

Bruce Palmquist

Central Washington University
Science Education and Physics

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Ellensburg, WA 98926-7422

Education

Ph. D.: University of Minnesota, Curriculum and Instruction-Science Education, 1993
Master of Science Degree: University of Minnesota, Physics, 1992
Master of Arts Degree: University of Minnesota, History of Science, 1990
Bachelor of Arts Degree: Awarded Magna Cum Laude, Augsburg College, Minneapolis, 1984

Professional Experience

Teaching

Professor: Departments of Physics and Science Education, Central Washington University (9/05 to present)
Visiting Professor: International Summer School, Shaanxi Normal University, Xi'an, China (July 2018)
Asistant/Associate Professor: Departments of Physics and Science Education, CWU (9/93 to 9/05)
Student Teaching Supervisor: Department of Curriculum and Instruction, University of Minnesota (8/92 to 6/93)
Teaching Assistant: Department of Physics and General College, U of M (9/87-6/92)
Science and Mathematics Teacher: Minneapolis Public Schools, Minneapolis, MN (1/85-6/85, 9/86-6/86)
Physical Science Teacher: Lake Crystal High School, Lake Crystal, MN (8/85 to 6/86)
Instructor: Augsburg College, Minneapolis, MN (9/84 to 5/85)

Other Teaching Experience

Mentor/Lead Mentor: ESCALA Educational Services. Mentored faculty members trying innovative techniques to better reach Latinx students. (1/18 to present)
Faculty Fellow, Multimodal Learning: Mentored faculty developing online lab science courses, led an initiative to use Open Educational Resources and Inclusive Access resources in my college (9/16 to 8/18)

Administration

CWU Science Education Department Chair, (8/94 to 9/98, 12/07 to 8/08, 9/11 to 8/12, 6/14 to 8/17)
CWU Physics Department Chair, (8/98 to 12/98, 3/00 to 8/07, 09/15 to 08/16, 9/18 to present)
CWU Program Director, CWU program at Green River Community College (12/01-9/06, 9/07-8/08)

Awards

2019 College of the Sciences Faculty/Staff of the Year
2009 Professional Education Advisory Board (PEAB) Crystal Apple award for outstanding CWU teacher educator.
2005 Washington Professor of the Year, awarded by the Carnegie Foundation and Council for Advancement and Support of Education (October, 2005)
2004 Central Washington University Distinguished Professor – Public Service (May, 2004)
Academic Service Learning Distinguished Faculty Fellow (2004-6)
Academic Service Learning Faculty Fellow (2000-2)

Publications

Peer Reviewed Articles

Palmquist, Bruce and Jackson, Michael (2015). Strengthening a physics teacher preparation program using key findings from the SPIN-UP report. In Recruiting and Educating Future Physics Teachers: Case Studies and Effective Practices, edited by Cody Sandifer and Eric Brew. College Park, MD: American Physical Society, pages 187-197.
Hunt, Vanessa, Sorey, Timothy, Balandova, Evguenia, and Palmquist, Bruce (2010). Juan's Dilemma: A New Twist on the Old Lemon Battery. The Science Teacher, 77(7), 52-56.
Palmquist, Bruce (2002). "Interactive Spectra Demonstration." The Physics Teacher, 40(3), 140-142.
Faix, Timothy (CWU student) and Palmquist, Bruce (2002). "Guided practice for oral lab reports." The Science Teacher, 69(2), 68.
Palmquist, Bruce (2001). "Assessing Motion Graphs." The Science Teacher, 68(8), 75-77.
Palmquist, Bruce (2000). "Facilitating Communication in a Distance Education Setting." Journal of College Science Teaching, 29(4), 337-340.

