

CURRICULUM VITAE

Bruce Johnson

Professor and Department Head

Teaching, Learning and Sociocultural Studies, University of Arizona (UA)

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Education

- PhD University of New Mexico 1998
Major: Educational Psychology; Minor: Science Education
Dissertation: *The Relationships Between Elementary Teachers' Perceptions of School Climate, Student Achievement, Teacher Characteristics, and Community and School Context*; Joseph Stevens, advisor
- MS George Williams College 1982
Major: Environmental Education Administration
- BS Northern Arizona University 1979
Major: Elementary Education; Minor: Anthropology

Employment

University Teaching and Supervising Experience

- Department Head – Teaching, Learning & Sociocultural Studies (formerly Teaching & Teacher Education), College of Education, University of Arizona, Tucson, AZ 2007-present
- Professor – Teaching and Teacher Education, College of Education, University of Arizona, Tucson, AZ 2012-present
- Co-Director, STEM Learning Center, University of Arizona, Tucson, AZ 2012-present
- Associate Faculty – Teacher Preparation Program, College of Science, University of Arizona, Tucson, AZ 2002-16
- Associate Professor – Teaching and Teacher Education, College of Education, University of Arizona, Tucson, AZ 2006-12
- Assistant Professor – Teaching and Teacher Education, College of Education, University of Arizona, Tucson, AZ 2000-06
- Adjunct Assistant Professor – Study Abroad Advisor (Australia), Student Project for Amity Among Nations (SPAN), University of Minnesota, Minneapolis, MN 1999-01
- Assistant Professor – Elementary Science and Math Education, Gustavus Adolphus College, St. Peter, MN 1998-00
- Instructor & University Supervisor – Math, Science, Environmental and Technology Education Program, University of New Mexico 1996-97

K-12 Classroom Teaching Experience

3rd, 4th & 5th grade Classroom Teacher, Manzano Day School, Albuquerque, NM	1987-96
5th grade Classroom Teacher, Page Middle School, Page, AZ	1982-84
6th grade Classroom Teacher, Grandview Middle School, Phoenix, AZ	1980-81

Outdoor/Environmental Teaching and Administrative Experience

Co-Director and Co-Owner, Down to Earth Adventures, Corrales, NM	1993-97
Director, Scott's Creek Field Centre, Prince Alfred College, Morgan, South Australia	1990-91
Director, Fenton Ranch Outdoor School and Camp, Jemez Springs, NM	1987-92
Naturalist/Environmental Educator, Shaker Lakes Regional Nature Center, Cleveland, OH	1984-87
Camp Director, Youth Conservation Corps	
Yosemite National Park, CA	1981
Gunnison National Forest, CO	1980
Sleeping Bear Dunes National Lakeshore, MI	1979
Crew Leader, Youth Conservation Corps	
Superior National Forest, MN	1978
Grand Canyon National Park, AZ	1977
Camp Counselor and Wilderness Trip Leader, YMCA Camp Ihduhapi, MN	1974-75

Honors and Awards

“60 for 60” STEM Community Leader, Southern Arizona Research, Science & Engineering Foundation Honors	2015
Visiting Research Scientist, Faculty of Environmental Studies, Masaryk University, Czech Republic	2014
Erasmus Circle Fellow, UA College of Education	2006
Best Published Paper in 2004 Award, American Educational Research Association Learning Environments Special Interest Group	2005
Invited Visiting Research Fellow, Science and Mathematics Education Centre, Curtin University of Technology, Perth, Australia	2004
Smith Junior Faculty Support Award, UA College of Education	2004-05
Faculty Award for Outstanding Graduate Student Mentoring, UA College of Education	2003-04
Outstanding Graduate Student Mentor, UA Graduate and Professional Student Council	2004
Faculty Award for Outstanding Teaching, UA College of Education	2002-03
Educational Psychology Department, 2001 nominee for University of New Mexico Tom L. Popejoy Prize for best dissertation in the social sciences and education for 1998-2000	2001
Teacher Fellowship, Manzano Day School Parents' Association	1991
Chairman's Award, The Institute for Earth Education	1987

Publications

Books

Johnson, B. & Wohlers, L. (Eds.). (2003). *Earth education: Ein programmatischer Ansatz zum Erfahrungslernen*. Lüneburg, Germany: Institut Für Erlebnispädagogik.

Van Matre, S., & Johnson, B. (1997). *SUNSHIP III: Perception and choice for the journey ahead*. Greenville, WV: The Institute for Earth Education.

Subsequent publication in German under the title *Sonnenschiff III: Wahrnehmung und Entscheidung für die Bevorstehende Reise* (2000).

Currently being translated for publication in Italian and Finnish.

Van Matre, S., Johnson, B., & Bires, F. (1990). *Conceptual encounters II*. Greenville, WV: The Institute for Earth Education.

Subsequent publication in German under the title *Konzepte Treffen II* (2000).

Currently being translated for publication in Italian and Finnish.

Van Matre, S. & Johnson, B. (1988). *Earthkeepers: Four keys for helping young people live in harmony with the earth*. Greenville, WV: The Institute for Earth Education.

Subsequent publication in German under the title *Erdhüter: Vier Schlüssel, um jungen Menschen zu helfen, mit der Erde in Einklang zu leben* (1997).

Subsequent publication in Dutch under the title *Earthkeepers: Vier sleutels om jonge mensen to helpen in harmonie met de aarde to leven* (2000).

Subsequent publication in Italian under the title *Custodi della Terra: Quattro chiavi per aiutare I giovani a vivere in armonia con la terra* (2012).

Subsequent publication in Czech under the title *Strážci Země: Čtyři klíče, které pomáhají mladým lidem žít v harmonii se Zemí* (2013).

Currently being translated for publication in Chinese, Finnish, Greek, Japanese, Slovenian, and Spanish.

Van Matre, S., Johnson, B., Soloway, E., & Bires, F. (1987). *Conceptual encounters I*. Greenville, WV: The Institute for Earth Education.

Subsequent publication in German under the title *Konzepte Treffen I* (1998).

Subsequent publication in Dutch under the title *Conceptuele Ontmoetingen I* (2006).

Subsequent publication in Italian (2012).

Subsequent publication in Czech under the title *Pojmová Setkání* (2013).

Currently being translated for publication in Chinese, Finnish, Greek, Japanese, Slovenian, and Spanish.

Chapters in Books

Johnson, B., & Manoli, C. (2010). The impact of methodological practices in research and evaluation in environmental learning. In D. B. Zandvliet (Ed.), *Diversity in environmental education research*. (pp. 43-64). Rotterdam: Sense Publishers.

- Johnson, B. (2007). Education and research for sustainable living. In D. B. Zandvliet & D. L. Fisher (Eds.), *Sustainable communities, sustainable environments*. (pp. 85-96). Rotterdam, Netherlands: Sense.
- Johnson, B., & Roberts, E. (2004). Science in public schools: What is it and who is it for? In K. D. Vinson & W. Ross (Eds.), *Defending public schools: Curriculum continuity and change in the 21st century*. (pp.61-75). Westport, Connecticut: Praeger.
- Johnson, B. (2003). Die Rolle van Erlebnissen beim Verstehen, Fühlen & Umsetzen. In B. Johnson, & L. Wohlers, (Eds.). *Earth education: Ein programmatischer Beitrag zum Erfahrungslernen* (pp. 5-14). Lüneburg, Germany: Institut Für Erlebnispädagogik.
- Johnson, B., & Wohlers, L. (2003). Einleitung. In B. Johnson, & L. Wohlers, (Ed.). *Earth education: Ein programmatischer Beitrag zum Erfahrungslernen* (pp. 3-4). Lüneburg, Germany: Institut Für Erlebnispädagogik.
- Wohlers, L. & Johnson, B. (2003). Earth education: Ein programmatischer Ansatz zum Erfahrungslernen. In B. Johnson, & L. Wohlers, (Eds.). *Earth education: Ein programmatischer Beitrag zum Erfahrungslernen* (pp. 16-25). Lüneburg, Germany: Institut Für Erlebnispädagogik.
- Johnson, B. (1995). Earth education: Learning to live more lightly. In R. Kraft & J. Kielsmeier (Eds.), *Experiential Learning In Schools and Higher Education* (pp. 123-127). Dubuque, IA: Kendall/Hunt.

