AA conceptual change analysis of nature of science conceptions: The deep roots and entangled vines of a conceptual ecology” (Sept. 15, 2000). The University of Utah, Graduate School of Education, Department of Teaching & Learning.
- "A Field Trip Through the Solar System" (Feb. 4, 2000). Utah Science Teachers Association's annual conference, Ogden, UT.
- "Scale & Structure of the Universe" (Jan. 7, 2000) to First Year Science Teachers Workshop, Center for Science and Math Education, Weber State University.
- MESA presentations for the physics department, Weber State University. (Several throughout Spring 2000.)
- "Science literacy: What, Why, and How?" (Nov. 17, 1999). WSU Honors' 'Pizza with a prof'.
- Two lectures on the nature of science and science learning for science teaching methods course, Fall 1999.
- "The Nature of Natural Laws" (Oct. 20, 1999). Honors-AP night, Weber State University.
- "The Universe in a Soap Bubble" (Oct. 21, 1998). Honors-AP night, Weber State University.
- "Misconceptions in Astronomy" (May 14, 1998). Presented to Ogden (UT) Astronomical Society.
- "Grocery Store Physics" (Feb. 18, 1998). Presented to Jordan (UT) School District.
- "Physics is Hard" (Nov. 25, 1997). Presentation at Weber State University, sponsored by W.S.U. Physics Club.
- "Unraveling convective rolls within a Rayleigh-Bénard cell" (June 6, 1994). Senior honors presentation for the Department of Physics, Lewis & Clark College, Portland, OR.

Student research

- Danielle VanArk, College of Education, Weber State University (Master’s Committee). Spring 2011 – present.
- Kathryn Day, Bachelor of Integrated Studies, Weber State University (Committee chair). Spring 2008 – Summer 2011.
- Ben Jasperson, Department of Physics, Weber State University (Undergraduate research, physics education), Spring 2011.
- Dina Drits, Department of Teaching and Learning, University of Utah (Doctoral work, independent research), Fall 2007 – Fall 2010.

- Charla Boom, Department of Physics, Weber State University (Undergraduate research, physics education), Fall 2010.
- Bonnie Meaders, College of Education, Weber State University (Master's Committee). Fall 2008 – Fall 2009.
- Ryan Nixon, Department of Physics, Weber State University (Undergraduate research, physics education), Spring 2008.
- Ron Proctor, Bachelor of Integrated Studies, Weber State University ("Nature of Science" planetarium production), Spring 2007 – Spring 2008.
- William Deleeuw, Department of Physics, Weber State University (Undergraduate research, physics education), Fall 2006.
- Ron Proctor, Department of Physics, Weber State University (Undergraduate research, astronomy education), co advisor. Summer – Fall 2005.
- Brock Frost, Department of Psychology, Weber State University (thesis committee member). Spring 2005 – Fall 2005.
- Lori Durrant, Department of Physics, Weber State University (Undergraduate research, physics education). Summer 2004 – Fall 2005.
- Heather London, College of Education, Weber State University (Master's Committee). Spring 2004 – Spring 2005.
- Susan Labasky, Department of Teaching and Learning, University of Utah (Doctoral Committee). "A Study of the Relationships Among Student Nurse Epistemology, Critical Thinking, and Clinical Decision Making." Defended May 13, 2004.
- Rene Meyers, Department of Zoology, Weber State University. "Taking the Plunge: Pouch Morphology and Function in Brown Pelicans." Defended May 11, 2004.
- Troy Lund, Department of Physics, Weber State University (Undergraduate research, physics education and laboratory curriculum development). Summer 2003.
- Matthew Smith, Department of Physics, Weber State University (Undergraduate research, physics education). Spring 2002.
- Adam Taintor, Honors Thesis (Chair), Weber State University. "Dioxin and Wasatch Energy Systems: Is It Better To Be Safe Than Sorry?" Defended May, 2001.

