

ALICE A. (JILL) BLACK

EDUCATION

Ph. D. in Curriculum and Instruction, Science Education: 2003; University of Missouri; research emphasis: spatial abilities/ Earth science conceptual understanding
M. S. in Resource Planning, Missouri State University; 1997; research emphasis: GIS, karst, water quality, macroinvertebrate indices, urban and regional planning
B. S. in Secondary Ed., SE Missouri State University; Major: Biology, Minor: Chemistry

EXPERIENCE

Associate Professor, Department of Geography, Geology and Planning, Missouri State University, Aug. 2012- present; assistant professor August 2007 – August 2012; lecturer 1998-2007; courses taught: GRY240 Earth Science for Teachers inquiry-oriented integrated lecture/lab; GRY301 Geography of the Ozarks, GRY315 Service Learning in Geography; SCI404 Teaching of Middle School Natural Science (developed new course); EEM576 Methods of Teaching Science in Elementary Schools; SFR691 Educational Workshop; Secondary Science Methods; SCI414 Teaching of Middle and Secondary School Natural Science; GRY397 Caves and Karst for Teachers, GRY397 Using Your Senses to Teach Earth Science, GRY397 Disaster Movies: Is the Earth Science Real?, GRY397 Katrina and the Hurricanes of 2004-2005, GRY100 World Regional Geography; IDS110 Student Success

Nine years experience as public high school and middle school science teacher
GIS Cartography, City of Springfield Planning Department, April 1997-December 1997
Research Assistant in water quality research, zooplankton hatching research, and GIS
Monsanto Corporation World Headquarters, St. Louis; literature chemist

GRANTS

Principal Investigator, Missouri Department of Higher Education (MDHE) Cycle 13 three year Improving Teacher Quality Grant proposal: Science and Technology for Elementary Educators: A Literacy, Engineering and Environmental Approach; funded for three years, March 2015; funded \$199,775.48 in 2015, 2016 amount not yet known.

Principal Investigator, Missouri Department of Higher Education (MDHE) Cycle 11 two year Improving Teacher Quality Grant: Early Elementary Environmental Education – A Field-Based Approach; funded 2013 – 2015; \$247,000.00.

Principal Investigator, Missouri Department of Higher Education (MDHE) Cycle 10 Improving Teacher Quality Grant: Early Elementary Environmental Education – A Field-Based Approach; funded 2012-2013; \$165,660.00.

Senior Personnel, NHF grant: Science Experts Teaching Students; 2012 – 2014; funded \$289,688.

Principal Investigator, Faculty Citizenship and Service Learning Grant: Physical and Historical Geography Project: Valley Water Mill and Lost Hills; 2012; Awarded \$7,600.

Senior Personnel, National Science Foundation (NHF) grant proposal submitted January 2012 and 2013: John Thomas School of Discovery STEM Project

Co-Investigator, NSF grant proposal submitted September 26, 2011: STEM Talent Expansion Program to Up Underrepresented Undergraduate Professionals in Math and Science (STEP U³P).

Principal Investigator, MDHE Cycle 9 Grant Proposal, 2010: Early Elementary Environmental Education – Linking Science and Literacy Through Data Analysis and Assessment for Learning (4Es) (partnering with the Southwest Center for Educational Excellence, Mary Ann Gremling, Co-PI)

Co-Principal Investigator, MDHE Cycle 9 Grant Proposal, 2010: Connecting Essential Standards to Reading and Environmental Literacy Project (Kestrel).

Key Project Personnel, MDHE 3 year Cycle 4 Grant, 2006-2008. Science and Math Achievement from Rural Educators; funded \$225,130.

Faculty Research Grant, MSU, 2008-2009 (funded \$6,600) Determination of enrollment Status and curricular characteristics of secondary Earth science education in Missouri and the United States.

Principal Investigator: National Oceanic and Atmospheric Administration (NOAA) Formal Education Grant Proposal, 2007: Earth Systems Connections: A Field-Oriented Approach for Educators; Reviewed well and notified that project would be funded if additional funds became available.

Co-Principal Investigator, NSF CCLI Grant Proposal, 2009, 2006, 2004; Project STAT, Science Teaching and Technology.