Journal articles (peer-reviewed)

- Johnson, B., & Činčera, J. (2015). Examining the relationship between environmental attitudes and behaviour in education programmes. *Socialni Studia*, 12 (3), 97-111.
- Činčera, J., & Johnson, B., & Kovacikova, S. (2015). Evaluation of a place-based environmental education program: From here to there. *Applied Environmental Education and Communication*, 14 (3), 178-186.
- Bogner, F. X., Johnson, B, Buxner, S. & Felix, L. (2015). The 2-MEV model: Constancy of adolescent environmental values within an 8-year time frame. *International Journal of Science Education*, 37 (12), 1938-1952.
- Manoli, C. C., Johnson, B., Hadjichambis, A. C., Paraskeva-Hadjichambi, D., Georgiou, Y., & Ioannou, H. (2014). Evaluating the impact of the Earthkeepers earth education program on children's ecological understandings, values and attitudes, and behaviour in Cyprus. *Studies in Educational Evaluation*, 41, 29-37.
- Činčera, J. & Johnson, B. (2013). Earthkeepers in the Czech republic: Experience from the implementation process. *Envigogika*, 8(4), 1-14.
- Schneller, A. J., Johnson, B., & Bogner, F. X. (2013). Measuring children's environmental attitudes and values in northwest Mexico: Validating a modified version of measures to test the Model of Ecological Values (2-MEV). *Environmental Education Research*.
- Felix, L., & Johnson, B. (2013). Back in the classroom: Teacher follow-through after an earth education program. *Applied Environmental Education & Communication*, 12(3), 187-196.
- Bailey, J. M., Johnson, B., Prather, E. E., & Slater, T. F. (2012). Development and validation of the Star Properties Concept Inventory. *International Journal of Science Education*, 34(14), 2257-2286.

- Johnson, B., & Manoli, C. C. (2011). The 2-MEV Scale in the US: A measure of children's environmental attitudes based on the Theory of Ecological Attitude. *Journal of Environmental Education*, 42(2), 84-97.
- Bailey, J. M., Prather, E. E., Johnson, B., & Slater, T. F. (2009). College students' preinstructional ideas about stars and star formation. *Astronomy Education Review*, 8, 1-17.
- Johnson, B., & Manoli, C. (2008). Using Bogner and Wiseman's Model of Ecological Values to measure the impact of an earth education program on children's environmental perceptions. *Environmental Education Research*, 14(2), 115-127.
- Johnson, B., Stevens, J. J., & Zvoch, K. (2007). Teachers' perceptions of school climate: A validity study of the revised School Level Environment Survey (SLEQ). *Educational and Psychological Measurement*, 67, 833-844.
- Manoli, C., Johnson, B., & Dunlap, R. (2007). Assessing children's views of the environment: Modifying the New Ecological Paradigm Scale for use with children. *Journal of Environmental Education*, 38(4), 3-13.
- Johnson, B., & Stevens, J. J. (2006). Student achievement and elementary teachers' perceptions of school climate. *Learning Environments Research*, 9(2), 111-122.
- Jardine, D. W., Johnson, B., & Fawcett, L. (2005). Further thoughts on "Cutting Nature's Leading Strings": A conversation. *Canadian Journal of Environmental Education*, 10, 52-61.
- Johnson, B., & McClure, R. (2004). Validity and reliability of a revised version of the Constructivist Learning Environment Survey (CLES). *Learning Environments Research*, 7(1) 65-80.
- Johnson, B. (2003). The role of experience in understanding, feeling, and processing. *Zeitschrift Für Erlebnispädagogik*, 23(5/6), 5-13.
- Johnson, B., & Wohlers, L. (2003). Introduction to the special issue on earth education. *Zeitschrift Für Erlebnispädagogik*, 23(5/6), 3-4.
- Wohlers, L., & Johnson, B. (2003). A programmatic approach: Purposeful experiences. *Zeitschrift Für Erlebnispädagogik*, 23(5/6), 14-22.
- Johnson, B., & Stevens, J. J. (2001). Exploratory and confirmatory factor analysis of the School Level Environment Questionnaire (SLEQ). *Learning Environments Research*, 4(3), 325-344.
- Johnson, B. (1990). Earth education: Learning to live more lightly. *Journal of Experiential Education*, 13(3), 38-41.

Refereed Book Reviews

- Hautecoeur, J. (Ed.). (2003): Ecological Education in Everyday Life: ALPHA 2000. *Anthropology & Education Quarterly*, 34(1).

Presentations

Symposia

- Refereed symposium: Johnson, B., Manoli, C., & Buxner, S. (2016, September). *Ecological values & connectedness to nature: Are we measuring different constructs?* Paper to be presented at the Eleventh Conference of European Researchers in Didactics of Biology, Karlstad, Sweden.

- Refereed symposium: Johnson, B., Hadjichambis, A. C., Mappouras, D. G., & Felix, L. (2015, September). *Using the Model of Ecological Values to investigate the environmental attitudes of young adolescents in Cyprus*. Paper presented at the 11th Conference of the European Science Education Research Association, Helsinki, Finland.
- Refereed symposium: Bogner, F. X., & Johnson, B. (2015, September). *2-MEV model: Green attitudes over the years*. Paper presented at the 11th Conference of the European Science Education Research Association, Helsinki, Finland.
- Refereed symposium: Manoli, C. C., & Johnson, B. (2015, September). *Investigating the relationship between children's environmental perceptions and ecological behavior through environmental learning experiences*. Paper presented at the 11th Conference of the European Science Education Research Association, Helsinki, Finland.
- Invited participant: (2013, July). 1st European Science Education Academy Workshop. Crete, Greece.
- Refereed symposium organizer: Johnson, B. (2013, September). *International perspectives on environmental values and attitudes and their contribution to environmental literacy*. Symposium at the 10th Conference of the European Science Education Research Association, Nicosia, Cyprus.
- Refereed symposium: Johnson, B., Felix, L., & Manoli, C. (2013, September). *Values and attitudes in earth education programs*. Paper presented at the 10th Conference of the European Science Education Research Association, Nicosia, Cyprus.
- Refereed symposium: Hadjichambis, A., Johnson, B., Manoli, C., Mappouras, D., & Felix, L. (2013, September). *Conceptual understandings and environmental values on the basis of a new biology curriculum: National results from Cyprus*. Paper presented at the 10th Conference of the European Science Education Research Association, Nicosia, Cyprus.
- Invited symposium chair: Johnson, B. (2012, April). *Teaching and learning for the environment: Perspectives on understandings, values, and actions*. Symposium at the Annual Meeting of the American Educational Research Association, Vancouver, Canada.
- Invited paper in a symposium: Johnson, B. (2012, April). *Values in environmental learning*. Paper presented at the Annual Meeting of the American Educational Research Association, Vancouver, Canada.
- Refereed symposium: Johnson, B., Bogner, F. X., Dunlap, R. E., Manoli, C., & Wiseman, M. (2009, April). *Views of the environment: Theory, measurement, and results*. Paper presented at the Annual Meeting of the National Association of Research in Science Teaching, Garden Grove, CA.
- Invited participant: (2005, September). *Optimizing science achievement for all students*. Maryland Institute for Minority Achievement and Urban Education. University of Maryland, College Park, MD.
- Refereed paper presentation: Johnson, B. (2003, October). *Conceptual understanding in ecological systems and in our lives*. Paper presented in the *Current issues in science education symposium* at the annual conference of the Arizona Educational Research Organization. Tempe, AZ.
- Invited participant: (2003, August). *Earth education research symposium*. De Koog, Texel, The Netherlands.