- Palmquist, Bruce (1999). "Star Search." The Science Teacher, 66(3), 55-56.
- Palmquist, Bruce and Finley, Fred (1998). "A Response to Bell, Lederman and Abd-El-Khalick's Explicit Comments." Journal of Research in Science Teaching, 35(9), 1063-4
- Palmquist, Bruce (1998). "Moon Theory." The Science Teacher, 65(3), 59-62.
- Palmquist, Bruce (1997). "Moon Rise, Moon Set." The Science Teacher, 64(7), 62-66.
- Palmquist, Bruce and Finley, Fred (1997). "Preservice Teachers' Views of the Nature of Science During a Postbaccalaureate Science Teaching Program." Journal of Research in Science Teaching, 34(6), 595-615.
- Palmquist, Bruce (1997). "Scoring Rubric for Interview Assessment." The Physics Teacher, 35(2), 88-89.
- Palmquist, Bruce (1997). "Creative Solutions." The Mathematics Teacher, 90(8), 674.
- Palmquist, Bruce (1996). "Interview Assessment in Physics Labs." The Physics Teacher, 34(8), 510-511.

Peer Reviewed Case Studies

- Palmquist, Bruce (2015). The Itsy-Bitsy Spider. [Case study] Buffalo, NY: National Center for Case Study Teaching in Science, University of Buffalo, State University of New York.
http://sciencecases.lib.buffalo.edu/cs/collection/detail.asp?case_id=790&id=790.
- Palmquist, Bruce (2014). Sorting Trash with Static Electricity. [Case study] Buffalo, NY: National Center for Case Study Teaching in Science, University of Buffalo, State University of New York.
http://sciencecases.lib.buffalo.edu/cs/collection/detail.asp?case_id=724&id=724.

Abstracts

- Piasek, A and Palmquist, B (2013). Community-based inquiry: An example involving wind turbine noise, Journal of the Acoustical Society of America, 134, 4014.
- Whitfield, M, Palmquist, B, Filson, R., & Heizer-Newquist, L. *Abstracts of papers*, National Association for Research in Science Teaching (NARST) Annual International Conference, New Orleans, LA; NARST: Reston, VA, 2007; Abstract P-236-1419-1418-1450.

Non Peer Reviewed Articles

- Palmquist, Bruce (2013). Inquiry in Astronomy Textbooks. The Classroom Astronomer. 5(1), 38-39.
- Palmquist, Bruce (2013). Learning Progressions, Washington Science Teachers Journal. 54(1), 18-21.
- Palmquist, Bruce (2011). Star Motions With Sky Simulators. The Classroom Astronomer. 3(1), 20-23.
- Palmquist, Bruce (2010). By Jove! You Can Discover Kepler's Third Law Yourself. The Classroom Astronomer. 2(2), 3-6, 22.
- Palmquist, Bruce (2010). Jigsawing the Universe. The Classroom Astronomer. 1(3), 19-20.
- Palmquist, Bruce (2008). Promoting a Contemporary View of the Nature of Science in Your Classroom. Washington Science Teachers Journal. 49(2), 13-16.
- Palmquist, Bruce (2008). Getting Teachers to talk About the Nature of Science. Washington Science Teachers Journal. 49(2), 17-21.
- Quitadamo, I.J., Kurtz, M. J., Sorey, T. L., Pratt-Sitaula, B., and Palmquist, B. (2006). Using e-Portfolios to Evaluate Pre-Service Teacher Performance. Washington Science Teachers Journal, 46(3). 20-27.

External Reports

- External Evaluator for Normandale CC (MN) NSF-ATE Planning Grant. Final report submitted August, 2005.

Other Publications

- Palmquist, B. C., Braunstein, M. R., & Smith, A. (2017). *Physics Primer*. Pearson Publishing.
- Weekly observational astronomy column called "What's up in the Sky" published in the Ellensburg, WA Daily Record (circulation: about 5500), May, 2001 to present. Also available at <http://theellensburgsky.blogspot.com/>.
- Palmquist, Bruce (2012). Testing Ideas from Classical and Quantum Physics. A peer-reviewed "Gold Star" lab activity for PhET. Retrieved from <https://phet.colorado.edu/en/simulation/hydrogen-atom>.
- Palmquist, Bruce (2012). Exploring electric potential, field and distance relationships. A peer-reviewed "Gold Star" lab activity for PhET. Retrieved from <http://phet.colorado.edu/en/simulation/charges-and-fields>.
- Palmquist, Bruce. (2012 February 14) Review of *Innovating Science Teacher Education* by Mansoor Niaz. Education Review, 15. Retrieved [2/14/12] from <http://www.edrev.info/reviews/rev1153.pdf>
- Palmquist, Bruce. (2011 July 12) Review of *The "X" Factor: Personality Traits of Exceptional Science Teachers* by Berube, Clair. Education Review, 14. Retrieved [7/12/11] from <http://www.edrev.info/reviews/rev1104.pdf>.

