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EDUCATION

Doctor of Philosophy, Secondary Science Education	Auburn University; Auburn, AL (August, 2002) Dissertation: E*valuation of a State-wide Science Inservice and Outreach Program*
Masters of Education	Georgia Southern University; Statesboro, GA (1997) Major Area: Secondary Science Education
Bachelor of Science *magna cum laude*	Auburn University; Auburn, AL (1992) Major Area: Secondary Science Education

EMPLOYMENT HISTORY

Assistant Professor, Science Education (2007-Present).
College of Education and Human Services, Utah State University, Logan, Utah.
Responsibilities include teaching science education courses in the School of Teacher Education and Leadership (TEAL), assist in the development of undergraduate and graduate science education programs, mentor graduate students, and pursue a research and service agenda in science education.

Adjunct Science Instructor, (2005-2006).
College of Education, University of Kentucky, Lexington, Kentucky.
Responsibilities included teaching elementary science methods courses.

Assistant Research Professor, (2003-2004).
College of Education, University of Kentucky, Lexington, Kentucky.
Responsibilities included researching effective math and science teaching strategies and then to compiling them into a searchable database within the Commonwealth Center for Instructional Technology and Learning (CCITL).

Postdoctoral Fellow, (2002-2003).
College of Education, Auburn University, Auburn, Alabama.
Responsibilities included working as an administrative assistant to the Dean of the College of Education in the editing of the book *Global Perspectives on Mentoring: Transforming Contexts, Communities and Cultures*.

Graduate Teaching Assistant, (2002).
College of Education, Auburn University, Auburn, Alabama.
Responsibilities included teaching undergraduate science education courses in the department of Curriculum and Teaching.

Graduate Teaching Assistant, (1997-1998, 2000-2001).
College of Science and Mathematics, Auburn University, Auburn, Alabama.
Responsibilities included teaching undergraduate biology courses in the department of General Biology.

Placement Officer, (1999-2002).
College of Education, Auburn University, Auburn, Alabama.
Responsibilities included making student teaching placements for undergraduates in teacher programs and the development of a database system for organizing and communication of these placements with students and local school system officials.

Secondary Science Teacher (8 years)

Bob Jones High School, Madison City Schools, Madison, Alabama. (2006-2007).
Responsibilities included teaching physical science and earth/space science grades 10-12.

Lee-Scott Academy, Private, Auburn, Alabama. (1998-1999, 2003-2004).
Responsibilities included teaching middle school life and physical science and (7^{th} and 8^{th} grade), and high school chemistry (grades 10-12).

Calvary Baptist Day School, Private, Savannah, Georgia. (1994-1997).
Responsibilities included teaching middle school life and earth science (7^{th} and 8^{th} grade).

McCants Middle School, Anderson County District 5, Anderson, South Carolina. (1992-1994).
Responsibilities included teaching middle school life and earth science (7^{th} and 8^{th} grade).

AWARDS AND PROFESSIONAL RECOGNITION

Teacher of the Year Award recipient (2010). Awarded by the School of Teacher Education and Leadership.

PROFESSIONAL AFFILIATIONS

Association of Science Teacher Education (ASTE)
National Association of Research in Science Teaching (NARST)
International Consortium for Research in Science and Mathematics Education (ICRSME)
National Science Teachers Association (NSTA)
Utah Science Teachers Association (USTA)

RESEARCH

Research Interests:

Teaching for Conceptual Understanding

- Teaching strategies (inquiry, conceptual change, writing in science, etc.)
- Teacher professional development (using above strategies).
- K-12 Science Outreach to promote inquiry-based learning
- Alternative conceptions in science

PUBLICATIONS

Journal Articles (Refereed)

Lott, K.H., Wallin, M., Roghaar, D., & Price, T. (in press). Catch me if you can! Introducing STEM using Gingerbread Man traps. *Science and Children*. (Expected press date: October, 2013).

Lott, K.H. & Wallin, L. (2012). Modeling the states of matter in a first-grade classroom. *Science Activities: Classroom Projects and Curriculum Ideas, 49* (4), 108-116.

Lott, K.H. & Jensen, A. (2012). Changes matter! Addressing misconceptions students have about physical and chemical changes. *Science and Children*, 50(2), 54-61.