Invited paper presentation: Johnson, B. (2002, April). *Concept teaching: Beyond categorization (2002, April)*. Paper presented in the *Issues in curriculum, instruction and teacher education symposium* at the annual meeting of the American Educational Research Association, New Orleans, LA.

Invited discussant: Romano, M., DeSalvo, C., & Wells, P. (2002, February). *Redesigning teacher education programs for quality and accountability*. Refereed symposium at the Annual Meeting of the American Association of Colleges for Teacher Education, New York, NY.

Invited participant: (2001, November). *Earth education research symposium*, Universität Lüneburg, Lüneburg, Germany.

Conferences – Accepted and presented papers (refereed)

National/International

Johnson, B. & Činčera, J. (2016, September). *The development of ecological attitudes of children over five years as they participated in three earth education programs*. Paper to be presented at the Eleventh Conference of European Researchers in Didactics of Biology, Karlstad, Sweden.

Manoli, C., Johnson, B., & Buxner, S. (2016, April). *The Connectedness to Nature Scale: What does it measure?* Paper presented at the annual meeting of the American Educational Research Association, Washington, DC.

Johnson, B., & Činčera, J. (2014, September). *Participation of Czech children in the Earthkeepers earth education programme*. Paper presented at the European Conference on Educational Research, Porto, Portugal.

Johnson, B., Felix, L. & Buxner, S. (2014, September). *Ecological values across years, ages and locations*. Paper presented at the Annual Conference of the Ecological Society of Germany, Switzerland and Austria, Hildesheim, Germany.

Johnson, B. (2014, August). *Revealing the hidden ways we use energy in our daily lives*. Paper presented at the Annual Meeting of the Ecological Society of America, Sacramento, CA.

Jaksha, A., & Johnson, B. (2014, April). *A new theoretical framework for researching environmental identity*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, Pittsburgh, PA.

Sonam, T., & Johnson, B. (2014, March). *Tibetan Buddhist monastics studying western science: Negotiating Buddhist theology and western science*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, Pittsburgh, PA.

Buxner, S., Olsen, J. Johnson, B., Vezino, B., & Sonam, T. (2014, April). *Exploring how industry experiences impact teachers' conceptions of relevancy and authenticity related to teaching practices*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, Pittsburgh, PA.

Johnson, B., & Felix, F. (2013, November). *Investigating children's environmental values, identities and actions*. Paper presented at the Southwest Consortium for Innovative Psychology in Education, Tucson, AZ.

Manoli, C., Hadjichambis, A., Johnson, B., Hadjichambi, D., Yiannis, G., Ioannou, H., & Felix, L. (2013, September). *Empowering students and teachers towards the implementation of the new curriculum for sustainable development in Cyprus through earth education programs*. Paper presented at the 10th Conference of the European Science Education Research Association, Nicosia, Cyprus.

- Johnson, B. (2013, June). *The university as a leader in a community-wide STEM effort*. Roundtable discussion at the Science and Mathematics Teacher Imperative National Conference, St. Louis, Mo.
- Johnson, B. (2013, June). *Bringing industry experiences back to the classroom*. Roundtable discussion at the Science and Mathematics Teacher Imperative National Conference, St. Louis, Mo.
- Manoli, C., Hadjichambis, A., Mappouras, D., & Johnson, B. (2013, April). *New biology curriculum on the basis of a national educational reformation: The impact of an educational intervention on student's conceptual understandings and environmental attitudes*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
- Manoli, C., Johnson, B., Hadjichambis, A., Paraskeva-Hadjichambi, D., Georgiou, Y., & Ioannou, H. (2012, November). *Learning to live more lightly: Children's understandings, attitudes and behavior in arid lands*. Paper presented at the International Conference on Drylands, Deserts and Desertification, Sede Boqer, Israel.
- Johnson, B. (2012, September). *Intervention of earth education programs with ecological values and actions*. Paper presented at the annual conference of the Ecological Society of Germany, Switzerland and Austria, Lüneburg, Germany.
- Hadjichambis, A. C., Mappouras, D. G., Manoli, C., & Johnson, B. (2012, September). *New biology curriculum: National results of an educational intervention*. Paper presented at the 9th Conference of European Researchers in Didactics of Biology, Berlin, Germany.
- Doyle, W., & Johnson, B. (2012, April). *Interpersonal spaces in teacher education*. Paper presented at the annual meeting of the International Conference on Interpersonal Relations in Education, Vancouver, Canada.
- Johnson, B., Schaub, E., & Jaksha, A., & Manoli, C. (2012, March). *Young adolescents' views on environmental attitudes, behaviors, and identity: Seeking truth, adventure and harmony*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, Indianapolis, IN.
- Manoli, C., Johnson, B., Hadjichambis, A., Paraskeva-Hadjichambi, D., & Georgiou, Y. (2012, March). *Sustainability through the lens of earth education: Children's ecological understandings and environmental attitudes*. Paper presented at the National Association of Research in Science Teaching, Indianapolis, IN.
- Manoli, C., Johnson, B., Hadjichambis, A., Paraskeva-Hadjichambi, D., & Georgiou, Y. (2011, September). *The impact of earth education on children's ecological understandings and attitudes in Cyprus*. Paper presented at the Biannual Conference of the European Science Education Research Association, Lyon, France.
- Johnson, B., Jaksha, A., Roberts, E., & Mayer, M. (2011, July). *Seeking truth, adventure & harmony: The role of education in the personal quests of young adolescents*. Paper presented at the 6th World Environmental Education Congress, Brisbane, Australia.
- Schneller, A. J., Johnson, B., & Bogner, F. X. (2011, July). *Using the Model of Ecological Values (2-MEV) to measure environmental attitudes in Mexico*. Paper presented at the 6th World Environmental Education Congress, Brisbane, Australia.
- Johnson, B., Rosemartin, D., & Barca, D. (2011, April). *Environmental knowledge, attitudes, and awareness of pre-service teachers and faculty*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, Orlando, FL.