MSU 2007 Ozarks Studies Minigrant (funded \$1740)

MSU 2005 Teaching Fellowship grant for research in teaching and learning (funded \$1200)

MSU 2006 Citizenship and Service Learning Faculty Fellowship grant (funded \$2500)

MSU 1999 Funding for Results Grant, funded.

HONORS

MSU University Foundation Award for Service, 2015

MSU College of Natural and Applied Sciences Teaching Award, 2015

MSU Maroon Minute Award 2014

Distinguished Service in Science Teaching Award; Science Teachers of Missouri professional organization, 2013

College Service Award, College of Natural and Applied Sciences, Missouri State University, 2013

Earth Hero Award, Dickerson Park Zoo, 2008; awarded for service in promoting environmental education for future teachers;

MSU Service Learning Faculty Award 2008

Discovery Center of Springfield Award 2008

College Teaching Award, College of Natural and Applied Sciences, MSU, 2006

Phi Kappa Phi National Academic Honor Society

Nominated for the Presidential Award for Excellence in Science Teaching 1992, 1994

Honored Teacher, Missouri Scholars Academy, University of Missouri 1994

Parent(s) of the Year, Missouri Science and Technology University (UMR) 1990

SERVICE

Director, 13th Annual State Conference, Missouri Environmental Education Association, (MEEA), October, 2009

President, MEEA and MEEA Board of Directors, 2008; President Elect, 2007, Past President 2009

Reviewer, Earth Science and Unified Earth Science Assessments for the Missouri Educator Gateway Assessment (MEGA) Program, for the Missouri Department of Elementary and Secondary Education, 2013.

Local Implementation Team, American Meteorological Society/National Weather Service NOAA Project DataStreme for K-12 educators, 2005-present:

Springfield Environmental Collaborative 2000-present; chairman of two working groups

Facilitator: Project Wet, Project Learning Tree, Project Wild, 1999-present;

Leopold Project Teacher, 2008-present

Organizing Committee, presenter and poster/program artist: Expanding Your Horizons Science Workshops for Middle School Girls, 1999, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2015

Meteorology Unit Coordinator, Science Olympiad, 2010, 2011, 2012, 2013, 2014, 2015, 2016

Mapping Unit Coordinator, Science Olympiad, 2000, 2005, 2007, 2008, wrote program used in 2006 and 2009

Component Citizenship and Service Learning instructor for GRY240 classes since 2000; Integrated Citizenship and Service Learning for GRY301: 2007, 2012

Judge, Missouri Junior Academy of Science, 2001, 2005, 2006

Judge, Ozarks Science & Eng. Fair, 2001, 2002, 2007, 2008, 2009, 2010, 2012, 2013

Director, Midwest Conference Science Fair, 1988, 1993

Steering Committee, Ozarks Science and Engineering Fair, 1987-1994

Board of Directors, Missouri Science and Technology University Parents Association

Event Organizer, "A Sense of Place: Ozarks Geography and More," 2007

MSU Ozarks Studies Institute Advisory Committee, 2007 - present

University level search committee for new Ozarks Studies endowed professorship 2007-8

Presenter: Geography Week 2010: Ozarks Trekker: Hitting the Road with GRY301

Presenter, 27th Showcase on Teaching and Learning, 2012

Editor, *Master Plan for the Frisco Highland Trail*, 1996, Missouri State University Project GLOBE science education teacher

Proposal Reviewer, National Association for Research in Science Teaching, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015 conferences

Text Reviewer: McDonnell, et al., *The Good Earth: Introduction to Earth Science*, 2006, 2008, 2010; Bradshaw, *World Regional Geography, 2nd Edition*, 2000; Thompson and Turk, *Earth Science and the Environment*, 2008

Journal Manuscript Reviewer, "Water Resources Management in Island Environments: The Challenge of Tourism Development, special issue of *Island Tourism*, 2001

Organizing Committee for Academy for Educational Studies Annual Conference, MSU, 2006, 2007, 2008