- Palmquist, Bruce (2011). Ramp: Forces and Motion Investigation. A peer-reviewed “Gold Star” lab activity for PhET. Retrieved from <https://phet.colorado.edu/en/simulation/ramp-forces-and-motion>.
- Palmquist, Bruce (Writer, Producer) (2009, May 23). A cheap “name a star gift” for college graduates. Found at <http://365daysofastronomy.org/2009/05/23/may-23rd-a-cheap-%E2%80%9Cname-a-star%E2%80%9D-gift-for-college-graduates/>.
- Palmquist, Bruce (Writer, Producer), Fredsti, Felicit, and Magen, Marilyn (2009, April 13). Edward, Annie, and Williamina Discuss Spectral Classification. Created for 365 Days of Astronomy. Found at <http://365daysofastronomy.org/2009/04/13/april-13th-edward-annie-and-williamina-discuss-spectral-classification/>.
- Palmquist, Bruce and Li, Guian (2007, July 18). Three things we can learn from comparing the Chinese and American education systems. Ellensburg (WA) Daily Record, p. A4.
- Montgomery, Aaron and Palmquist, Bruce (2006). Tracking Near Earth Objects, an Interdisciplinary Lively Application Project (ILAP). Published locally and supported by NSF-DUE grant 0410434.
- Glass, Alex, Darda, David, and Palmquist, Bruce (2006). A Reading guide for “A Short History of Nearly Everything” by Bill Bryson. Written for the CWU One Book, One Campus program. Found at www.cwu.edu/~provost/one_book.
- Palmquist, Bruce (1992). Teachers Define Science. *University of Minnesota: Research Review*, XXII(5), 5.

Books

- Palmquist, Bruce (2006). *Instructor's Manual for Contemporary Activities in Astronomy* (3rd edition). Dubuque, Iowa: Kendall/Hunt.
- Palmquist, Bruce (2003). *Instructor's Manual for Contemporary Activities in Astronomy* (2nd edition). Dubuque, Iowa: Kendall/Hunt.
- Palmquist, Bruce (1999). *Instructor's Manual for Contemporary Activities in Astronomy*. Dubuque, Iowa: Kendall/Hunt.
- Palmquist, Bruce (1995). *Instructor's Manual for Activities in Astronomy* (4th edition). Dubuque, Iowa: Kendall/Hunt.

Grants Received

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| \$65,193 | Physics Teacher Education Coalition (2012). Improving Physics Teacher Education at CWU. |
| \$3,150 | CWU Center for Excellence in Science and Mathematics Education (2012), Developing Curriculum for PHYS 292 |
| \$500 | Douglas Honors College Curriculum Committee (2011). For developing DHC 380, Issues in Science and Religion. |
| \$1,575 | CWU Center for Excellence in Science and Mathematics Education Equipment Grant (2010), “Enhancing the Newly Developed “Physics by Inquiry” General Education Course.” |
| \$748,167 | Jeff Bullock (PI), Chris Stark, Mary Jane Ross, Janet Gordon (all from North Central Washington ESD); Tim Sorey, Bruce Palmquist, Teri Willard (all from CWU); Walter Tribley, and Ralph Dawes (both from WVC) (Co-PIs) (2009) Washington State Math Science Partnership with funding from the US Department of Education, “Progress to Math and Science Proficiency: Reaching Out to Rural Schools” |
| \$3,150 | CWU Center for Excellence in Science and Mathematics Education (2009), Developing Curriculum for PHYS 106 |
| \$470 | American Association of University Professors grant (2008), to fund invited trip to China. |
| \$700 | International Studies and programs Advisory Committee (2008), grant to fund invited trip to China. |
| \$2,184 | CWU Center for Excellence in Science and Mathematics Education (2007), Aligning E-Portfolios in SCED 301 and 324. |
| \$299,845 | Mary Whitfield (PI), Bob Filson, Leslie Heizer Newquist, Bruce Palmquist (Co-PIs) (2005), NSF-Teacher Professional Continuum program, Project TEACH – CWU: Targeted Science Instruction for Future teachers |
| \$19,000 | Michael Braunstein, Bruce Palmquist, David Laman, Sharon Rosell, and Andy Piacsek (2005), Physics Demonstration Equipment. |
| \$3,520 | Chenyang Li and Bruce Palmquist (2002) CWU College of Arts and Humanities Interdisciplinary Teaching Project Grant. |
| \$1,269 | CWU Instruction/Research Equipment Grant (2002). Using Binoculars to Learn and Appreciate Astronomy. |