- Schaub, E., & Johnson, B. (2011, April). *Longitudinal analysis of student responses: Insights gained regarding instrument quality and ecological concept development*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, Orlando, FL.
- Johnson, B. (2010, October). *Earth education: A programmatic approach to ecological learning and living*. Poster presented at the Ecology and Education Summit of the Ecological Society of America, Washington, DC.
- Johnson, B., Rosemartin, D., & Barca, D. (2010, September). *Environmental literacy of students and faculty in pre-service education programs*. Paper presented at the Research Symposium at the annual meeting of the North American Association for Environmental Education, Buffalo, NY.
- Johnson, B., Manoli, C., Rosemartin, D., & Barca, D. (2010, March). *Ecological understandings of teachers in the US: What is needed to better prepare our next generation of teachers?* Paper presented at the annual meeting of the National Association of Research in Science Teaching, Philadelphia, PA.
- Roberts, E., & Johnson, B. (2010, March). *What progresses in a learning progression: A longitudinal ground-truth study of one student's understanding of energy in ecosystems*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, Philadelphia, PA.
- Buxner, S., Harris, C. & Johnson, B. (2009, April). *Exploring the usability of district-wide assessments by administrators and teachers for improving science instruction and learning*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, Garden Grove, CA.
- Schaub, E., Buxner, S., Harris, C. & Johnson, B. (2009, April). *Formative assessment in the classroom and across the district*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, Garden Grove, CA.
- Buxner, S., Gomez, R. & Johnson, B. (2009, April). *Developing a Pathfinder-based instrument measuring the conceptual organization of science inquiry in novices and experts*. Paper presented at the annual meeting of the American Educational Research Association, San Diego, CA.
- Yan, B., & Johnson, B. (2008, December). *The model of curriculum integration through environmental learning and its implications to environmental organizations in China*. Paper presented at the Building Green Partnerships for Sustainable Development Conference, Hong Kong.
- Yan, B., & Johnson, B. (2008, October). *Curriculum integration through environmental learning: A case study*. Paper presented at the Research Symposium at the annual meeting of the North American Association for Environmental Education, Wichita, KS.
- Johnson, B., & Manoli, C. (2008, April). *Using the Model of Ecological Values to examine stability of and changes in children's environmental perceptions over time*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, Baltimore, MD.
- Manoli, C., & Johnson, B. (2008, April). *Factors influencing students' ecological actions following participation in an earth education program*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, Baltimore, MD.
- Felix, L., Johnson, B. & Manoli, C. (2008, April). *Back in the classroom: Teacher influence on students' environmental understandings, perceptions, and actions following an earth education program*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, Baltimore, MD.

- Buxner, S., Harris, C. & Johnson, B. (2008, April). *Creating tightly aligned assessments for primary science in collaboration with an urban school district*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, Baltimore, MD.
- Yan, Baohua, and Bruce Johnson. (2007, November). *Curriculum integration through environmental learning for sustainable development: Reconnecting students with the real world*. The 3rd International Forum on Education for Sustainable Development, Beijing, China.
- Manoli, C. & Johnson, B. (2007, April). *The relationship between children's environmental perceptions and ecological actions*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, New Orleans, LA.
- Johnson, B., Roberts, E., and Manoli, C. (2006, April). *The impact of earth education programs on students' understandings of ecological concepts*. Paper presented at the annual meeting of the National Association for Research in Science Teaching, San Francisco, CA.
- Manoli, C., & Johnson, B. (2006, April). *Examining children's environmental perceptions: The relationship between the Model of Ecological Values and the New Ecological Paradigm/Dominant Social Paradigm Continuum*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, San Francisco, CA.
- Roberts, E., & Johnson, B. (2006, April). *Fourth and fifth graders' responses to a pilot item on the Ecological Concept Questionnaire*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, San Francisco, CA.
- Bailey, J., Johnson, B., Prather, E., & Slater, T. (2006, April). *Development and validation of the star properties concept inventory*. Paper presented at the annual meeting of the National Association of Research in Science Teaching, San Francisco, CA.
- Dokter, E., Slater, T., Johnson, B. & Prather, E. (2006, April). *Beyond inspiration: Assessing the impact of a teaching practice workshop for college astronomy faculty*. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, CA.
- Johnson, B., & Manoli, C. (2005, October). *Earth education research and evaluation*. Paper presented at the Research Symposium at the annual meeting of the North American Association for Environmental Education, Albuquerque, NM.
- Johnson, B., & Mayer, M. (2005, October). *Constructing understandings of ecological concepts*. Paper presented at the annual meeting of the North American Association for Environmental Education, Albuquerque, NM.
- Johnson, B. (2005, August). *Development of student understanding of ecological concepts*. Paper presented at the Fourth International Conference on Science, Mathematics, and Technology Education, Victoria, British Columbia, Canada.
- Johnson, B., & Manoli, C. (2005, August). *Education and research for sustainable living*. Paper presented at the Fourth International Conference on Science, Mathematics, and Technology Education, Victoria, British Columbia, Canada.
- Roberts, E., & Johnson, B. (2005, April). *Reasoning up and down the food chain: Fifth graders' understandings of energy flow after an earth education immersion experience*. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Dallas, TX.
- Bailey, J., Johnson, B., Prather, E., & Slater, T. (2005, April). *Students' beliefs about stars and star formation*. Paper presented at the annual meeting of the National Association for Research in Science Teaching, Dallas, TX.

- Dokter, E., Johnson, B. (2005, April). *Pilot study on the nature of college science learning environments*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Quebec, Canada.
- Manoli, C., Johnson, B. & Dunlap, R. (2005, April). *Assessing children's views of the environment: Modifying the New Ecological Paradigm scale for use with children*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Quebec, Canada.
- Johnson, B., Carson, J., Richter, P., & Wohlers, L. (2004, July). *Connecting outdoor learning experiences to our schools and our homes: An international study of teachers' understandings of energy in ecological systems and In our lives*. Paper presented at the International Outdoor Education Research Conference, Bendigo, Australia.
- Carson, J., & Johnson, B. (2004, July). *Attempting environmental education reform: Initiation and implementation of programmatic, outdoor environmental learning into public school curricula*. Paper presented at the International Outdoor Education Research Conference, Bendigo, Australia.
- Bailey, J. M., Prather, E. E., Johnson, B., Slater, T. F., & Ward, R. A. (2004, July). *Results on research into students' ideas about stars and star formation*. Invited paper presented at the 129th National Meeting of the American Association of Physics Teachers, Sacramento, CA, 2 August 2004. Abstract appears in *Announcer*, 34 (2), 103.
- Slater, T., Johnson, B., Novodvorsky, I., Tomanek, D., & Hall-Wallace, M. (2003, November). *A novel earth system science teacher preparation program*. Paper presented at the annual meeting of the Geological Society of America, Seattle, WA.
- Johnson, B. (2003, April). *Constructivist learning environments: How do science and mathematics teacher educators value the dimensions they expect to see in their graduates' classrooms?* Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.
- Johnson, B., Stevens, J., & Kvoch, K. (2003, April). *Teachers' perceptions of school climate: A validity study of the revised School Level Environment Survey (SLEQ)*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.
- Carson, J., & Johnson, B. (2003, April). *A bold response to the need for earth education: An Australian school's endeavor to create a comprehensive, integrated environmental learning program*. Paper presented at the annual meeting of the American Educational Research Association, Chicago, IL.
- Johnson, B., & McClure, R. (2002, April). *Validity and reliability of a revised version of the Constructivist Learning Environment Survey (CLES)*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.
- Johnson, B., Carson, J., Kilbane, J., Martin, D., & Wohlers, L. (2002, April). *Teachers' understandings of ecological concepts*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.
- Johnson, B., & Mayer, M. (2002, January). *Teaching conceptually: The I-A-A model*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, Charlotte, NC.
- Davis, G., Simpson, P., & Johnson, B. (2002, January). *Getting to the fourth year: The instruments and protocols used to study the practice of beginning K-12 science teachers*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, Charlotte, NC.