Other professional service reviews and contributions

- External review for promotion candidate. Towson University, College of Science (August 2011).
- Reviewer for Journal of Teacher Education: "Using evidence from research to re-conceptualize and restructure undergraduate science and science teacher education." (August 2011).
- Program Review Team, Department of English Language and Literature, Weber State University (Spring 2011).
- Reviewer for Journal of Teacher Education: "Pre-service teachers' conceptions regarding their scientific education" for the Journal of Teacher Education." (January 2011).
- Reviewer of Dixie State's Physical Science Composite Teaching Program Proposal, (Fall 2010)
- External review for tenure candidate, Northern Arizona University, School of Education (August 2010).
- Review of prospective textbook for College Physics course, Wiley Publishers (August 2010).
- Referee of proposals for the 2009 annual meeting of the National Association for Research in Science Teaching (Strands 1 and 5).
- Referee for piece in The International Journal of Creativity and Problem Solving, winter 2008.
- Referee of proposals for the 2008 annual meeting of the American Educational Research Association (Division C, Section 4 (Science)).
- Referee of proposals for the 2008 annual meeting of the National Association for Research in Science Teaching (Strands 1 and 5).
- External reviewer tenure candidate, Department of Physics, Northern Arizona University (Fall, 2007).
- Delphi reviewer of "The Nature of Science" chapter in physics teaching methods text in preparation, Carl Wenning (Fall, 2007).
- External reviewer of faculty member in Department of Teacher Education, Brigham Young University (Fall, 2007)
- Review of prospectus of introductory physics text, Springer (April, 2007)
- Referee of proposals for the 2007 annual meeting of the National Association for Research in Science Teaching.

- Review of Zimmerman’s *Core Concepts in Physics*, Prentice Hall (July, 2006).
- Review of Williams’ *Visualizing Physics*, John Wiley & Sons, Inc. (July, 2006).
- Review of Snow & Stern’s *Asking About the Universe*, W. W. Norton & Co. (June, 2006).
- Science Fair Judge, Weber School District (February 6, 2006).
- Referee of proposals for the 2006 annual meeting of the National Association for Research in Science Teaching (Strands 1, 3 and 5).
- Review of Zimmerman’s *Core Concepts in Physics*, Prentice Hall (July, 2006).
- Review of Williams’ *Visualizing Physics*, John Wiley & Sons, Inc. (July, 2006).
- Review of Snow & Stern’s *Asking About the Universe*, W. W. Norton & Co. (June, 2006).
- Consultant for “Space Mysteries,” a supplement to the *Standard Examiner* (December 5, 2005).
- Referee of proposals for the 2006 annual meeting of the National Association for Research in Science Teaching (Strands 1,3 and 5).
- Review of prospectus of introductory physics text, John Wiley & Sons (September, 2005).
- Review of three chapters of Walker’s College Physics text (3e), Prentice Hall, Inc. (July, 2005).
- Review of pilot tests for secondary science assessment, Utah State Office of Education (July 12, 2005).
- Review of three chapters of Walker’s College Physics text (3e), Prentice Hall, Inc. (March, 2005).
- Review of one chapter of Touger’s College Physics text, John Wiley & Sons, Inc. (February, 2005).
- Review of one chapter of Touger’s College Physics text, John Wiley & Sons, Inc. (November, 2004).
- Review of workbook to accompany Touger’s College Physics text, John Wiley & Sons, Inc. (October, 2004).
- Referee of proposals for the 2005 annual meeting of the National Association for Research in Science Teaching (Strands 1 and 3).
- Review of pilot tests for secondary science assessment, Utah State Office of Education; August 20, 2004.
- “Standards Setting” for secondary science assessment, Utah State Office of Education; July 27-29, 2004
- Reviewer of Wiley’s “Visual Imprints Series”, May 2004.
- Presider for paper presentation session 9R at the Annual Meeting of the National Association for Research in Science Teaching, April 2004, Vancouver, BC, Canada.
- Presider and judge for the First Annual Undergraduate Research Symposium, March 29, 2004, Weber State University.
- Invited facilitator at the “Red Rock Great Teaching Retreat” (February 26-28, 2004). Workshop for university faculty, providing interactive discussion and development of teaching strategies. Hosted by *Highroad Professional Development*; Springdale, UT.
- Prospectus and chapter reviews for college physics text by VanHuevlen & Etikina, Addison-Wesley (December 2003).
- Invited panelist on General Education discussion at the “What is an Educated Person?” conference, (November 17, 2003). Hosted by Utah Board of Regents, Salt Lake City.
- External tenure reviewer for Dr. David Moss, Neag College of Education, University of Connecticut (November 2003).
- Two chapter review of introductory physics text by Trefil & Hazen, John Wiley and Sons (November 2003).
- Review of multimedia for Bennet et al. astronomy text, Addison-Wesley (November 2003).
- Reviewer of proposal for new College Physics text for Addison-Wesley Longman Publishers (September 2003).
- Teaching mentor for colleague, as arranged by the Dean of the College and a department chair (Fall 2003).
- Referee of proposals for the 2004 annual meeting of the National Association for Research in Science Teaching (Strands 1 and 3).
- Reviewer of chapter of College Physics text for John Wiley & Sons Publishers (August 2003).
- Reviewer of proposal for new College Physics text for Addison-Wesley Longman Publishers (May 2003).
- Prospectus reviewer for general college physics text of John Wiley Publishers (December, 2002).
- NASA Science Teacher Workshop/Inservice facilitator, Weber State University. (December, 2002).
- Referee of proposals for the 2003 annual meeting of the National Association for Research in Science Teaching
- Prospectus reviewer for introductory physics text of John Wiley Publishers (July, 2002).
- Reviewer of McGraw-Hill web-based interactive media for introductory astronomy (January, 2002).
- Prospectus reviewer for conceptual physics text of McGraw-Hill (December, 2001).

