

SANDRA A. LAMPLEY, Ph.D.

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EDUCATION

Ph.D., Mathematics and Science Education, 2015

Middle Tennessee State University, Murfreesboro, TN

Dissertation Title: Exploring Pedagogical Content Knowledge of Graduate Teaching Assistants through Their Participation in Lesson Study

Advisors: Dr. Angela Barlow and Dr. Grant Gardner

M.S., Educational Administration and Supervision, 2008

Middle Tennessee State University, Murfreesboro, TN

B.S., Biology/Community and Public Health (Double Major), 2000

Middle Tennessee State University, Murfreesboro, TN

PROFESSIONAL EXPERIENCE

University of Alabama in Huntsville, Huntsville, AL

Fall 2015-present

Assistant Professor

Foundations of Multicultural Education, ED 307

Classroom Management and Behavior, ED 309

Teaching Natural/Health Science, ED 373/673

Teaching Secondary Science Methods, ED 423/523

Elementary School Internship, ED 493

High School Internship, ED 497/698

Project Based Learning, ED 580

Using Technology to Reach Special Populations, ED 620

Differentiating Instruction in Science and Mathematics, ED 650

Master's Action Research Project, ED 690

Middle Tennessee State University, Murfreesboro, TN

2011-2015

Graduate Teaching/Research Assistant

Instructor of Record:

Exploring Life, Biology lecture for non-majors, BIOL 1030

Exploring Life, Biology lab for non-majors, BIOL 1031

Teaching Assistant:

Project Based Instruction for Mathematics and Science, YOED 4050

Life Science for Elementary Teachers, BIOL 3000

Exploring Life, Biology lecture for non-majors, BIOL 1030

Lead teaching assistant for Exploring Life, biology lab for non- majors, BIOL 1031

Research Assistant:

NASA Space Grant Research

Spring 2012 –Summer 2013

K-12 Teaching Experience (11 years total)

Rutherford County Schools, Murfreesboro, TN

2007-2011

7th grade science teacher

Bedford County Schools, Shelbyville, TN

2007-2008

8th grade science teacher

San Juan Unified School District, Carmichael, CA

2004-2007

7th grade science teacher

Williamson County Schools, Franklin, TN

2001-2004

7th grade science teacher

Rutherford County Schools, Murfreesboro, TN

2000-2001

9-12 grade Biology, Ecology, and Math Foundations teacher

STUDENT MENTORING

Brittan Aldrich, UAH, Undergraduate honors thesis advisor, Spring, 2020

Zachary Grimes, Middle Tennessee State University, Math and Science Education, Dissertation committee member, expected graduation date, 2021

Nicole Mertz, UAH, Molecular Biosciences, Dissertation committee member, expected graduate date, 2022

Michele Morris, UAH, Molecular Biosciences, Dissertation committee member, expected graduation date, 2022

RESEARCH

PUBLICATIONS

In preparation

Lampley, S.A., Roller, S.A., Benfield, M.P.J., Davis, A.M., Dillihunt, M.L., Gholston, S.E., & Turner, M.W. (in preparation). Understanding the perceptions of engineering in early elementary students. *School Science and Mathematics Journal*.

Lampley, S.A. (in preparation). A strategy for improving collaboration in your courses. *Journal of College Science Teaching*.

Lampley, S.A. (in preparation). Teacher candidates' perceptions of lesson study as a component of a science methods course. *Journal of Science Teacher Education*.

Lampley, S.A. (in preparation). Explore before Explain: Examples in Practice. *Science and Children*.

In Press or Published

Hamilton, F., Hile, K. A., Skelley, D. L., Roller, S. A., **Lampley, S.A.**, & Slate Young, E. (in press). Exploring students' perceived impact on collaboration and critical thinking skills following an escape room experience. *The Journal of Campus Activities Practice and Scholarship*.

Roller, S. A., **Lampley, S.A.**, Dillihunt, M. L., Benfield, M. P. J., Gholston, S. E., & Turner, M. W. (2020). Development and initial validation of the student interest and choice in STEM (SIC-STEM) survey instrument for assessment of the social cognitive career theory constructs. *Journal of Science Education and Technology*, 29(5), 646-657.