- Johnson, B., Carson, J., Kilbane, J., Martin, D., & Wohlers, L. (2002, January). *Teachers' understanding of ecological concepts*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, Charlotte, NC.
- Johnson, B., & Hoff, J. (2001, January). *The learning environments of our graduates' classrooms: Perceptions of teachers and their students*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, Costa Mesa, CA.
- Johnson, B., & Stevens, J. (2000, April). *Elementary teachers' perceptions of school climate and student achievement*. Paper presented at the annual meeting of the American Educational Research Association, New Orleans, LA.
- Johnson, B. (2000, January). *Making elementary science methods real: In to the classroom and out to the world*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, Akron, OH.
- Johnson, B. (2000, January). *How are our graduates teaching? Looking at the learning environments in our graduates' classrooms*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, Akron, OH.
- Johnson, B., & Stevens, J. (1999, April). *Factor analysis of a school climate instrument: Exploratory and confirmatory factor analysis of the School Level Environment Questionnaire (SLEQ)*. Paper presented at the annual meeting of the American Educational Research Association, Montreal, Quebec, Canada.
- Johnson, B. (1999, January). *Bringing the outdoors in: Integrating earth education in teacher education*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, Austin, TX.
- Johnson, B. (1998, January). *Earth education: An alternative to the infusion model of environmental teaching*. Paper presented at the annual meeting of the Association for the Education of Teachers in Science, Minneapolis, MN.
- Johnson, B. (1997, April). *Girls' and boys' perceptions of science learning environments*. Paper presented at the annual meeting of the National Science Teachers Association, New Orleans, LA.
- Johnson, B. (1997, April). *Outdoor learning that fits the learners*. Paper presented at the annual meeting of the National Science Teachers Association, New Orleans, LA.
- Johnson, B. (1991, August). *Earth education: Learning to live lightly*. Paper presented at the Environmental Education in New Zealand Conference, Massey University, Palmerston North, New Zealand.
- Johnson, B. (1990, October). *Transfer and learning: How do our learners use what we have given them?* Presented at the Earth Education National Conference, Bewdley, Worcestershire, United Kingdom.
- Johnson, B. (1990, October). *Programme building*. Presented at the Earth Education National Conference, Bewdley, Worcestershire, United Kingdom.
- Johnson, B. (1989, October). *Earth education: Learning to live lightly*. Paper presented at the annual conference of the Association for Experiential Education, Santa Fe, NM.
- Johnson, B. (1989, March). *Running an outdoor school*. Paper presented at the annual meeting of the Independent Schools Association of the Southwest, New Orleans, LA.

Johnson, B. (1988, August). *Program implementation*. Paper presented at the Australian National Earth Education Conference, Canberra, ACT, Australia.

State

Manoli, C., & Johnson, B. (2003, September). *Assessing children's views of the environment: Modifying the NEP Scale*. Paper presented at the annual conference of the Arizona Association for Environmental Education, Tucson, AZ.

Johnson, B., Kropp, R., & Manoli, C. (2002, April). *Evaluation of environmental learning*. Paper presented at the annual conference of the Arizona Evaluation Network, Tucson, AZ.

Johnson, B. (1996, November). *Girls' and boys' perceptions of science learning environments*. Paper presented at the New Mexico Science Teachers Association State Science Convention, Albuquerque, NM.

Johnson, B. (1996, November). *Conceptual development in outdoor learning*. Paper presented at the New Mexico Science Teachers Association State Science Convention, Albuquerque, NM.

Seminars

International

Invited workshop facilitator: (2015, November). *Earth education: Learning to live more lightly*. Els Caus de Mura, Mura, Catalonia, Spain.

Invited workshop facilitator with Elsa Schaub: (2015, April). *Educacion ambiental y estimulacion del interes por las Ciencias Naturales*. Centro Regional de Formación Docente e Investigación Educativa, Hermosillo, Sonora, México.

Invited speech: (2014, December). *Magical Learning Adventures: Earth Education in Action*. Presented at Masaryk University, Department of Environmental Studies, Brno, Czech Republic.

Invited keynote speech with Jan Činčera: (2014, September). *Teaching ecological concepts: Constructing understandings and connecting to the real world*. Presented at the IXth IOSTE Symposium for Central and Eastern Europe: Science and Technology for the XXIst Century, Hradec Kralove, Czech Republic.

Invited workshop facilitator: (2014, September). *Earth education: Learning to live more lightly*. Centre for School and Outdoor Education, Rakov, Škocjan, Slovenia.

Invited workshop facilitator: (2014, September). *Earthkeepers Program Day*. Environmental Education Center Bohemian Paradise, Turnov, Czech Republic.

Invited keynote speech: (2014, August): *Educación para la Tierra: Aprendiendo a Vivir más Livianamente en nuestro Planeta*. Primer Encuentro Nacional de Educación Ambiental para el Desarrollo Sostenible, Santa Cruz, Bolivia.

Invited keynote speech: (2013, November). *Connecting people to nature to develop sustainable lives: Magical learning adventures*. Presented at the Science & Sustainability through Outdoor Learning Conference, Rateče, Slovenia.

Invited workshop facilitator: (2013, November). *Immersing children in the outdoors: Developing personal connections to nature through purposeful experiences*. Presented at the Science & Sustainability through Outdoor Learning Conference, Rateče, Slovenia.

Invited presentation: (2013, March). *Teacher preparation programs & issues, projects & people*. Pontificia Universidad Católica de Valparaíso, Valparaíso, Chile.

Invited workshop facilitator: (2013, March). *Earth education: Learning to live more lightly*. Pucón, Chile.

Invited workshop facilitator: (2012, September). *Earthkeepers leadership*. Refugio Jumarre, Angrogna, Italy.

Invited workshop facilitator: (2012, September). *Earth education*. Halmstad Nature School, Halmstad, Sweden.

Invited speech: (2012, January). *From traditional environmental education to earth education*. Presented at the Cyprus Ministry of Education Seminar on Environmental Education, Limassol, Cyprus.

Invited keynote speech: (2011, September). *Teaching and learning ecologically*. Presented at the National Conference of Biology Education, Bayreuth, Germany.

Invited speech: (2011, September). *Learning in the outdoors in America: Whys, whats and hows*. Technical University of Liberec, Czech Republic.

Invited leader training: (2011, September). *Earthkeepers*. Environmental Education Center Bohemian Paradise, Turnov, Czech Republic.

Invited workshop facilitator: (2011, July). *Earthkeepers leadership*. Wild Mountains, Rathdowney, Queensland, Australia.

Invited presentation: (2011, June). *Environmental learning*. Verano en México Program, Guanajuato, Mexico.

Invited presentation: (2011, June). *Program development*. Verano en México Program, Guanajuato, Mexico.

Invited presentation: (2011, June). *Science education and environmental learning at the University of Arizona*. Escuela Normal, Guanajuato, Mexico.

Invited speech: (2010, September). *Teaching and learning for ecological action*. University of Cyprus, Nicosia, Cyprus.

Invited leader training: (2010, September). *Earthkeepers*. Cyprus Center for Environmental Research and Education, Saint Nicolaos Akrotiri, Cyprus.

Invited speech: (2010, May). *Ecology in the school*. Bilbao, Spain.

Invited speech: (2010, May). *Ecology and education*. Faculty of Science and Technology, Universidad del Pais Vasco, Vitoria, Spain.

Invited workshop facilitator: (2010, March). *Earth education*. Saint Nicolaos Akrotiri, Cyprus.

Invited keynote speech: (2009, September). *Ecological understandings: Teaching, learning and action*. Presented at the annual conference of the Ecological Society of Germany, Switzerland and Austria, Congress, Bayreuth, Germany.