\$306,960 Keith Clay (PI), Sam Ball, Steve Kinholt, Bruce Palmquist, Kip Herren (Co-PIs) (2001). NSF Proposal # 0101489, Project TEACH II.

\$660 Solar Outreach Project. Len Thayer Small Grant, CWU (2001)

\$212,607 Steve Kinholt (PI), Keith Clay, Kip Herren, Bruce Palmquist, Jan Rizzuti (Co-PIs) (1999). NSF Proposal # 9876589. Project TEACH.

\$2,000 Central Washington Regional Science Olympiad (1996). Central Washington University Alumni Association Grant.

\$36,241 Louise Baxter, Martha Kurtz and Bruce Palmquist (1995). Delivering Essential Academic Learnings to All Rural Science Students. Eisenhower Professional Development Program.

\$2,500 Michael Braunstein and Bruce Palmquist (1995). Astronomy Access Program. Central Washington University Alumni Association Grant.

Presentations

International

- *Made **nine invited presentations** about American education and teacher education at Shaan'xi Normal University (6/08, Xi'an, China.) Presentation titles:
 - *My Observations of Education in China
 - *Current Status of and Best Practices in Teacher education in the USA
 - *The Design and Implementation of a Middle School Science Class
 - *Introduction to Project TEACH and the CWU Science Education Program
 - *Science Education Reform in the USA
 - *Exploring American Physics Textbooks
 - *Different pathways to becoming a Teacher in America
 - *Using Project-Based Learning to Foster Creativity
 - *Project-Based Learning in the Middle School

National

- *Invited Speaker Using the SPIN-UP Report and UTeach to Revitalize Teacher Education for the summer meeting of the American Association of Physics Teachers. (7/20, Virtual)
- *Presented Strengthening a Physics Teacher Preparation Program Using the SPIN-UP Report for the summer meeting of the American Association of Physics Teachers. (7/15, College Park, MD)
- *Presented Facilitating Collaboration in an Online Introductory Astronomy Laboratory for the summer meeting of the American Association of Physics Teachers. (7/14, Minneapolis, MN)
- *Presented Using Case Studies and Community-Based Inquiry for the summer meeting of the American Association of Physics Teachers. (7/13, Portland, OR)
- *Presented, along with Asa Bradley (Spokane Valley CC; Keith Clay, Green River CC; and Ted Hodapp, American Physical Society), The Role of the TYC in Teacher Training, at the National Two-Year College Physics Meeting (7/10, Portland, OR)
- *Presented, along with Mary Whitfield, Edmonds CC, Ann Anderson, CWU graduate, and Jan Gram, Green River CC What does Reformed Elementary Science teaching Look Like? at the National Association for Community College Teacher Education Programs conference (2/08, Denver, CO)
- *Presented, along with Mary Whitfield, Edmonds CC, Bob Filson, Green River CC, Terry Thibodeaux, CWU graduate, and Judy Rene, Green River CC Science Teaching Characteristics of Community College Graduates at the National Association for Community College Teacher Education Programs conference (3/07, New Orleans, LA)
- *Presented, along with Mary Whitfield, Edmonds CC, the poster Targeted Science Classes for Future Teachers at the NSF-TPC PI conference (5/06, Reston, VA).
- *Presented, along with Bob Filson, Green River CC and Kristin Norgard, CWU graduate, Interdisciplinary Science for Future Teachers at the National Association for Community College Teacher Education Programs conference (3/06, Atlanta, GA)
- *Presented, along with Steve Kinholt, Green River CC and three community college teams, Focus on Students: Pre-Service Activities & Courses for Future PreK-12 Teachers of Math & Science at the National Science and Math Teacher Preparation Conference II (3/05, San Antonio, TX)
- *Presented, along with Steve Kinholt, Green River CC Connecting Teacher Preparations Across Campus, to K-12, and to the University at the National Science and Math Teacher Preparation Conference (2/04, Washington, DC)

