

FRANCES HAMILTON

UAH Roberts Hall 301 | 256-824-2973 | frances.hamilton@uah.edu

EDUCATION

Ed.D Assessment, Learning, and School Improvement Middle Tennessee State University, Murfreesboro, TN	2016
Ed. S. Curriculum and Instruction Middle Tennessee State University, Murfreesboro, TN	2013
M.A. Administration and Supervision Tennessee State University, Nashville, TN	2008
B.S. Education Athens State University, Athens, AL Areas of Concentration: Elementary Education and Early Childhood Education	1998

CERTIFICATIONS-STATE OF TENNESSEE

402 Elementary K-8 DOE 8/31/2022

497 PreK-4 DOE 8/31/2022

Highly Qualified in Middle School Science

ILL Administrator DOE 8/31/2023

RESEARCH INTERESTS

- Integration of Science with English Language Arts in primary grades
- Science literacy across grade levels
- Natural curiosities of young students in science
- Mentoring teachers through cognitive coaching
- Preservice teachers' stages of lesson plan development

PUBLICATIONS AND PAPERS WITH PRESENTATIONS

PUBLICATIONS

Hamilton, F. A. (in progress). From the Voices of Kindergarten Teachers: Engaging Students' Natural Curiosities in Science.

Hamilton, F. A. (under review) From the Voices of Kindergarten Teachers: Factors That Impact Decisions about When and How to Teach Science. *Science Education*.

Hamilton, F. A., Hile, K. (under review). From the Voices of Educators: Using Outdoor Spaces for Informal and Formal Excursions in Early Childhood. *Young Children*.

Hamilton, F.A., Hile, K., Skelley, D., Roller, S., & Lampley, S. (accepted). Exploring Students' Perceptions of Collaboration and Critical Thinking Skills Following an Escape Room Experience. *The Journal of Campus Activities Practice & Scholarship*.

Hamilton, F.A. (2019). Factors That Impact Kindergarten Teachers' Decisions about Engaging Students' Natural Curiosities in Science Presented at Mid-South Educational Research Association Conference in New Orleans, LA. Paper proceedings.

Hamilton, F.A. (accepted) Creating Integrated Science and Language Arts Centers, *The Reading Paradigm*.

Hamilton, F. A. (2007). The Evolution of a Teacher's Teaching of Evolution, https://gsa.confex.com/gsa/2007SE/finalprogram/abstract_119288.htm (Accession No. 119288) Paper in Proceedings of The Geological Society of America 56th annual meeting Southeastern Section, Savannah, GA

Crews, L., Gibson, M. & **Hamilton, F. A.** (2007). Infusion of Integrated Earth and Planetary Science Activities Into Middle School Curricula: A Selection of the Best Practices from the IMEGS Program, https://gsa.confex.com/gsa/2007SE/finalprogram/abstract_119140.htm (Accession no. 119140) Presentation from The Geological Society of America 56th annual meeting of Southeastern Section, Savannah, GA

PRESENTATIONS

Hamilton, F.A. (2020). From the Voices of Kindergarten Teachers: Factors That Impact Decisions about Teaching Science. Presented at *Mid-South Educational Research Association Conference* in virtual setting.

Hamilton, F. A. (2020). Needing "energy" to integrate science and language arts instruction? We're chewing on food chains and webs! Presented at the *Tennessee Science Teachers Association Conference* in virtual setting.

Hamilton, F. & Lampley, S. (2020). Needing "energy" to integrate science and language arts instruction? We're chewing on food chains and webs! Accepted for presentation at the *National Science Teachers Association Conference* in Boston, MA. Cancelled due to Covid-19.

Hamilton, F.A. (2019). Engaging the natural curiosities of children in the primary grades with science: What does the research say, and what are some effective strategies for teachers. Presented at the *National Association for the Education of Young Children Conference* in Nashville, TN.

Hamilton, F.A. (2019). Factors that impact kindergarten teachers' decisions about engaging students' natural curiosities in science. Presented at *Mid-South Educational Research Association Conference* in New Orleans, LA.

Hamilton, F.A. (2018). LEAP into language arts and science integration. Presented at *Alabama Literacy Association Conference* in Birmingham, AL.