Smith, D.W., **Lampley, S.A.**, Dolan, B., Williams, G., Schleppebach, D., Blair, M. (2020) Impact of 3D manipulatives on learning chemistry constructs: A pilot study. *Journal of Visual Impairments & Blindness*, 114(5), 370-381.

- Roller, S.A., **Lampley, S.A.**, Dillihunt, M., Benfield, M.P., & Turner, M. (2018). *Student attitudes toward STEM: A revised instrument of social cognitive career theory constructs*. Conference proceeding paper presented at the American Society for Engineering Education National conference in Salt Lake City, UT.
- Dula, M.E., **Lampley, S.A.**, Lampley, J.H. (2018). Undergraduate retention rates for students in learning support math classes versus traditional math classes controlling for ACT mathematics scores. *Journal of Learning in Higher Education*, 14, 1-6.
- Lampley, S.A.**, Gardner, G. & Barlow, A.T. (2017). Exploring pedagogical content knowledge of biology graduate teaching assistants through their participation in lesson study. *The Journal of Higher Education*. 23(4), 468-487. doi: 10.1080/13562517.1414786.
- Lowdermilk, M., Lampley, J. H., Tweed, S., & **Lampley, S.A.** (2017). Learning styles of physical therapy and physical therapy assistant students in accredited physical therapy programs. *Journal of Learning in Higher Education*, 13(2), 59-65.
- O'Brien, J., Roller, S.A., & **Lampley, S.A.** (2017). ScootPad conundrum: The perils of using third party software and student privacy. *The Journal of Cases in Educational Leadership*, 20(4), 17-26.
- Rutledge, M., & **Lampley, S.A.** (2017). Impact of a non-major biology course on student attitudes towards general education. *The Journal of College Science Teaching*, 46(6), 20-26.
- Rutledge, M., Bonner, J., & **Lampley, S.A.** (2015). The impact of active learning exercises on the grade distribution in a large-lecture, general education biology course. *Journal of College Science Teaching*, 44(5), 16-23.

PRESENTATIONS

International

- Gholston, S.E., Davis, A.M., Benfield, M., Turner, M.W., Dillihunt, M.L., Roller, S.A., and **Lampley, S.** (2020). *Assessment of student interest and choice in Engineering using Data Visualization*. Presented at the Industry, Engineering and Management Systems Conference, Clearwater Beach, FL.
- Lampley, S.** (2020). *Utilizing lesson study as an instructional strategy in an elementary science methods course: Syllabus share*. Session presented at the International Conference for the Association of Science Teacher Educators, San Antonio, TX.

Lampley, S. (2019). *Lesson study as an instructional strategy in a science methods course: Participants' perspectives.* Session presented at the International Conference for the Association of Science Teacher Educators, Savannah, GA.

Lampley, S. (2018) *Exploring lesson study as a component in an elementary science methods course.* Session presented at the International Conference for the Association of Science Teacher Educators, Baltimore, MD.

National

Hamilton, F. & **Lampley, S.** (2020). *Needing "Energy" to integrate Science and Language Arts instruction? We're chewing on food chains and webs!* National Science Teacher Association, Boston, MA. (conference cancelled)

Lampley, S. (2018). *From wolf to woof: Engaging students in a 3-day active learning unit on natural selection.* Session presented at the National Science Teachers Association Annual Conference, Atlanta, GA.

Lampley, S. (2018). *Exploring the use of lesson study to develop preservice teachers' pedagogical content knowledge in science teaching.* Sponsored session for the Society for College Science Teachers, presented at the National Science Teacher Association Annual Conference, Atlanta, GA.

Hamilton, F. & **Lampley, S.** (2017). *STEMulating students' natural curiosities through literature.* Session presented at the National Science Teachers Association STEM Forum, Orlando, FL.

Lampley, S. & Hamilton, F. (2017). *Science practices using math, literature, and Yes, even diapers!* Session presented at the National Science Teachers Association Annual Conference, Los Angeles, CA.