National Association of Geoscience Teachers Central Sect. 1st & 2nd Chairs, 2011-2015
College of Natural and Applied Sciences Science Education Committee, 2002 – present
CNAS Education Committee (all departments), 1999-2003, 2008-2011
MSU Professional Ed. Committee, 2007-present; MSU Prof. Ed. Unit, 1998 –present
Goals 2000 Science Education Grant committee, 1999-2002
Responsible for Secondary Earth Science Education portion of successful NCATE review
2003, 2011
Reinventing Professional Education Committee, Science Education, 2001-2002
Sustainability Minor University-Wide Committee, 2011-Present
MSU Sustainability Fair Presentations, 2010. 2011
Conceptual Frameworks Subcommittee, Prof. Ed. Committee, 2011 – present
GGP Graduate Program Curriculum and Assessment Committee, 2010-Present
GGP Departmental Merit Evaluation Committee 2013
GGP *ad hoc* Committee to Revise Departmental Merit Plan 2013
Search Committees, 2007, GGP GIS position; 2008, GGP geography position
Women in Science, MSU, 1999 – present
Natl. Association for Research in Science Teaching, numerous other professional
organizations

SELECTED PUBLICATIONS

- Black, A.A. (2014) Why No Earth Science in the Biology, Chemistry, Physics Course Progression? What Do Students and Teachers Think? *Journal for Geoscience Education*. Submitted for publication.
- Black, A. A. *Earth Science for Teachers Laboratory Manual: An Inquiry, Spatial & GIS Approach*. Under contract with Kendall-Hunt Publishing.
- Black, A.A. 2009. Review of Cartographic Service Learning Project: Online Mapping of Pennsylvania State Parks, in *Journal of Geography in Higher Education*.
- Black, A. A. (2008). Preservice Elementary /Middle Teachers and Earth Science: Is There a Relationship Between Spatial Abilities or Misconceptions and Overall Content Understanding? *Proceedings of the Association for Science Teacher Education's International Meeting*. January: St. Louis, MO.
- Black, A. S. (2008). Does Completion of University Science Courses Affect the Spatial Ability of Preservice Elementary/Middle Teachers? *Proceedings of the National Association for Research in Science Teaching Annual International Meeting*. April: Baltimore, MD.
- Black, A.A. (2007). Science phobia: Could no help with spatial skills be a factor? In S.P. Jones, C.J. Pearman, & E.C. Sheffield (Eds.), *Why Kids Hate School* (pp. 221-233). Dubuque, IA: Kendall Hunt.
- Black, A. A. (2007). Earth Science Conceptual Understanding: Relationship of Individual Item Responses to Spatial Ability scores. *Proceedings of the annual International meeting of the Association for Science Teacher Education*. Clearwater, FL
- Black, A.A. (2006). Disaster Movies: Is the Earth Science Real? Exploring the Nature of Science in a University Intercession Course. *Proceedings of the annual*

- international meeting of the National Association for Research in Science Teaching*, San Francisco, CA.
- Black, A.A. (2005). Spatial Ability and Earth Science Conceptual Understanding. *Journal of Geoscience Education*, 53, 4, 402-414.
- Havel, J., Eisenbacher, M., & Black, A.A. Diversity of crustacean zooplankton in riparian wetlands: colonization and egg banks, *Aquatic Ecology*, 34, 63-76, 2000.

SELECTED PRESENTATIONS:

- Black, A.A. (2016, Invited Paper). The Relationship of Spatial Ability, Earth Science Conceptual Understanding, Content Exam Success, and Completion of University Science Content Courses. National Association for Research in Science Teaching International Meeting, Baltimore.
- Black, A.A. (2016, accepted). Inquiry Teaching in Science: Recommended for Decades, But Is It Happening? Critical Questions in Education National Conference, San Antonio.
- Black, A.A. (2015). It's Elementary – Engineering, the Environment, and Literacy. National Science Teachers of America Regional Meeting, Kansas City, MO.
- Black, A.A. (2015). Why No Earth Science in the U.S. Common Science Course Progression? Geological Society of America national meeting: Baltimore.
- Black, A.A. (2015). Shake It! An NGSS, Engineering, and NOS Look at Earthquakes. National Science Teachers Association National meeting: Chicago.
- Black, A.A. (2015). Perceptions Related to the Exclusion of Geosciences in the Common U.S. Biology-Physics-Chemistry Progression: The National Association for Research in Science Teaching International Meeting: Chicago.
- Black, A.A. (2015). STEM, the Environment, the Field, and Engineering for K-4. Missouri Department of Elementary and Secondary Education Interface Conference. Osage Beach, MO.
- Black, A.A. (2014). The Geosciences: Core Subjects in Other Nations, But Not in the U.S. Academy for Educational Studies Annual Conference: Louisville, KY.
- Black, A.A. (2014) In the Field: Bringing STEM and Environmental Education to K-4 Teachers in the Rural Ozarks. Association for Science Teacher Education National Meeting: San Antonio.
- Black, A.A. (2014). Beyond the Solar System: The (Even More) Exciting Part of Astronomy. National Science Teachers Association National Meeting: Boston
- Black, A.A. (2014). Follow Your (Our) Star. National Science Teachers Association National Meeting: Boston.
- Black, A.A. (2014). Geography of the Ozarks: A Service Learning and Travel-Based Regional Course. Association of American Geographers Annual Meeting. Tampa, FL.
- Black, A.A. (2014). Why the Biology, Chemistry, Physics Progression, and Not Earth Sciences? Ideas of Teachers, Future Teachers, and University Geoscience Students. Geological Society of America, South-Central Section. Fayetteville, AR.
- Black, A.A. (2014). STEM and Engineering for K-4! Missouri Department of And Secondary Education Interface Conference. Osage Beach, MO.

- Black, A. A. (2013). Earth Science Models: Scale and Functional. National Science Teachers Association National Meeting: San Antonio.
- Black, A. A. (2013). Planets: More Than Memorizing Factoids. National Science Teachers Association National Meeting: San Antonio.
- Black, A.A. (2013). STEM and NGSS: What Do Engineers Think? National STEM Symposium, St. Louis, MO
- Black, A. A. (2013). The Environment and Engineering Concepts for K-4: A Professional Development Program for Teachers. National STEM Symposium, St. Louis, MO.
- Black, A. A. (2012). Of Course, Earth is Round and Gravity Pulls Us Down: Preservice Teachers' Understanding of Earth Shape and Gravity. Association for Science Teacher Education Annual International Conference: Clearwater, FL
- Black, A.A. (2012). Resources, Energy, & Oil: From Peaks to Spills. National Science Teachers of America National Conference: Indianapolis, IN.
- Black, A.A. (2012). Cosmologies of preservice teachers: A six-year study, with comparisons to cosmologies of children. National Association for Research in Science Teaching International Conference: Indianapolis, IN.
- Black, A.A. (2011). Preservice science teachers and technology: What (if anything) has changed? Critical Questions in Education Conference, Kansas City, MO.
- Black, A.A. (2010). What causes the seasons? Motion and math. National Science Teachers Association National Meeting. Philadelphia, PA.
- Black, A.A. (2010). Why science? Activities to get them thinking on the first day. National Science Teachers Association National Meeting. Philadelphia, PA.
- Black, A.A., Harmon, L., Brys, E. (2009). Caves, Karst, and the Environment. Missouri Department of Elementary and Secondary Education Science and Math Interface Conference, Lake Ozark, MO.
- Black, A. A. (2008). Does completion of a university Earth science course affect the spatial ability of preservice elementary/middle teachers? A preliminary study. Geological Society of America National Meeting. Houston, TX.
- Black, A.A. (2008). Preservice teachers: To a very important end. Testing environmental perceptions and misconceptions of future teachers. North American Association for Environmental Education National Conference Research Symposium. Wichita, KS.
- Black, A.A. (2008). Missouri caves, karst, state standards, and environmental education. Missouri Environmental Education Association State Conference. St. Louis, MO.
- Black, A.A. (2006). Conceptual understanding, spatial ability, and content test success. Geological Society of America National Meeting. Philadelphia, PA.
- Black, A.A. (2006). Disaster Movies: Is the Earth science real? Exploring the nature of science in a university intercession course. National Association for Research in Science Teaching International Conference. San Francisco, CA.
- Black, A.A. (2005). Is spatial ability related to specific Earth science concepts and misconceptions? A study of university non-science majors. National Association for Research in Science Teaching International Conference. Dallas, TX.