Lott, K.H. & Read, S. (2012). "Is a mealworm really a worm?" Introducing science notebooks to novice writers. *Science and Children, 49*(5), 32-37.

Lott, K.H. (2011). FIRE UP the Inquiry. Lose the routine, tweak your "cookbook lab," and reach a level of open inquiry with these strategies used during a unit on heat. *Science and Children*, *48*(7), 29-33.

Campbell, T. & **Lott, K.H.** (2010). Triad dynamics: Investigating the importance of social forces, positions, and storylines. *Teaching Education, 21*(4), 349-356.

Krall, R.M., **Lott, K.H.**, & Wymer, C.L. (2009). Inservice elementary and middle school teachers' conceptions of photosynthesis and respiration. *Journal of Science Teacher Education,* 20(1), 41-55.

Lott, K.H. (2003). Evaluation of a statewide science inservice and outreach program: Teacher and student outcomes. *Journal of Science Education and Technology*, *12*(1), 65-80.

Book Chapters

Lott, K.H. (2013). Reestablishing the role of the university professor in the laboratory school: Lessons learned from being back in the classroom. In M. Dias, C. Eick & L. Brantley-Dias (Eds.), *Science teacher educators as K-12 teachers: Practicing what we teach* (pp.TBA). New York, NY: Springer.

Lott, K.H. (2013). FIRE UP the Inquiry. Lose the routine, tweak your "cookbook lab," and reach a level of open inquiry with these strategies used during a unit on heat. In Froschauer, L. (Ed.), *A Year of Inquiry: A Collection for Elementary Educators* (pp. 142-148). Arlington, VA: NSTA Press.

Manuscripts Awaiting Decisions

Roghaar, D. & **Lott, K.H**. Placed-based education: Teaching characteristics of living and non-living in a Kindergarten classroom. (Submitted to *Science and Children*, September 2013).

Manuscripts in Progress (Data Collected, Analysis Completed, and Various Stages of Manuscript Development)

Lott, K.H. Assessing the learning progression of early childhood scientific inquiry. (To be submitted to Science Education, Fall 2013).

Lott, K.H. & Roghaar, D. Teaching science through inquiry: A case-study of a Kindergarten teacher. (To be submitted to Journal of Science Teacher Education, Fall 2013)

Lott, K.H. Testing the learning progression of scientific modeling: Can first graders use scientific modeling to explain the states of matter? (To be submitted to *Science Education*, Spring 2014).

Lott, K.H. Assessing the learning progression of early childhood beliefs about the nature of science. (To be submitted to Science Education, Spring 2014).

Other Publications

Skinner, M., with **Lott, K.H.**, & Longhurst, M. (2010). *A Crack in the Night*. Storyline Express: Logan, UT.

GRANTS FUNDED

2012-2013 Research Catalyst Grant, Utah State University

Amount: $19, 126.39
Project Title: Advancing Literacy and Math through Scientific Inquiry
Project Role: Principal Investigator

2008-2009 New Faculty Grant, Utah State University

Amount: $14,243.00

Project Title: The Effects of a One-Week Conceptual-based Professional Development Institute on Inservice Middle School Teachers Conceptions of Properties of Matter, Heat and Temperature
Project Role: Principal Investigator

GRANTS SUBMITTED
(Not-Funded)

April, 2011 Research Catalyst Grant, Utah State University

Amount: $18, 615.11
Project Title: Advancing Literacy and Math through Scientific Inquiry
Project Role: Principal Investigator

April, 2009 National Institutes of Health (NIH), Broad Challenge Area (12): Science, Technology, Engineering and Mathematics Education (STEM) and specific Challenge Topic (12-HD-102): Optimal Environments and Techniques for Science Learning

Amount: $1 million
Project Title: Optimal Learning Environments: A Research Study in Field Science Education
Project Role: Co-Investigator with Drs. Gretchen Peacock and Terry Sharik
Principal Investigator: Dr. Jim Dorward, Utah State University
Funding Period: 2010-2012

August, 2009 NASA Global Climate Change Education (GCCE) No. NNH08ZNE005N

Amount: $343,000
Project Title: Teaching Climate Change in Utah's Classrooms
Project Role: Co-Investigator with Dr. Robert Gillies
Principal Investigator: Dr. Robert Davies
Funding Period: 2010-2013

PRESENTATIONS

International Presentations—Scholarship

Lott, K.H. (2006, March). *Inservice Middle School Teachers' Conceptions Related to the Properties and Changes of Properties of Matter*. Paper presented at the Annual Conference of the International Consortium for Research in Science and Mathematics Education (ICRSME), Nassau, Bahamas.