Lampley, S. & Gardner, G. (2016). *Engaging graduate teaching assistants in lesson study to improve instruction in an introductory biology laboratory course.* Session presented at the National Association for Biology Teachers Conference, Denver, CO

Lampley, S. & Gardner, G. (2016). *Exploring pedagogical content knowledge of graduate teaching assistants through their participation in lesson study.* Sponsored session for the Society of College Science teachers, presented at the National Science Teaching Association Annual Conference, Nashville, TN.

Rutledge, M., & **Lampley, S.** (2014). *Impact of a non-major biology course on student attitudes towards general education*. Session presented at the School Science and Mathematics Association, Annual Conference, Jacksonville, FL.

Lampley, S., & Kent, C. (2013). *How to transition your life science classroom into a next generation classroom by using NASA educational resources*. Session presented at the National Association of Biology Teachers, Atlanta, GA.

Kent, C., & **Lampley, S.** (2012). *Can NASA education teaching materials transition into the Next Generation Science Standards?* Session presented at the School Science and Mathematics Association, Annual Conference, Birmingham, AL.

Lampley, S., & Kent, C. (2012). *Teaching inquiry, engineering design, and embedded mathematics in Biology using NASA resources*. Workshop presented at the School Science and Mathematics Association, Annual Conference, Birmingham, AL

Regional

Lampley, S. (2019). *Unmasking the potential to collaborate: A strategy to improve collaboration in your coursework*. Session presented at the Mid-South Educational Research Association, New Orleans, LA.

Channing, J., **Lampley, S.** & Lampley, J. (2019). *Online doctoral students' perceptions of learning management system tools, connectedness, and suggestions*. Session presented at the Mid-South Educational Research Association, New Orleans, LA.

Lampley, S. & Lampley, J. (2019). *One room schoolhouse: Common themes*. Session presented at the annual Eastern Educational Research Association conference, Myrtle Beach, SC.

Lampley, S. (2017). *How does lesson study promote pedagogical content knowledge of pre-service teachers in a science methods course?* Session presented at the Mid-South Educational Research Association Annual Conference, Starkville, MS.

Lampley, S., Barlow, A.T., & Gardner, G. (2015). *The role of the facilitator in advancing biology graduate teaching assistants' pedagogical content knowledge during lesson study*. Session presented at the Mid-South Educational Research Association Annual Conference, Lafayette, LA.

State

Lampley, S. & Hamilton, F. (2017). *The scientists' twist: Exploring science practices through questioning*. Session presented at the Alabama Science Teacher Association Annual Meeting, Birmingham, AL.

Lampley, S. (2016). *Revising old lessons to do new tricks: Modifying lessons for the new Alabama Course of Study Standards*. Session presented at the Alabama Science Teachers Association Annual Meeting, Birmingham, Alabama.

Lampley, S. (2015). *Exploring pedagogical content knowledge of graduate teaching assistants through their participation in lesson study: Preliminary findings*. Session presented at the Tennessee STEM Education Research Annual Conference, Murfreesboro, TN.

Smith-Walters, C., & **Lampley, S.** (2014). *STEM outside: Plot studies, Mathematics and Science*. Session presented at the Tennessee Environmental Education Association Annual Conference, Tremont, TN.

GRANTS

Banish, M., Dillihunt, M., **Lampley, S.** (2019) *Advancing incoming chemical engineering student sufficiency-AIChESS*. National Science Foundation's S-STEM, Co-Investigator. (\$999,999--not funded).

Lampley, S. (2017) *Exploring prospective teachers' pedagogical content knowledge through their participation in lesson study*. University of Alabama in Huntsville's New Faculty Research Program. (\$9911—not funded).

Benfield, M.P., **Lampley, S.** Roller, S. Dillihunt, M. Gholston, S. (2016-2020). *An investigation of the engineering pipeline challenges facing K-12 students in Alabama's black belt region*. National Science Foundation, Engineering Education and Centers, Co-Principal Investigator. (\$1,239,883—funded).