Hamilton, F.A. (2018). LEAP into science and language arts instruction integration. Presented at *Alabama Science Teachers Association Conference* in Tuscaloosa, AL.

Hamilton, F.A. (2018). Improve science and language arts instruction through integration: We “shell” do just that! Presented at *MidSouth Reading and Writing Conference* in Birmingham, AL.

Hamilton, F.A. (2018). Improving science and language arts instruction through notebooking? We “shell” do just that! Presentation at National Science Teachers Association Conference, Atlanta, GA.

Hamilton, F.A. (2017). Integrating science with language arts: We “shell” do just that! Presented at *Alabama Reading Association Conference* in Birmingham, AL.

Hamilton, F. & Lampley, S. (2017). STEM-ulating students' natural curiosities through literature. Presented at the *National Science Teachers Association's STEM Forum* in Orlando, FL.

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

Lampley, S. & **Hamilton, F.** (2017). The scientist's twist: Exploring science practices through questioning. Presented at the *Alabama Science Teachers Association Conference* in Birmingham, AL.

Hamilton, F.A. (2016). *Engaging the Natural Curiosities of Children in the Early Years*. Presentation at National Science Teachers Association Conference, Nashville, TN.

Hamilton, F.A., Livingston, K., & Thompson, C. (2012). *Sea Shells*. Presentation at Tennessee Science Teachers Association Conference, Murfreesboro, TN.

Hamilton, F.A. & Anderson, T. (2012). *Bumping Up Beach Box: Secrets of a Sea Star and Parts of a Wave Foldables*. Presentation at Tennessee Science Teachers Association Conference, Murfreesboro, TN.

Hamilton, F.A., Thompson, C. (2011). *Beach Box*. Presentation at Tennessee Science Teachers Association Conference, Murfreesboro, TN.

Hamilton, F.A. (2010). *Foldables*. Presentation at Tennessee Educators of Aquatic and Marine Science Spring Conference, Gatlinburg, TN.

Hamilton, F.A. (2010). *Interactive (and I do mean interactive) Notebooks*. Presentation at Lincoln County In-Service, Fayetteville, TN.

Hamilton, F.A. & Royle, P. (2009). *Teaching Evolution*. Invited speaker. Presentation at the 2008 (118th) annual meeting of the Tennessee Academy of Science, Nashville, TN.

Byrne, B., Crews, L., & **Hamilton, F.A.**, et. al. (2008). *Tennessee Earth Science Teachers Lost in Space? We'll Help You Find Your Way*. Presentation at Tennessee Science Teachers Association Conference, Nashville, TN.

Hamilton, F.A. (2008). *Ocean Currents*. Presentation at Tennessee Science Teachers Association Conference, Nashville, TN.

Hamilton, F.A., & Thompson, C. (2008). *Mini-Beach Box: Ocean Science for Grades K-8*. Presentation at Tennessee Science Teachers Association Conference, Nashville, TN.

Hamilton, F.A. (2008). *Caves!* Presentation at Tennessee Educators of Aquatic and Marine Science Spring Conference. Chattanooga, TN.

Cox, B., Franks, R., & **Hamilton, F.A.** (2007). *IMEGS: Expanding Knowledge, Exercising Skills, Enhancing Confidence* Poster presentation at National Marine Educators Association Conference, Portland, Maine.

Hamilton, F.A. & Livingston, K. (2007). A Watered Down Topographic Map Grades 6-8. Presentation at Tennessee Educators of Aquatic and Marine Science Conference, Brandon Springs, TN.

Hamilton, F.A. (2007). Teaching Water Science Using Tubs. Presentation at Tennessee Educators of Aquatic and Marine Science Spring Conference, Brandon Springs, TN.

Forrester, T., **Hamilton, F.A.**, & Thompson, C. (2007). Beach Box: Ocean Science for Grades K-8. Presentation at Tennessee Science Teachers Association Conference, Nashville, TN.

Hamilton, F.A. (2006). Aquatic Science in a Tub Grades 6-8. Presentation at Tennessee Educators of Aquatic and Marine Science Conference, Gatlinburg, TN.

Hamilton, F.A. & McClain, L. (2006). Tennessee under the Sea 4-8. Presentation at Tennessee Science Teachers Association Conference, Nashville, TN.