- *Presented, along with three community college teams, Pre-service Activities and Courses for Future Math and Science Teachers at the National Science and Math Teacher Preparation Conference II (10/02, Washington, DC)
- *Presented, along with Pam Reising, Green River CC and student Debbie Hanninen, The Missing Link? The Community College Role in Pre-service and In-service Teacher Preparation at the American Association of Community Colleges national meeting (4/02, Seattle, WA)
- *Presented, along with Steve Kinholt, Green River CC Project TEACH: Creating a Pathway to a Teaching Career at the National Science and Math Teacher Preparation Conference (3/02, New Orleans, LA)
- *Presented the paper, Preservice Teachers' Views of the Nature of Science During a Postbaccalaureate Science Teaching Program at the 1994 National Association for Research in Science Teaching conference (3/94, Anaheim, CA)
- *Moderated two presentation sessions about Curriculum Development and Educational Policy at the 1992 National Conference for Undergraduate Research (4/92, Minneapolis, MN).

State/Regional

- *Presented Facilitating a Simple research project in an Online Astronomy Class for the annual meeting of the Washington Section of the American Association of Physics Teachers. (10/16, Tacoma, WA)
- *Presented Recruiting and Educating Future Physics Teachers: Case Studies and Effective Practices for the annual meeting of the Washington Section of the American Association of Physics Teachers. (10/15, Toppenish, WA)
- *Presented Using Case Studies and Community-Based Inquiry for the annual meeting of the Washington Section of the American Association of Physics Teachers. (10/13, Richland, WA)
- *Presented Facilitating Student Creativity using Online Simulations for the annual meeting of the Washington Section of the American Association of Physics Teachers. (10/12, Bellingham, WA)
- *Presented CWU Science and Math Education Partnerships facilitated through CESME for the annual meeting of the Washington Section of the American Association of Physics Teachers. (10/11, Ellensburg, WA)
- *Presented Implementing a Low Budget SCALE-UP Physics Class for the annual meeting of the Washington Section of the American Association of Physics Teachers. (10/10, Olympia, WA)
- *Presented Using short, student-created videos in a science methods course at the Northwest Association of Teacher Educators conference (4/10, Ellensburg, WA)
- ***Invited Banquet Speaker** for the annual meeting of the Pacific Northwest Association of College Physics. The presentation was called 100 Hours of Astronomy (4/3/09).
- ***Invited Speaker** for the annual meeting of the Washington Section of the American Association of Physics Teachers. The presentation was called Science WASL in Teacher Preparation (10/04, Auburn, WA)
- * **Invited Speaker** for the Community and Technical College Teacher Education Collaboration Event. Presented, along with Leslie Heizer, Science Education, a summary of CWU at GRCC, (10/04, Ellensburg)
- *Presented the poster, Using Multiple Forms of Reflection to Enhance Learning at the Continuums of Service Conference (4/02, Portland, OR)
- *Presented an astronomy teaching paper at the Washington Section of the American Association of Physics Teachers. The presentation was called, An interactive spectra demonstration (10/00, Ellensburg, WA)
- *Presented, along with Keith Clay, Green River Community College, an informational session called "Project TEACH: a Washington CETP" at Showcase 2000. (6/00, Forest Grove, OR)
- *Advised a presentation by physics major Tim Faix at the Washington Section of the American Association of Physics Teachers. The presentation was called, Research Involving an Oral Presentation Assignment in an Introductory Level Physics Class (10/99, Tacoma, WA)
- *Presented an astronomy assessment project at the Washington Section of the American Association of Physics Teachers. The presentation was called, What's that up in the sky? (10/98, Seattle)
- *Presented the results of a writing project at the Washington Section of the American Association of Physics Teachers. The presentation was called, You call that acceptable homework?! (10/97, Spokane)
- *Presented, along with Mike Braunstein, the Workshop, Restructuring College Science Laboratories at the Lilly Conference - Northwest (10/96, Portland, OR)
- *Presented the paper, Interview Assessment in College Physics Labs, to the annual meeting to the Pacific Northwest Association of College Physics" (3/96, Auburn, WA)
- *Presented, along with physics majors Bruce Buck and Ray Harris, the Workshop, Solving "Real World" Physics Problems in Cooperative Groups at the 1995 Washington Science Teachers Association Conference (3/95), Wenatchee, WA.