National Presentations—Scholarship

Lott, K.H. (2013, January). Assessing the learning progression of early childhood scientific inquiry. Poster presented at the annual international conference of the Association for Science Teacher Education (ASTE). Charleston, SC.
http://theaste.org/publications/proceedings/2013proceedings.pl

Lott, K.H. (2012, January). The effects on elementary teachers' views of scientific inquiry and beliefs about teaching science. Paper presented at the annual international conference of the Association for Science Teacher Education (ASTE). Clearwater, FL.
http://theaste.org/publications/proceedings/2012proceedings.pl

Lott, K.H. (2012, January). Testing the learning progression of scientific modeling: Can first graders use scientific modeling to explain the states of matter? Poster presented the annual international conference of the Association for Science Teacher Education (ASTE). Clearwater, FL.
http://theaste.org/publications/proceedings/2012proceedings.pl

Hauck, N. & **Lott, K.H.** (2012, January). Effects of sustained teacher professional development on the classroom science instruction of elementary school teachers. Poster presented at the annual international conference of the Association for Science Teacher Education (ASTE). Clearwater, FL.
http://theaste.org/publications/proceedings/2012proceedings.pl

Lott, K.H. & Longhurst, M. (2011, January). *Elementary CORE Academy: Possible impacts on elementary teachers and students*. Poster presented at the Annual International Conference of the Association for Science Teacher Education (ASTE). Minneapolis, MN.
http://theaste.org/meetings/2011conference/2011proceedings.pl

Lott, K.H. (2011, January). *Learning to Teach by Learning to Learn: A Model for Teaching an Elementary Science Methods Course*. Poster presented at the Annual International Conference of the Association for Science Teacher Education (ASTE). Minneapolis, MN.
http://theaste.org/meetings/2011conference/2011proceedings.pl

Lott, K.H. & Campbell, T. (2009, January). *Exploring the link between socioeconomic status and differing science laboratory experiences of high school students.* Paper presented at the Annual International Conference of the Association for Science Teacher Education (ASTE), Hartford, CT.
http://theaste.org/cgi-bin/2009conference/2009proceedings.pl

Lott, K. H. (2008, January). *Science Excel: An Effective Teacher Recruitment Program for Rural Schools?* Paper presented at the Annual International Conference of the Association for Science Teacher Education (ASTE), St. Louis, MO.
http://theaste.org/publications/proceedings/2008proceedings/2008_ASTE_Proceedings.pdf

Campbell, T. & **Lott, K.H.** (2008, January). *Triad experiences: The impact of joint professional development for pre- and in- service science teachers on triad dynamics.* Paper presented at the Annual International Conference of the Association for Science Teacher Education (ASTE), St. Louis, MO.
http://theaste.org/publications/proceedings/2008proceedings/2008_ASTE_Proceedings.pdf

McNall, R.L., Straley, J.P., Shafer, S.A., **Lott, K.H.**, & Osborn, J.L. (2007, January). *Virtual Inquiry-based Physics for Teachers: Temperature and Heat.* Paper presented at the Annual International Conference of the Association of Science Teacher Education (ASTE), Clearwater, FL. http://theaste.org/publications/proceedings/2007proceedings/index.htm

McNall, R.L. & **Lott, K.H.** (2006, April) . *Inservice Elementary and Middle School Teachers' Conceptions of Selected Life Science Concepts.* Paper presented at the Annual International Conference of the National Association of Research in Science Teaching (NARST), San Francisco, CA.