Invited speech: (2009, June). *Ecological understandings: Teaching, learning and action*. Faculty of Science and Technology, Universidad del Pais Vasco, Bilbao, Spain.

Invited speech: (2009, June). *Connecting the classroom to the real world: Engaging students in school learning outdoors*. Bilbao, Spain.

Invited leader training: (2009, June). *Earthkeepers*. Espinosa de los Monteros, Burgos, Spain

Invited workshop facilitator: (with J. Cree) (2009, April). *Earthkeepers leadership*. Helsinki, Finland.

Invited workshop facilitator: (2008, November). *Earth education*. Parque del Ojo Guareña, Burgos, Spain.

Invited workshop facilitator: (2007, July). *Earthkeepers leadership*. Lingxi Ecology Center, Beijing, China

Invited speech: (2007, July). *Earth education: From the heart, with the head, through the hands*. Beijing Normal University, Beijing, China.

Invited speech: (2007, June). *Earth education*. Friends of Nature, Beijing, China.

Invited workshop facilitator: (2007, June). *Earthkeepers leadership*. Mominoki Forest Park, Hiroshima, Japan.

Invited workshop facilitator: (2006, September). *Earthkeepers leadership*. Stadsboerderij Hoeve Bijdorp, Den Haag, Netherlands.

Invited guest lecture: (2006, October). *Teacher preparation program*, Hague University, Netherlands.

Invited guest lecture (2003, July). *Earth education*, videoconference with graduate students, Universität Lüneburg, Lüneburg, Germany.

Invited workshop facilitator: (with J. Cree) (2003, August). *Earthkeepers leadership*. EcoMare, Texel, Netherlands.

Invited panelist: (2003, January). *Cosmology, education, and sustainability* (e-Dialog). Royal Roads University, Vancouver, British Columbia, Canada.

Invited workshop facilitator: (with J. Cree) (2001, October). *Earthwalks*. Leusden, Netherlands.

Invited presenter: (2001, October). *Conceptual knowledge and earth education*. IEE Netherlands Members Gathering, Amsterdam, Netherlands.

Invited workshop facilitator: (with J. Cree) (2000, May). *SUNSHIP III Workshop*. International Haus Sonnenberg, St. Andreasberg, Germany.

Invited featured speaker: (1999, October). *Broom & tree talk*. Presented at the Earth Education Exposition and Conference, Waterloo, Ontario, Canada.

Invited workshop facilitator: (1995, July). *Earth education*. Perth, WA, Australia.

Invited staff training: (1991, July). *Earth education*. Australian National Parks & Wildlife Service, Kakadu NP, NT, Australia.

Invited workshop facilitator: (1991, March). *Earth education: Learning to live lightly*. Scott's Creek Field Centre, Morgan, SA, Australia.

Invited workshop facilitator: (1990, October). *Earthkeepers weekend*. The Peak National Park Study Centre, Castleton, Derbyshire, United Kingdom.

Invited workshop facilitator: (1990, October). *Earth education*. Frank Chapman Centre, Bewdley, Worcestershire, United Kingdom.

Invited workshop facilitator: (1989, October). *Muir trek*. Presented at the Earth Education Conference, Wyre Forest, Worcestershire, United Kingdom.

Invited workshop facilitator: (1989, October). *Earthkeepers weekend*. The Peak National Park Study Centre, Castleton, Derbyshire, United Kingdom.

Invited workshop facilitator: (1989, October). *Earth education*. Frank Chapman Centre, Bewdley, Worcestershire, United Kingdom.

Invited speaker: (1988, August). *Sunship III*. Presented at the Earth Education National Conference, Birrigai, Canberra, ACT, Australia.

Invited speaker: (1988, August). *Earthkeepers*. Presented at the Earth Education National Conference, Birrigai, Canberra, ACT, Australia.

Invited speaker: (1988, August). *Sunship earth*. Karatta Outdoor School, Kangaroo Island, SA, Australia.

Invited workshop facilitator: (1988, August). *Earthkeepers*. Arbury Park Outdoor Centre, Adelaide, SA, Australia.

Invited workshop facilitator: (1988, August). *Earth education*. Arbury Park Outdoor Centre, Adelaide, SA, Australia.

Invited speaker: (1988, August). *Outdoor programs*. Prince Alfred College, Adelaide, SA, Australia.

Invited workshop facilitator: (1988, August). *Earth education*. Lamington Natural History Association, Lamington NP, QLD, Australia.

Invited workshop facilitator: (1988, August). *Earth education*. Jell's Park, Melbourne, VIC, Australia.

Invited workshop facilitator: (1988, August). *Earth education*. Birrigai Outdoor School, Canberra, ACT, Australia.

Invited staff training: (1985, July). *Sunship earth*. Rocky Mountain YMCA, Seebe, Alberta, Canada.

National

Invited workshop: (2014, January). *Earthkeepers leadership*. Cooper Center for Environmental Learning, Tucson, AZ.

Invited workshop: (with M. Mayer) (2007, November). *Earthkeepers leadership*. Teaching Responsible Earth Education, Covington, LA.

Invited workshop: (with M. Mayer) (2007, October). *Earthkeepers program day*. Roy P. Drachman Agua Caliente Park, Tucson, AZ.

Invited workshop: (with M. Mayer) (2006, October). *Earth education*. Roy P. Drachman Agua Caliente Park, Tucson, AZ.

Invited workshop: (with M. Mayer) (2005, January). *Earthkeepers leadership*. Roy P. Drachman Agua Caliente Park, Tucson, AZ.

Invited participant: *Seminar on technology for informal learning environments*. (April 2004) Flandrau Science Center, Tucson, AZ.

Invited workshop facilitator: (2004, March). *Earthkeepers leadership*. McKeever Environmental Learning Center, Sandy Lake, PA.

Invited keynote speaker: (2003, September). *Earth education: From the head, through the heart, with the hands*. Presented at the annual conference of the Tennessee Environmental Education Association, Fall Creek Falls State Park, Pikeville, TN.

Invited workshop facilitator: (2002, August) *Earthkeepers leadership*. McKeever Environmental Learning Center, Sandy Lake, PA.

Refereed workshop: (with M. Mayer) (2000, November). *Earth education*. Presented at the Annual Conference of the National Association of Interpreters, Tucson, AZ.

Invited speaker: (1998, December). *Earth education research and lessons from academia*. Presented at the North American Conference of The Institute for Earth Education, Caumsett State Park, NY.

Invited seminar facilitator: (1998, December). *North American Earthkeepers production team meeting*. Queens College Center, Long Island, NY.

Invited staff training: (1996, September). *Implementing earth education*. San Diego County Schools, San Diego, CA.

Invited workshop facilitator: (1994, August). *Earth education*. Fenton Ranch Outdoor School, Jemez Springs, NM.

Invited workshop facilitator: (1992, October). *Earthkeepers weekend*. Fenton Ranch Outdoor School, Jemez Springs, NM.

Invited staff training: (1992, March). *Sunship earth*. McKeever Environmental Learning Center, Sandy Lake, PA.

Refereed workshop facilitator: (1992, February). *Earth Education Workshop*. Presented at the annual conference of the Center for Holistic Resource Management, Albuquerque, NM.

Invited staff training: (1990, August). *Lost Treasures*. Shaker Lakes Nature Center, Cleveland, OH.

Invited speaker: (1990, July). *Environmental learning twenty years after Earth Day*. National Park & Recreation Symposium, Dallas, TX.

