



Florida State University

ARF News Special Feature

August 2019



ARF MEMBERS PARTICIPATE IN THE

1st National Science Foundation Micro-Spiral Methodology Workshop

By

Fanchon F. Funk, Edith G. Davis, Penny J. Gilmer



Left to right: Mr. Larry Smith, Dr. Tawainga Katsvairo, Dr. Leonard Haynes, Senior Advisor to the Under Secretary of Education, Dr. Fanchon Funk, Dr. Edith Davis, Workshop Chair and Developer of the Micro-Spiral Method of Learning for Science Education, Dr. Penny Gilmer and Ms. Farheen Damani-Hussain, Intern to Dr. Gilmer

Association of Retired Faculty and Staff members, Drs. Penny Gilmer and Fanchon Funk were selected participants and presenters at the First National Science Foundation Micro-Spiral Methodology Workshop May 9-10, 2019. The workshop was hosted at the Al Lawson Jr. Multipurpose Center, Florida A&M University, Tallahassee, Florida. Dr. Edith Davis planned and served as Chair of the Workshop,

which attracted over 200 science educators, community leaders and stakeholders in education from Florida and other states.

This highly energized workshop began with 25 three- and four-year old students from the Brownville Prep School, Rita Brown, Director, singing the "Micro-Spiral Planet Earth Song," by Dr. Edith Davis. The

FAMU DRS School also performed this song later in the day, which was just incredible. The attendees were speechless.

Dr. Edith Davis, Professor, Micro-Spiral Method, Author

Dr. Edith Davis is an assistant professor at Florida A&M University where she serves as Science Education Coordinator of Physics, Chemistry, Biology, and Earth & Space Sciences. She serves as National Chair of Science Education for the prestigious Association of Teacher Educators. Davis is also the Founder and CEO for the STEM Global Institute, Inc., the S.G.I. Scholar Foundation and is the First African - American Female Geophysicist, USA.

What is the Micro-Spiral Method?

The basic concept of the Micro-Spiral curriculum is one in which there is an iterative revisiting of topics or themes throughout the course. The Micro-Spiral curriculum is not simply a repetition of a topic taught; it requires a deeper understanding of the course material, with each encounter of course materials building on the previous topic. This provides for increased competence of students.

How did this method for learning get started?

In 2004, Dr. Davis was introduced to Dr. Hilda Taba, the creator of the first Spiral Curriculum for the content area of Social Studies. Based on research, Dr. Davis came to the conclusion that this is how we really learn. She created the first Micro-Spiral Curriculum for Science Education

and a mnemonic to help in the transfer of scientific concepts, knowledge and skills into the left as well as the right side of the brain.

Dr. Davis has dedicated her life to the research and the perfecting of the Micro-Spiral Method. Her research has revealed that the Micro-Spiral Method can assist in overcoming two major problems in educational systems worldwide: absenteeism and the loss of instructional time. The Micro-Spiral Method overcomes these two major problems for educating future generations by allowing the students a minimum of three structured opportunities for learning concepts, knowledge and skills. An illustration of Micro-Spiral of Concepts is noted in this article.

Dr. Davis' research has proven that the Micro-Spiral Method for the transfer of concepts, knowledge and skills does help in the retention and application of these concepts.

The most dramatic demonstration of the effectiveness of the Micro-Spiral Method was when African American students' state science scores increased by 45 percent after receiving concepts, knowledge, and skills through the Micro-Spiral Method.

Dr. Davis received two National Science Foundation Grants totaling over \$550,000 to disseminate and test the effectiveness of the Micro-Spiral Method in transferring scientific concepts, knowledge and skills.

Illustration of Micro - Spiral of Concepts

Phase	Monday	Tuesday	Wednesday	Thursday	Friday
Past (Phase One)	Electromagnetic Spectrum	Visible Light	Reflection	Refraction	"Angle of Incident" (Reflection)
Present (Phase Two)	Visible Light	Reflection	Refraction	"Angle of Incident" (Reflection)	Snell's Law (Refraction)
Future (Phase Three)	Reflection	Refraction	"Angle of Incident" (Reflection)	Snell's Law (Refraction)	Indices of Refraction

Dr. Leonard Haynes, senior advisor to the Under Secretary of Education, Washington D. C. attended to learn more about the Micro-Spiral Method and to serve as a keynote speaker.

Dr. Caroline Leaf, a world-renowned neuroscientist and the lead keynote speaker, enthusiastically endorsed Dr. Davis' work on the Micro-Spiral Method and her book: *How We Really Learn: The Micro-Spiral Method (MSM)*.

The media community was present at the workshop and captured the essence of the NSF-sponsored Micro-Spiral Workshop and attendee comments, disseminating the information across various media platforms.

Representatives from the National Association of Teacher Educators were Dr. Fanchon Funk and Sheila Bolin, Florida; Dr. Elsa Price, Alabama and Dr. Tammie Brown, Mississippi, each of whom was a workshop presenter. Dr. Funk also served as a member of the workshop planning committee.

For more information, please contact Dr. Edith Davis (edithdavis58@gmail.com) or Dr. Fanchon Funk (ffunk@fsu.edu).