RESEARCH

Hamilton, F.A. (in progress). Exploring Teacher Candidates' Knowledge About, and Confidence Levels in, Creating Lesson Plans During Internship. Data collected Fall 2019. **July 2019-present**

Hamilton, F.A. (in progress). Exploring Pre-Service Teachers' Knowledge and Confidence Levels As They Learn to Write Lesson Plans. Data collected Fall 2019. **July 2019-present**

Factors That Impact Kindergarten Teachers' Decisions about Teaching Science **August 2016-2019**
University of Alabama in Huntsville

PI: Frances Hamilton

- Qualitative study investigating *when* Kindergarten teachers teach science and *how* they are incorporating science (i.e. integration of ELA, use of AMSTI kits, etc.) after recognizing the lack of science teaching that occurred the previous year
- Investigating spontaneous interactions that may constitute unplanned science instruction
- Participants are teachers from Alabama and Tennessee, in four school systems, with an interesting case where one teacher has moved from a traditional setting to a special STEM school
- Another interesting case in which one teacher, after 26 years of teaching, participated in AMSTI training over the summer

Factors That Impact Kindergarten Teachers' Decisions of When to Engage the Natural Curiosities of Their Students in Science **2014 - 2016**

Middle Tennessee State University, Murfreesboro, TN

Dissertation Directed by: Dr. Rick Vanosdall

- Qualitative study examining *when* and *how* Kindergarten teachers teach science, including use of AMSTI kits and integration of other subjects

- Participants were teachers from Alabama and Tennessee, in four school systems, who collected data about their science instruction daily for two months.
- Participatory action research using a collective inquiry approach
- Narrative inquiry that involves professional life history interviews
- Grounded theory exploring individual cases
- Ethnographical study using cross-case analysis to understand culture of science community
- Used purposeful sampling and Qualtrics survey software for data collection

EDUCATIONAL EXPERIENCE

Assistant Professor of Elementary Education

University of Alabama in Huntsville

- EDC 311/511: Instructional Strategies
- ED 607: Education Leader as Evaluator
- ED 665: Differentiating Elementary Literacy (Reading and Writing) Instruction
- ED 371/671: Teaching Elementary Language Arts

Coordinator of Field and Clinical Experiences

2014-2017

University of Alabama in Huntsville

- Securing placements for students for field experiences and internships
- Supervising the internship portion of the teacher prep program
- Educating and Coordinating edTPA process with interns and supervising teachers
- Evaluating program and placements with survey data collection

Lecturer

2014-2016

Department of Curriculum and Instruction, University of Alabama in Huntsville

- ED 371: Teaching Language Arts in the Elementary Classroom (Spring 2015, Spring 2016)
- ED 493: Elementary Internship (Spring 2016, Fall 2016)
- ED 309: Classroom Behavior and Management (Fall 2015)
- ED 532: Space Orientation for Teachers (Summer 2015, 2016, Fall 2015, 2016)
- SPA 532: Space Orientation for Educators (Summer 2015, Fall 2015, 2016)

Assistant Principal-Curriculum

2012-2014

Ralph Askins Elementary School, Fayetteville, TN

- Mentored teachers and modeled literacy lessons
- Provided professional development on Common Core English Language Arts/Literacy and Math, science standards (science for system)
- Reading Response to Intervention Team Leader
- Led curriculum mapping for ELA, including phonics instruction and reading strategies, math, science, and social studies
- Collaborated with both reading specialists to identify areas of student needs, specific instructional strategies, and analysis of assessment data collected
- Collaborated with the district-wide reading consultant, specifically making her aware of school areas to strengthen in reading instruction and formulating an action plan
- Reviewed lesson plans in grades Pre-K-4
- Conducted teacher evaluations
- Testing Coordinator for benchmark testing and data analysis (school and system)

- An annex was added to the school (2013) in which I was the administrator maintaining the building, including monitoring instruction and discipline issues

Science Consultant**2013-2018**

Tennessee State Department of Education

- Trained kindergarten teachers on the new state science standards
- Led 12 science teachers in writing user guides for science units
- Member of the writing team for the new Tennessee State Science Standards
- Reviewing TCAP (state achievement tests) items, Biology and Chemistry end of course (EOC) items
- Created user guides for Institute for Learning units that were purchased by the state department upon my recommendation
- Answered questions about science teaching from TNCore site