*Presented the paper, Evaluation of the 1992 Research Explorations for Teachers Program at the 1992 Minnesota Science Teachers Association conference (10/92, Eden Prairie High School, Eden Prairie, Minnesota).

Local

- *Center for Teaching and Learning workshop Short, student-created videos: You'll Flip over this idea (January, 2011)
- *Gave the presentation Astronomy, Evolution, and Religion: Can't they all just get along? for Darwin Week at CWU (February, 2010).
- *Center for Teaching and Learning workshop Short, student-created videos: You'll Flip over this idea (January, 2010)
- *Gave the presentation "Rooted in faith, supported by science" at two Ellensburg Christian School Chapel sessions (January, 2010)
- *Center for the Teacher Scholar workshop, along with Ken Briggs, Active learning (January, 2010)
- *Center for Teaching and Learning workshop Short, student-created videos: You'll Flip over this idea (May, 2009)
- *CWU Natural Science Seminar, "Journey to the East: My Quest to Learn about Education in Xi'an, China", (February, 2009)
- *Gave the presentation "The Universe is Big" at two Ellensburg Christian School Chapel sessions (January, 2008)
- *Gave the presentation "Intelligent Design: Is it an Intelligent Curricular Choice" at the Ellensburg Unitarian-Universalist Congregation for Evolution Sunday (February, 2007)
- ***Keynote Speaker** for the Center for Teaching and Learning and Professional Education Advisory Board reception for the CWU Top 10 student teachers (June, 2006)
- *Gave the presentation Science and Religion: Friends or Foes for Darwin Week at CWU (February, 2006).
- *Gave the presentation Science and Religion: Friends or Foes for the Central Association of Life Long Learning in Ellensburg (February, 2006).
- *Developed and presented, with Martha Kurtz and Ian Quitadamo, a faculty workshop on Critical Thinking (September, 2003)
- *Contributed to the poster Bridge of the Gods and the Table Mountain Rock Alignments: Archaeological GPS Mapping and Interpretations along with Jessica Middleton, Daniel Alden, Steve Hackenberger, and Jack Powell (May, 2003)
- *Interviewed for a locally produced distance education CD-ROM. I answered questions about developing, teaching, and assessing a course taught via interactive video (spring, 2000)
- *Participated in a panel discussion on the successes and failures pertaining to the use of technology to enhance instruction at the fall all-university faculty meeting (9/99)
- *Presented "You want me to do WHAT in this science class?!: Alternative Assessment in College Classes" at the CWU Natural Science Seminar (2/99)
- *Co-presenter at the CWU Natural Science Seminar called "Sciences Come to Life: Samples of Faculty Research and Teaching in the New Science Building" (10/98)
- *Presented a report called "Interactive Video: Reducing the Pain for Newcomers through Lessons Learned" during a panel presentation called "Oh New Brave Electronic World, How can CWU Keep Pace" at the fall all-university faculty meeting (9/98)
- *Participated in a CWU faculty/student public debate about the role of lecture in teaching (5/97)
- *Presented a report, along with Louise Baxter, called "Classroom Assessment Techniques" at a faculty assessment workshop (5/97)
- *Presented a poster, "Interview Assessment in Physics Labs" at the CWU Faculty Association for Teaching and Learning Poster Session (5/96)
- *Organized and led, with Doug Reynolds, biology, a campus workshop on Collaborative Learning (2/96)
- *Presented the lecture, Cooperative Group Problem Solving in Physics, Central Washington University Physics Department Colloquium, (11/94)