Invited staff training: (1990, September). *Earth education*. Palomar Mountain Outdoor School, Mt. Palomar, CA.

Invited workshop facilitator: (1986, November). *Earth education*. Natural Science for Youth Foundation, Natural Science Centers Annual Conference, Cleveland, OH.

Invited workshop facilitator: (1986, November). *Earth Caretakers*. Greencastle Antrim School District, Greencastle, PA.

Invited workshop facilitator: (1986, June). *Earth education*. American Camping Association Training Weekend, Fairview Lake YMCA, Newton, NJ.

State

Johnson, B. (2015, July). *Education: Rural successes from around the state: Teachers in Industry*. Panel presentation at the Arizona Rural Policy Forum, Clarkdale, AZ.

Refereed workshop: (with M. Mayer) (2003, September). *Earth education*. Presented at the annual conference of the Arizona Association for Environmental Education, Tucson, AZ.

Refereed workshop: (with M. Mayer) (2001, September). *Earthkeepers*. Presented at the annual conference of the Arizona Association for Environmental Education, Flagstaff, AZ.

Refereed workshop: (with M. Mayer) (2001, September). *Earthwalk leadership*. Presented at the annual conference of the Arizona Association for Environmental Education, Flagstaff, AZ.

Refereed roundtable discussion: (2001, September). *Are we really all in this for the same reasons?* Presented at the annual conference of the Arizona Association for Environmental Education, Flagstaff, AZ.

Invited speaker: (1992, March). *Earth education*. Santa Fe Public Schools, Santa Fe, NM.

Invited workshop facilitator: (1990, August). *Earth education*. Albuquerque Public School Outdoor Center, Albuquerque, NM

Invited speaker: (1990, January). *Integrating environmental awareness into the outdoor setting*. Presented at the annual conference of the American Camping Association, Coronado Section, Albuquerque, NM.

Invited workshop facilitator: (1988, March). *Earth education*. Rio Grande Nature Center, Albuquerque, NM.

Invited staff training: (1987, December). *Earth education*. Rio Grande Nature Center, Albuquerque, NM

Invited workshop facilitator: (1987, October). *Earth education*. Mimbres Hot Spring Ranch, Mimbres, NM.

Invited workshop facilitator: (1987, August). *Earth education*. Fenton Ranch Outdoor School, Jemez Springs, NM.

Grants Awarded

Principal Investigator -- *Teachers in Industry – STEM Teacher Retention and Development Through Industry Partnerships*, Thomas R. Brown family Foundation; funded \$1.08 million over 4 years (2015-18). Freeport-McMoRan Copper & Gold Foundation (100Kin10); funded \$670,000 over three years (2013-15).

Principal Investigator -- *Beyond bridging: Co-education of preservice and inservice elementary teachers in science and mathematics*, National Science Foundation (Award No. DRL-1019860). \$2.21 million over five years. Funded September 2010.

Co-Principal Investigator – *CRPA: How do we learn the fate of tropical rainforests under climate change? A multimedia exhibition of photographic art portraying scientists and student at work in Amazonia*, National Science Foundation (Award No. 1209899). \$149,797 over two years. Funded July 2012.

Principal Investigator – *Teachers in Industry (formerly MASTER-IP)*, Science Foundation Arizona & business partners. \$1.78 million over three years. Funded April 2009.

Principal Investigator -- *Science content courses for elementary education inservice and preservice teachers*, Arizona Board of Regents' Improving Teacher Quality. \$105,000 over two years. Funded December 2007.

Co-Principal Investigator -- *Improving academic quality for teachers (IMPAQT)*, Arizona Board of Regents' Improving Teacher Quality. \$250,000 over two years. Funded in December 2007.

Principal Investigator -- *Development of science unit assessments aligned to school curriculum and the Arizona science standard*, Pima Education Research Collaborative. \$30,000. Funded March 2006.

Co-Principal Investigator -- *Improving pre-service and in-service teachers' pedagogical content knowledge in middle school science: A systems approach*, Arizona Board of Regents; \$180,000 over three years. Funded January 2004.

Co-Principal Investigator -- *Improving teacher quality: Strengthening the connections between university and school experiences in a pre-service secondary science teacher program*, Arizona Board of Regents; \$50,000 for 1 year. Funded December 2003.

Evaluator -- *Understanding light through the eyes of the Hubble Space Telescope*, National Aeronautics and Space Administration, \$20,000. Funded January 2006.

Evaluator -- *Science in the city*, National Science Foundation, Funded August 2005.

Evaluator -- *Revealing the invisible universe: From nanoscope to telescope*, Internships in Public Science Education (IPSE), National Science Foundation, \$455,000 over 3 years. Funded August 2002.

Principal Investigator -- *Teacher research network*, SciMathMN, Funded \$5,000 in 1998-1999 and \$7,000 in 1999-2000.

Service

External

Reviewer, funding proposals, Institute for Education Sciences (2015-2018)

Member, International Scientific Committee, 2012 Conference on Interpersonal Relationships in Education, Vancouver, Canada

Reviewer, funding proposals, National Science Foundation (2012, 2013, 2015)

External Reviewer, research proposal, Research Foundation Flanders (FWO), Belgium (2011)

Proposal reviewer for the American Educational Research Association (AERA) Annual Meeting

Learning Environments SIG: 2002-2006, 2008-2010, 2012

Science Teaching & Learning SIG 2002-2006, 2008, 2012

Ecological & Environmental Education SIG 2002-2006, 2008

Division C, Section 4 Science 2003-2005

Division K, Section 1 Teaching Practices, Knowledge & Education in Math & Science 2003-2004

Proposal reviewer for the National Association for Research in Science Teaching (NARST) Annual Meeting

Stand 14: Environmental Education: 2008-2012

Strand 6: Science Learning in Informal Contexts: 2007-2008

Strand 1: Learning: Students' Conceptions & Conceptual Change: 2003, 2005

Proposal reviewer for the American Evaluation Association (AEA) Annual Meeting

Environmental Program Evaluation TIG: 2001

Proposal reviewer for the Arizona Association for Environmental Education Annual Meeting: 2001

Strand Coordinator for Strand 9: Informal Learning for the NARST Annual Meeting (2007)

Assistant Strand Coordinator for Strand 9: Informal Learning for the NARST Annual Meeting (2006)

Treasurer, Study of Learning Environments SIG, AERA (2003-05)

Secretary/Treasurer for the Science Teaching and Learning SIG, AERA (2001-04)

Chair for "Studies of School-Level and Classroom Environments", AERA Annual Meeting (2013)

Discussant for "Learning Environments in Postsecondary Settings", AERA Annual Meeting (2012)