Instructional Coach (Literacy Focus)**2010-2012**

Ralph Askins Elementary School, Fayetteville, TN

- Curriculum mapping of all subjects Pre-K through grade 3
- Provided system-wide professional development on Common Core ELA and math, and science
- Mentored teachers through teacher evaluation process
- School Improvement Plan Chair
- Testing Coordinator for building (TCAP, CRA, and benchmark), analyzed data

Middle School Science Teacher**2009-2010**

Highland Rim Elementary School

- Planned instruction and analyzed data for grades 7-8

Middle School Science Teacher**2003-2009**

Blanche School, Taft, TN

- Chair for the School Improvement Plan-over the whole school (Pre-K-8)
- Planned instruction, and analyzed data, as well as organized annual Rocket Day, bridge building competition, and science fair (also organized county science fair two years)
- Science Department Chair
- Assistant volleyball coach, academic team coach, and LEO club sponsor.

Sixth Grade Teacher**1999-2003**

Blanche School, Taft, TN

- Self-contained classroom, planned and taught ELA, Math, Science
- Trained in Gateway English Language Arts
- Trained in Reading Renaissance

Family Child Care Provider**1994-1996**

Department of Defense, Redstone Arsenal, AL

- Cared for children ages 6 months-12 years
- Monthly training on childhood development ages 6 mos-12 years
- Assisted children with homework

Preschool Teacher**1991-1992**

Department of Defense, Augsburg, Germany

- Preschool in my home, supervised by the Department of Defense Family Child Care Program
- Recognized as “Provider of the Quarter” twice. There were 50 FCC providers at the time and I was selected for the award because of the learning experiences I integrated into my program, including taking students to a German hospital, fire station, grocery store, library, etc. I had four groups of six children that came weekly
- Attended Association for Young Children in Europe Conference in Mannheim, Germany in 1991, 1992

RELATED EXPERIENCE

TDOE Science Summer Training Facilitator

Summer 2018

Tennessee State Department of Education

- Trained kindergarten teachers regarding the implementation of the new state science standards

Draft Review Team Leader for the State on Next Generation Science Standards

2011– 2014

Tennessee State Department of Education

- Collected data from state-wide surveys and compiled reports, along with Science Coordinator at the Tennessee Department of Education, and submitted reports to Achieve

Program Director

2006-2014

Tennessee Educators of Aquatic and Marine Science

- Planned annual spring conference (location, lodging, food, workshop presenters, etc.) and planned TEAMS sessions at annual Tennessee Science Teachers Association (TSTA) conference
- Scheduled 120 sessions with presenters from all over the world during our 2010 NMEA national conference in Gatlinburg
- Middle Tennessee representative from 2002-2005

Common Core Coach in Literacy-Science

2013-2014

TNCore/TN State Department

- Trained science teachers across the state on common core state standards in science literacy

TCAP Item Reviewer for Pearson

2011-2014

TCAP Item Reviewer for McGraw Hill

2004

- Reviewed for TCAP (state achievement test) and MAAS (for students with accommodations) science grades 3-8

Quality Assurance Review Team Member

2011-2012

AdvancEd/Southern Association of Colleges and Schools

- AdvancEd (SACS) visits to schools in Tennessee. Reviewed mainly the Teaching and Learning component, but also data analysis and others

Contributor

2011-2012

Tennessee Curriculum Center (web site)

- Located and submitted resources for middle school science

Science Representative

2007-2008

Project Citizen Curriculum for Tennessee Department of Education

- Provided information and feedback regarding science aspects of the curriculum as it was designed and written

Master Teacher**2006**

UTMartin IMEGS

- Took information given to participants by the professors and instructed how to use the information in the classroom, including teaching strategies, and integration of curriculum