Teacher Workshops

2014

Using Case Studies in Teaching for WA AAPT (1 hour, November, 2014)

2013

Astronomy Training including telescopes for GEAR-UP MOAISC2 (1 day, October 2013)

Case Study Writing for WA AAPT (1 hour, October 2013)

2012

Using online physics simulations for inquiry for WA AAPT (1 hour, October 2012)
 Motion and Design Kit Content Training for ESD 105 (1 day, April 2012)
 Space Science Kit Content Training for ESD 105 (1 day, May 2012)
 2011
 Science Teaching Summer Institute for ESD 171, Wenatchee, WA (5 days, August 2011)
 Space Science Kit Content Training for ESD 105 (2 days, May 2011)
 2010
 Science Teaching Workshop for ESD 171, Wenatchee, WA (1 day, November 2010)
 Science Teaching Summer Institute for ESD 171, Omak, WA (4 days, August 2010)
 Science Teaching Summer Institute for ESD 171, Wenatchee, WA (4 days, August 2010)
 Astronomy Workshop for LENS Project for ESD 105 (1 day, March 2010)
 2009
 Physics Workshop for Eastmont HS, WA teachers (1 day, November 2009)
 Science Teaching Summer Institute for ESD 171, Omak, WA (4 days, August 2009)
 Science Teaching Summer Institute for ESD 171, Wenatchee, WA (4 days, August 2009)
 Physics and Earth Science Workshops for LENS Project for ESD 105 (2 days, July 2009)
 2008
 Physics and Workshops for LENS Project for ESD 105 (2 days, July 2008)

Consulting

Phi Theta Kappa, Community College Honor Society (2001-2005). Mentored six community colleges as they enhanced their efforts in teacher preparation.

Service

University Service

- Multimodal Learning Faculty Fellow (2016-2018)
- Science Education and Physics advisor (1993 - present)
- SOURCE Judge (2010-present)
- Douglas Honors College lectures, two per year on the history and philosophy of science (1994 - 2010)
- Astronomy Presentations to CWU groups such as SSS and LLCs (1993 - present)
- Taught UNIV 100/101, freshman advising seminar (1997 – 2002, 2004-7), incorporated an academic service-learning project in my courses, got academic-service learning approved as part of the course syllabus.
- Advising Day/Major fair/CWU Open House participant (1997 – present)

University Committee memberships

- High School Partnerships Advisory Council (2019-present)
- CWU Sammamish Advisory Council (2018-present)
- Student Success Council (2010-2011)
- Member, Faculty Senate Curriculum Committee (2002 – 2010, 2016-2019)
- Center for Teaching and Learning Standard V Committee (2008-2010)
- Center for Teaching and Learning Standard V Initial Field Experience Subcommittee (2009-2010)
- Northwest Commission on Colleges and Universities Accreditation Standard 6 committee co-chair (2007–2008)
- Center for Teaching and Learning Advisory council (2008, 2011-2015)
- Teacher Education Advisory Council (2016-17)
- Elementary Education Advisory council (2008-2015)
- Center for Teaching and Learning Scholarship committee (1995 - 2007), committee chair (1999-2007)
- Physics Department search committees (1996-1997, 2000-2001 [chair], 2006-7 [chair], 2013)
- Physics Department Personnel Committee Chair (2007-2015)
- President's Synthesizing Committee (2000-2001)
- University Professional Education Council: Admission, Matriculation and Graduation Subcommittee (1994-2001)
- Library Advisory Committee (1999-2002), committee chair (1999-2002)
- New science building steering committee (1993 – 1998)
- Even newer science building steering committee (2011-present)

- University Professional Education Council (1994 - 1998)
- Science Education faculty search committees (1994 – 95 [chair], 2002-3, 2004-5, 2005-6, 2007-8 [chair])
- Science Education Department Personnel Committee Chair (2008-2014)
- Kent Site Director search committee (2008-9)