Presider for “Enhancing the Development of Ecological Literacy in K-16 Education”, NARST Annual Meeting (2012)
 Chair for “Investigating Contemporary Classroom Learning Environments”, AERA Annual Meeting (2010)
 Discussant for “Learning Investigated: Impact of Strategies on the Learning Environment”, AERA Annual Meeting (2009)
 Chair for “The Importance of School as a Supportive Community for Learning”, AERA Annual Meeting (2008)
 Chair for “Curriculum Implementation II”, NARST Annual Meeting (2008)
 Chair for “Environmental Education in Elementary School Settings”, NARST Annual Meeting (2008)
 Presider for “Informal Science Experiences: Impacts on Learning”, NARST Annual Meeting (2007)
 Chair for “Measuring and Modeling in Learning Environments Research”, AERA Annual Meeting (2006)
 Chair for “Environmental and Experiential Education in Informal Settings”, NARST Annual Meeting (2006)
 Chair for “Different Faces of Learning Environment Research”, AERA Annual Meeting (2005)
 Discussant for keynote speaker, Ecological and Environmental Education SIG, AERA Annual Meeting (2005)
 Discussant for “Technology-Rich Learning Environments”, AERA Annual Meeting (2004)
 Discussant for “Dimensions of Environmental Education Research: Theories, Policies and Practices”, AERA Annual Meeting (2003)
 Chair for “Examining the Contexts of Teaching and Learning”, AERA Annual Meeting (2002)
 Discussant for the Symposium "Redesigning Teacher Education Programs for Quality and Accountability", American Association of Colleges for Teacher Education (AACTE) Annual Meeting (2002)
 Promotion & Tenure Reviewer – various US and Canadian universities
 External Examiner, Doctoral thesis “Using Teacher Action Research to Promote Constructivist Learning Environments in Mathematics Classes in South Africa”, candidate Mokgoko Petrus Sebela, Curtin University of Technology, Perth, Western Australia. (2003)

National/international

Editorial Board, *Learning Environments Research* (current)
 Editorial Board, *Envigogika* (current)
 Regional Editor, *Eco-Thinking* (current)
 Editorial Board, Advances in *Learning Environments Research* book series, Sense Publishers (current)
 Manuscript reviewer for peer-reviewed journals: *Alberta Journal of Educational Research*, *Asia Pacific Education Review*, *Environment and Behavior*, *Environmental Education Research*, *Journal of Educational Psychology*, *Journal of Environmental Education*, *Journal of Science Teacher Education*, *Learning Environments Research*, *Studies in Educational Evaluation*, *Teachers College Record*.

Partner in 100Kin10 (as co-director of UA STEM Learning Center) (current)
International Program Coordinator of The Institute for Earth Education (IEE) (current)
Member of the Board of Directors of The Institute for Earth Education (IEE) (current)
Lost Treasures Program Development Team – IEE (current)

Curriculum Consulting/Evaluation

Environmental Education Center Bohemian Paradise, Czech Republic (2011-present)
Cooper Center for Environmental Learning, Tucson, Arizona (2008-present)
Teaching Responsible Earth Education (T.R.E.E.), New Orleans, Louisiana (2003 - 2011)
McKeever Environmental Learning Center, Sandy Lake, Pennsylvania (2003-07)
Parque del Ojo Guareña, Spain (2008)
Belfountain Public School, Ontario, Canada (2007)
Gibberagong Environmental Education Centre, New South Wales, Australia (2006)
The Crossing Land Education Centre, New South Wales, Australia (2004-05)
Warrimoo Primary School, New South Wales, Australia (2004-07)
International Haus Sonneberg, St. Andreasberg, Germany (1999-01)
Sterling Hall School in Toronto, Ontario, Canada (2000).
Hampton Primary School, New South Wales, Australia (2000)
Redhill Field Study Centre, New South Wales, Australia (2000)
Accompany Outdoors, Adelaide, Australia (2000)
Office of Outdoor Education, San Diego County Schools, California (1996)

Local/state

Secretary/Treasurer, Board of Directors, Beyond Foundation, 2-16-present
Member, Community Advisory Council, Pima County Library Youth Media & Innovation Center,
2014-15
Member, Arizona STEM Network Advisory Council, 2012-15
Member, Arizona Department of Education's Higher Education Advisory Group, 2012-15
Member, Paolo Freire Freedom School STEM Design Team, 2012-14
Member, Arizona Department of Education's No Child Left Behind (NCLB) Working Group, 2007 -
2011
Assisting Tucson Unified School District (TUSD) Regional Science Center, 2004-present.
Water Education panel member, Arizona Hydrological Society Annual Symposium at UA in October
2004.
Assisting Pima County Departments of Parks and Recreation and Environmental Quality, offering the
Earthkeepers program to Tucson area public elementary schools.
Workshop facilitator at Aqua Caliente Park, Tucson.

Organizer and leader, Tucson Basin Environmental Learning Colloquium, 2001- 2003.

Member, UA College of Science Teacher Preparation Program Partners in the Education of Science Teachers (PEPST), 2001 to 2004.

Initiator, new graduate internships in environmental learning with the Arizona Sonora Desert Museum and with Pima County Parks and Recreation.

Co-organizer and teacher, Earthkeepers earth education program for Tucson public school students.

Participant, Inquiry Institute sponsored by UA and TUSD, funded by NSF, Summer 2001.

Participant, Arizona Standards Setting Conference, Arizona Educator Proficiency Assessment program, 2001.

Participant, teacher professional development session focused on teaching science inquiry at Menlo Park Elementary School, Tucson, Fall 2000.

Assisted teachers at Van Buskirk Elementary School develop and submit a grant proposal to the Arizona Advisory Council on Environmental Education, Tucson, Fall 2000.

Peer Review Committee, Fulbright Teacher Exchange Program, 2000.

Departmental committees

Co-Chair, Math Education Search Committee, Department of Teaching and Teacher Education, 2006-07

Chair, Science Education Search Committee, Department of Teaching and Teacher Education, 2004-05

Chair, Graduate Committee, Department of Teaching and Teacher Education, 2003-05

Chair, Human Subjects Department Review Committee, 2001-04, 2006-07

Chair, Curriculum Committee, Department of Teaching and Teacher Education, 2000-01

College committees

Member, College of Education Dean Search Committee, 2016-17

Member, College of Science Teacher Preparation Program Director Search Committee, 2014-15

Member, College Leadership Council, 2007-present

Member, Charter School Feasibility Study Task Force, 2004-05

Member, College of Education Awards and Recognition Committee, 2004-06

Member, Initial Teacher Preparation Center Organization/Finance Task Force, 2003

Chair, College of Education Sabbatical Advisory Committee, 2002-03

Member, College of Education Sabbatical Advisory Committee, 2001-02

Member, Grade Appeal Committee, 2001

Member, Admissions Appeal Committee, 2001

University committees

Member, Research Advisory Council, Office for Research & Discovery, 2014-present

Member, Heads Up Steering Committee, 2010-2013

Member, NCA Accreditation Working Group, 2009-10
Member, Education & Outreach Committee, Biosphere2, 2009-present
Member, Committee on Honorary Degrees, 2008-10
Member, Professional Preparation Board, 2007-present
Executive Team, Professional Preparation Board, 2007-2013
Member, Flandrau Science Center Assistant Director for Education search committee, 2007
Member, K-12 Advisory Committee, Flandrau Science Center, 2001-05
Member, University Research Policy Committee, 2001-03
Graduate College Representative for Comprehensive Examinations, May 2002-03
Environmental Studies (Interdisciplinary) Program Advisory Committee, 1998-00 (Gustavus Adolphus College)

Other

Evaluator, public programs, Biosphere 2, University of Arizona, 2010
UA Representative, Learning Sciences Conference, Northern Arizona University, 2003
UA Representative, statewide Teacher Preparation Curriculum Workgroup, 2002-03
Evaluator, University of Arizona College of Science Partners in the Education of Preservice Science Teachers (PEPST), 2001-02
Presenter, SECME Summer Institute, 2001
Member, UA Executive Committee, Arizona Teacher Education Coalition (AzTEC), 2000-01
Co-advisor, Student Education Association, 1998-00 (Gustavus Adolphus College)

Professional Memberships

American Educational Research Association
European Science Education Research Association
National Association for Research in Science Teaching
Arizona Science Teachers Association