- Referee of proposals for the 2002 annual meeting of the National Association for Research in Science Teaching
- Co-writer for Utah State Core science instruction vignettes, Utah State Office of Education (August, 2001).
- Visited and assisted with model rocket building for USU's Extension Youth and Families with Promise program; accompanied by WSU physics majors (August 2001).
- Co-writer for *Physics Core Curriculum* revision, Utah State Office of Education (June, 2001).
- Reviewer for *Astronomy: Journey to the Cosmic Frontier (2nd Ed., updated)*, McGraw Hill (June, 2001).
- Advisor to *Standard Examiner's Astronomy* supplement, (December 2000).
- Reviewer for *In Quest of the Universe (3rd Ed.)*, Jones & Bartlett (May 2000).
- Advisor to *Standard Examiner's "Physics Phun"* (February 7, 2000).
- Reviewer for *21st Century Astronomy*, W. W. Norton & Company. (August, 1999).

University service

Departmental

- Physics Teaching and Physical Science Teaching advisor
- Assessment committee (chair)
- Curriculum committee (past)
- Lower division lab committee (past)
- Various peer review committees

College

- Chair, Science Teacher Education Advisory Committee (2010 – present)
- Advisor, Student Chapter of the National Science Teachers Association (NSTA) (2007 – present)
- Center for Science and Math Education advisory committee (2000 – present)
- Science Museum Committee (2005 – present)
- Math/Math Education Faculty Search Committee (2008-2009)
- Developmental Math Director Search Committee, chair (2006 – 2007)
- College of Science General Education Assessment committee (2001 – 2008)
- Science Fair committee and judge
- Science Olympiad judge
- Various peer review committees

University

- University Council on Teacher Education, co-chair (2006 – present)
- Student Services Faculty Advisory Committee (2009 – present)
- Hall Community Foundation board (2008 – present)
- Teaching, Learning, and Assessment Committee, Chair (2009 – 2012)
- Hemingway Foundation Board (2010 – 2012)
- University Peer Review Committee (2009 – 2010)
- Environmental Issues Committee (2007 – 2009)
- Developmental mathematics search committee (chair) (April 2006 – September 2007).
- First Year Experience Director search committee (Fall 2007)
- University General Education Assessment and Improvement Committee (2005 – 2007)
- Developmental mathematics task force (co-chair) (August 2004 – August 2005).
- Curling club, faculty advisor (January 2004 – April 2006).
- Selection committee for director of WSU Teaching and Learning Forum (December 2003).
- Advisory committee for Weber State University partnership with NUAMES charter school (June 2003 – March 2004).
- Faculty advisor WSU National Science Teachers Association student chapter (August 2002 - present).
- University Teaching, Learning, and Assessment Committee (August 2002 – May 2005).
- Physical/life Science General Education Assessment committee (August 2002 - present).
- Honors Faculty Advisory Committee (August 2002 – June 2006).

Other skills and interests

- Outdoor excursions (backpacking, hiking, x-country skiing, snowshoeing, etc.)
- Piano playing and composition
- Beer brewing and the science thereof
- Playing the game and studying the science of curling