Lott, K.H. (2006, January). *Inservice Elementary Teachers' Conceptions of Materials, States of Matter and the Properties of Objects.* Paper presented at the Annual International Conference of the Association for Science Teacher Education (ASTE), Portland, OR. http://theaste.org/publications/proceedings/2006proceedings/index.htm

McNall, R.L., Brown, S, & **Lott, K.H.** (2005, April). *Teaching Science with Technology for Grades K-8.* Paper presented at the annual meeting of the National Science Teachers Association (NSTA), Dallas, TX.

Lott, K.H. (2002, April). *Evaluation of a Statewide Science Inservice and Outreach Program.* Paper presented at the Annual International Conference of the National Association of Research in Science Teaching (NARST), New Orleans, LA.

Kamen, M. & **Lott, K.H.** (2002, January). *Integrated Elementary Education Internship at Auburn University.* Paper presented at the Annual International Conference of the Association for the Education of Teachers in Science (AETS), Charlotte, NC. (ED 465602)

Regional Presentations—Scholarship

Lott, K.H. (2001, October). *Evaluation of a Statewide Inservice and Outreach Program--Preliminary Findings.* Paper presented at the annual meeting of the Southeastern Association of Educators of Teachers in Science (SAETS), University of South Florida.

Lott, K.H. (October, 2000). *Alabama's Science in Motion Mobile Laboratory for High Schools.* Paper presented at the
Annual meeting of the Southeastern Association of Educators of Teachers in Science (SAETS), Auburn University.

Melvin, E.A., Roy, V., & **Lott, K.H.** (2000, March). *Exploring the Horizons of Pre-Service Internships*. Paper presented at the annual meeting of the Mid-South Educational Research Association (MERA), Point Clear, AL.

Baird, W.E., Eick, C., & **Lott, K.H.** (1999, October). *The Secondary Science Internship: What Can We Learn From Each Other?* Paper Presented at the annual meeting of the Southeastern Association of Educators of Teachers in Science (SAETS), University of Georgia.

State and University Presentations

Campbell, T., **Lott, K.H.** (2009). *Students Engaged in University Classrooms.* Presented as part of the Provost Lecture Series, Utah State University, March, 2009.

Campbell, T., **Lott, K.H.** (2008). *Engaging Students in University Classrooms.* Presented as part of the Provost Lecture Series, Utah State University, November, 2008.

Invited Presentations

Lott, K.H. & Jensen, A. (2013). *Changes Matter!* Presented during the Elementary Extravaganza at the annual conference of the National Science Teachers Association (NSTA). San Antonio, TX.

Proposals Submitted Awaiting Decision

Lott, K.H. Developing an Assessment of Early Childhood Scientific Inquiry. Paper presentation proposal submitted for the Annual International Conference of the Association of Science Teacher Education (ASTE), January, 2014 San Antonio, TX.

UNIVERSITY TEACHING

Utah State University, Logan, Utah (2007-present)
College of Education and Human Services

SCED 3400 Teaching Science I
A methods course designed as an introduction to effective science teaching strategies and the theoretical basis for these strategies. Secondary teaching students with a major or minor emphasis in science take this course.

SCED 4400 Teaching Science II
A methods course designed to further prepare future science teachers. This course emphasizes how effective teaching strategies can be organized into teachable units, as well as issues of secondary science including: diversity, technology, laboratory safety. Secondary teachings students with a major emphasis in science take this course.

SCED 5500 Student Teaching Seminar
A 10-week course taken by students teachers in science. This course focuses on the day-to-day classroom issues, as well as practice in reflective teaching practice.

SCED 6900 Independent Study
This is a course designed for graduate students working on special problems in science education.

ELED 4000 Teaching Science

This is a methods of teaching science course designed for elementary teaching majors. This course focuses on the nature of science, best science teaching practices, the theoretical basis for these practices and the learning of science through inquiry approaches.

TEAL 6700 Improving Science Instruction
This is an online course designed for classroom teachers and curriculum specialists to explore the major topics of reformed science teaching. Modules include: Constructivism, Nature of Science, Science Technology and Society (STS), and Action Research in the Classroom.

TEAL 7900 Independent Study
This is a course designed for graduate students working on special problems in science education.