SERVICE AT THE UNIVERSITY OF ALABAMA IN HUNTSVILLE

Service to the Department/College/University

Enhanced Teaching and Learning (ETL)/Student Success Center (SSC) Advisory Committee, College of Education representative, UAH	2019-present
Library Committee member, College of Education representative, UAH	2018-present
Affirmative Action Committee member, College of Education representative, UAH	2018-present
Charger Foundations Assessment Committee, College of Education representative, UAH	2018-1019
Director of Teachers, Charger Engineering Camp for rising 7 th and 8 th graders	2018-present
Curriculum Coordinator, Tech Trek camp for rising 8 th grade girls, UAH	2017-present
Chair of search committee for Assistant Professor of Reading and Literacy Education, College of Education, UAH	2018-2019
Integrated Product Team (IPT) review board panel for senior design, UAH	2017-2019
Chair of search committee for Lecturer, College of Education, UAH	2016-2017
Assistant Director, Tech Trek camp for rising 8 th grade girls, UAH	2016
Poster session judge for Inspires, SPARCC Laboratories, UAH	2016-2018
Finance and Resource Committee, College of Education representative, UAH	2015-2017

Service to the Community

Director of science fair, Challenger Elementary School	2018-2020
College of Education representative, Local STEM discussion group, Missile Defense Agency	2018-present
Volunteer teacher, Early childhood science lessons, Challenger Elementary School	2018-present
Volunteer teacher, Pre-school STEM lessons, RISE school at the Early Learning Center, UAH	2016-2019
Science fair judge, Challenger Elementary School	2016-2020

Service to the Profession

Peer Reviewer/Presider, Association for Science Teacher Educator Conference (ASTE)	2018-present
Board Member at Large, Mid-South Educational Research Association (MSERA)	2018-present
Co-Chair, Evaluation Committee, MSERA	2018-present
Peer Reviewer/Presider, MSERA Conference	2018-present
Peer Reviewer, NSTA's <i>Science Scope</i>	2018-present
Ad hoc peer reviewer, <i>The Teacher Educator</i>	2015

PROFESSIONAL SERVICE AT MIDDLE TENNESSEE STATE UNIVERSITY

Presenter at the Girls Outdoor (GO!) Workshop, Cumberland Mountain State Park	2014
Intern for Mulligan Sports, Middle Tennessee State University	2013
Guest speaker for Special Topics (MSE 7840), <i>Combining Pedagogy and Content Knowledge for Preservice Teachers in the Science Classroom</i> , Middle Tennessee State University	2012
Presenter at First Step Summer Bridge Program, Middle Tennessee State University	2012, 2013
Poster judge for the Tennessee Undergraduate Minority STEM Research Conference, hosted by Middle Tennessee State University	2012
Science Olympiad event coordinator, Disease Detectives and Leaf and Tree Finder, hosted by Middle Tennessee State University	2012
Science fair judge, West Side School	2012
Reviewer of GK-12 fellows research presentations, Middle Tennessee State University	2011

OTHER SCHOLARLY EXPERIENCE

Consultant for Improving Undergraduate STEM Education (NSF IUSE) grant, Middle Tennessee State University	2014
Teacher representative for county-wide district health committee, San Juan Unified School District	2005-2006
District in-service instructor, <i>Increasing Science Literacy through Three-Dimensional Graphic Organizers</i> , San Juan Unified School District	2005
District curriculum developer, San Juan Unified School District	2004
Science Olympiad coach, San Juan Unified School District	2004-2005
Student intern, Maury County Health Department	1999

HONORS AND AWARDS

College of Education Outstanding Faculty Member Award, University of Alabama in Huntsville	2018
Inaugural Inspirational Alumni Award, Middle Tennessee State University	2017
Accomplished Teaching Learning and Schools (ATLAS) Case Study analysis grant	2016-2019
Provost's Dissertation Writing Fellowship, Middle Tennessee State University	2014-2015
MSE Dissertation mini-grant, Middle Tennessee State University	2014
NASA Space grant research assistantship, Middle Tennessee State University	2012-2013

PROFESSIONAL AFFILIATIONS

Society for College Science Teachers
Association for Science Teacher Education
National Science Teacher Association
National Association of Biology Teachers
Mid-South Educational Research Association
Alabama Science Teaching Association
American Association of University Women