Participant**2006-2009**

Lincoln County Schools "So You Want To Be an Administrator" Program

- Enrolled in a three year administrators program through central office

GRANTS

Hamilton, F.A. NREA Mini Grant (2002). National Rural Electric Cooperatives Association. Funded: \$500
Hamilton, F.A. TEAMS Mini Grant (2006). Tennessee Educators of Aquatic and Marine Science. Funded: \$100
Hamilton, F.A. TEAMS Mini Grant (2007). Tennessee Educators of Aquatic and Marine Science. Funded: \$100
Hamilton, F.A. NMEA Conference Scholarship Award (2007). National Marine Educators Association. Funded: \$500
Hamilton, F.A. TEA Space Grant (2009). Tennessee Educators Association Space Grant. Funded: \$1000
Hamilton, F.A. NMEA Conference Scholarship Award (2012). National Marine Educators Association. Funded: \$500

AWARDS

National Association of GeoScience Teachers

Tennessee Outstanding Earth Science Teacher

2009

Tennessee Science Teachers Association Teacher of the Year Grades 5-8

2008

Blanche School Teacher of the Year

2004-2005

Lincoln County Middle School Teacher of the Year

2004-2005

Lincoln County Distinguished Classroom Educator (all grades)

2004-2005

Oceans Alive (took 3 students to sea-one of 8 teachers selected nation-wide)

2004

Sea Scholar (one of 13 chosen nation-wide to go to sea)

2000

One of 25 selected to travel to Biloxi, Mississippi for water studies

2000

Provider of the Quarter (for preschool program in Augsburg, Germany)

1991, 1992

SERVICE**Power Play Scholarship Award Selection Committee Member****February-April 2020****MSERA 2020 Conference Session Proposals Reviewer****2020****Science Scope Reviewer****2020**

- ID 2020-Apr-SCOPE-TT-1701 titled "Generating STEM solutions to a real-world problem: Challenges and promises"

Science Scope Reviewer**2019**

- ID 2019-Dec-SCOPE-F-1667 titled "Performance Assessments for NGSS-Lessons from the [blinded] Project"
- ID 2019-Aug-SCOPE-CL-1635 titled "Egg Drop 2.0"
- ID 2019-Mar-SCOPE-F-1575.R1 titled "Arts-Integration to Explore Climate Change"
- ID 2019-Jan-SCOPE-IT-1558 titled "Sphero Robots and the Periodic Table"

Science Scope Reviewer**November 2018**

<ul style="list-style-type: none"> ID 2018-Nov-SCOPE-F-1538 titled "Searching for Oil: Concepts, methods and societal issues involved with petroleum exploration" 	
Science Scope Reviewer	August 2018
<ul style="list-style-type: none"> Reviewed manuscript ID 2018-Jul-SCOPE-F-1475.R1 entitled "How to Design a Performance Task" 	
The Journal of General Education Reviewer	July 2018
<ul style="list-style-type: none"> Reviewed manuscript JGE-D-18-00022, entitled "Academic Specialization, Double Majoring, and the Threat to Breadth in Academic Knowledge" 	
Kappa Delta Pi Psi Pi Chapter Sponsor	2018-present
National Science Teachers Association	2017
<ul style="list-style-type: none"> Conference Proposals Reviewer for 2018 National Conference in Atlanta 	
edTPA Professional Training for COE Faculty	2017
Careers Class Speaker at Sparkman High School	2016
Science Literacy Demystified Workshop for Students	2016
Speaker, J.O. Johnson High School Teacher Summit	2015
Science Fair Judge Hazel Green Elementary	2015- 2017
Science Fair Judge Challenge Elementary	2019-2020
Tennessee Education Association	
<ul style="list-style-type: none"> Representative Assembly Representative 	2000-2003 2005, 2007-2009
Kappa Delta Pi-Rho Gamma Chapter	
<ul style="list-style-type: none"> Historian President (ACE Award Winner) 	2000 1999

MEMBERSHIPS

Tennessee Educators of Aquatic and Marine Science (TEAMS)	Enrolled 2000
Tennessee Earth Science Teachers (TEST)	2001
Tennessee Science Teachers Association (TSTA)	1999
National Marine Educators Association (NMEA)	2005
National Science Teachers Association (NSTA)	2005
Tennessee Academy of Science (TAS)	2008
Geological Society of America (GSA)	2007
Association of Teacher Educations (ATE)	
Alabama Reading Association (ARA)	2017
Alabama Science Teachers Association (ASTA)	2017
National Association for the Education of Young Children (NAEYC)	2019