Courses by Semesters

Course Number	Title	Semesters
SCED 3400	Teaching Science: I	Fall 2007
SCED 4400	Teaching Science: II	Spring 2008, Fall 2008, Spring 2009
SCED 5500	Student Teaching Seminar	Fall 2008, Spring 2009
SCED 6900	Independent Study	Fall 2008, Spring 2009
ELED 4000	Teaching Science	Fall 2009, Spring 2010, Fall 2010, Spring 2011, Fall 2011, Spring 2012, Fall 2012
TEAL 6700	Improving Science Instruction	Spring 2010, Fall 2010, Spring 2011, Spring 2012
TEAL 7900	Independent Study	Fall 2010

University of Kentucky, 2005-2006
College of Education

EDC 328 Teaching Science in the Elementary School
This is a method of teaching science course designed for elementary teaching majors. This course focuses on the nature of science, best science teaching practices, the theoretical basis for these practices and the learning of science through inquiry approaches.

Auburn University, 2002
College of Education

CTSE 4090 C&T I: Science
This is a methods course designed as an introduction to effective science teaching strategies and the theoretical basis for these strategies. This course was co-taught with Dr. Bill Baird.

CTEE 4030 Elementary Curriculum: Science
This is a methods of teaching science course designed for elementary teaching majors. This course focuses on the nature of science, best science teaching practices, the theoretical basis for these practices and the learning of science through inquiry approaches. This course was co-taught with Dr. Michael Kamen.

Auburn University, 1997-1998, 2000-2001
College of Science and Mathematics

BIOL 1010 Survey of Life
This is an introductory biology course designed for non-science majors.

BIOL 1030 Organismal Biology
This is the second biology course for non-science majors that focuses on human biology, as well as environmental biology concepts.

WORKSHOPS

Lott, K.H. (2012, Oct-Nov). The new frameworks for K-12 science education: International implications. A series of workshops given for international science teachers as part of the Teaching Excellence and Achievement (TEA) program (funded by the Department of Education).

Lott, K.H. (2012, July). Advancing literacy and math through scientific inquiry. Presented as part of a Research Catalyst Grant, Utah State University.

Lott, K.H. & Campbell, T. (2010, January). *Using Internet Technologies for Collecting and Analyzing Focus Group Data.* Presented at the annual meeting of the Association for the Education of Teachers in Science, Sacramento, CA., January 14, 2010.

Campbell, T., **Lott, K.H.** (2009). *Students Engaged in University Classrooms.* Presented as part of the Provost Lecture Series, Utah State University, March, 2009.

Campbell, T., **Lott, K.H.** (2008). *Engaging Students in University Classrooms.* Presented as part of the Provost Lecture Series, Utah State University, November, 2008.

Lott, K.H. (2008). *Middle School Physical Science: Properties and Changes in Properties of Materials, Heat and Temperature.* Presented as part of a New Faculty Grant, Utah State University, July, 2008.

Lott, K.H. (2005). *Science and Technology.* Presented as part of the Girls in Research project, University of Kentucky, June, 2005.

SERVICE

National/International

Committee Member (2013-2015)	*Association for Science Teacher Education (ASTE) Professional Development Committee*
Reviewer (2006-present)	*Electronic Journal of Science Education*

State

Partcipant	*State Science Education Coordinator Committee (SSECC)*

(2007-present) *Utah*

Steering Committee/Consultant (2009-present) *State Office of Education*
Revising the K-2 Science Core Content
Utah

University

College of Education Representative (Fall 2013- DATE) *Faculty Senate*
Utah State University

Department Representative (Spring 2011) *College of Education*
Edith Bowen Laboratory School Principal Search Committee
Utah State University

Department Representative (2009-2010) *College of Education*
STEM Educator Search Committee
Utah State University

Department Representative (2008-2009) *College of Education*
Secondary Social Studies Search Committee
Utah State University

College of Education Representative (2007-2008) *College of Sciences*
Biology Educator Search Committee
Utah State University

Chair of the Education Sub-committee (2007-2008) *Focus the Nation Committee*
Utah State University

Activity Coordinator (2005-2006) *Science Excel Program*
Appalachian Math Science Partnership
University of Kentucky

Local

Science Resource (2009-present) *Edith Bowen Laboratory School*
Logan City School District

Governing Board Member (2012-2014) *Edith Bowen Laboratory School*
Logan City School District