Thesis/Project Committees

2015: Jarod Drozdowski (M.S., Anthropology)
 2006: Tracy Watrous-Kelly (M.S., Chemistry)
 2005: Josh Munroe (Douglas Honors Thesis)
 2003: Ray Harris (M.Ed.), Roger Hume (M.Ed.)
 2002: Shauna Curtis (M.Ed.), Marci Gano (M.Ed.)
 2001: David Bruce (M.Ed.)
 2000: Kyle Alm (Douglas Honors Thesis)
 1999: Susan Thomas (M.Ed.)
 1998: Ian Loverro (M.Ed.)
 1997: Kerry Ward (M.Ed.), Ginni Costa (Douglas Honors Thesis)

Selected Community Service (Local, State and Regional)

Local

- Science Education Club Advisor (2014-2015)
- Astronomy Club Advisor (2000-2014)
- Public Astronomy Presentations to local school groups, approximately six per year (1993 - present)
- Organize star parties for school groups and the public, approximately two per year (2000-2014)
- Planetarium shows for GEAR-UP students (2003-2008)
- Helped organize "Expanding your Horizons," a program to get adolescent girls interested in science (2000-2014)

State

- Participated in a meeting with the state HECB to determine new college admission standards (3/96 in SeaTac). Also gave them feedback on the work to come out of the meeting. Developed competency-based standards college admission standards for science (11/99 in SeaTac). Modified standards and developed assessments (10/00 in Selah)
- Assessed college writing samples for the Washington Senior Writing Assessment (2000-1)
- Member, Washington Science Olympiad Executive Committee (1995 - 1997)
- Member, Washington Science Talent Search Board (1995 - 96)
- Prepared a document relating the draft state science benchmarks to minimum college admission standards (1995)

Regional

- Member, Pacific Northwest Science Talent Search Board (1996 - 2000)
- Made presentations to middle school students at the regional conference Multicultural Experiences in Math and Science (1998-2003)

National

Reviewer for NSF CCLI grants (2011)
 Reviewer for American Educational Research Journal (1998)
 Reviewer for The Physics Teacher (2003, 2005)
 Contributed Astronomy Education Research: An Annotated Bibliography
 (www.execpc.com/~starlab/aer/biblio.html). (11/01)

Academic and Professional Organizations

- *American Association of Physics Teachers
- *National Science Teachers Association
- *Sigma Pi Sigma (National Physics Honor Society)
- *Alpha Chi (National Honor Society)

Courses Taught

Central Washington University

COTS 184 – First Year Experience (Why People Believe Dumb Things)
DHC 161 – Physical and Biological Systems II
DHC 380 - Issues in Science and religion
PHIL 398 – Issues in Science and religion
PHYS 101/102 – introductory astronomy courses (totally online and face-to-face)
PHYS 106 - inquiry based physics course for preservice K-8 teachers and general education
PHYS 111, 112, 113 - year long algebra-based introductory physics course (111 totally online and face-to-face)
PHYS 181, 182, 183 - year long calculus-based introductory physics course
PHYS 292/392 Exploring Physics teaching I/II – a seminar and learning assistant experience
PHYS 317, 318 – 2-quarter modern physics sequence
PHYS 489 – capstone course for physics majors
PHYS 492 – supervise and advise lab TAs
PHYS 498 - optics course for teachers
SCED 322 - science teaching methods course for preservice elementary teachers
I have also taught this course as a hands-on science and science methods class via two-way video and audio (i.e., distance education)
SCED 324 - science teaching methods course for preservice secondary teachers
SCED 398 - series of one week physics courses for preservice and inservice teachers
SCED 420 – science teaching practicum
SCED 422 – advanced science teaching methods
SCED 551 – topics in physics (for middle school science teachers)
STP 308 – Perspectives on Science, Mathematics, and STEM Education
UNIV 101 – freshman advising seminar

University of Minnesota

GC 0615 - basic mathematics course to prepare college students for algebra
SeEd 5700/5701 - helped teach a middle school science methods class and practicum
SeEd 5702/5703 - helped teach a high school science teaching methods class and practicum
SeEd 5704/5705 - helped facilitate a student teaching seminar
Phys 1041/1042 - helped develop and teach a noncalculus-based physics lab course
Phys 1251/1252/1253 - helped develop a calculus-based physics lab course