New Orleans Area Conference
November 30–December 2, 2017

THEME: Celebrate Science: Inspire, Integrate, Innovate

Strands
Inspire Our Young Learners
Integrate Science Education for ALL
Innovate Science Education for Tomorrow

Strand One
Inspire Our Young Learners
Exploring science is one of the many joys of childhood. However, many of our young students are given limited opportunities to learn science and therefore are missing the wonder and excitement of understanding the world around them. The goal of this strand is to engage our young learners in science by creating formal and informal education experiences that build upon natural inquisitiveness and use inquiry to help them understand their world. Young learners need quality learning experiences and activities that spark their curiosity, promote higher level thinking, and nurture a solid foundation in science. This strand will expose educators to instructional strategies that make connections between literacy and scientific concepts and build pedagogical knowledge of science teaching.

GOAL: Provide workshops and presentations focused on one or more of the following:

- Identifying effective strategies and resources that actively engage students and incorporate components of science into the core early childhood and elementary curriculum.
- Providing exemplary lessons in which students engage in experiences and activities that are based on current and available research and issues in science education.
- Applying science learning through authentic experiences and open-ended exploration.
- Developing an interdisciplinary approach to the learning of science through various forms of communication (reading, writing, speaking and listening).

CRITERIA: Proposals will be evaluated on the extent to which they:

- Align with one or more strand goals.
- Include developmentally and age-appropriate creative presentations and investigations.
- Are based on current and available research and issues in science education.
- Involve participants through activities or discussion.
- Identify research-supported effective strategies and resources that actively engage students, including inventive uses of science and literacy.
- Provide examples of authentic or real-world applications and connections.
**Strand Two**  
**Integrate Science Education for ALL**

All students need to be engaged in and have access to exemplary science classes, out-of-school science activities, real-world work experiences, mentors, and other springboards to STEM careers. In order for the United States to remain a world leader and to advance our society, science educators need to empower students to create a future filled with scientific and technological advances. An urgency exists in the United States to develop a stronger workforce in the STEM fields. However, research has shown that only a small number of students are interested in pursuing degrees or qualifying for jobs in the STEM fields. It is clear that to benefit our economy and society, our priority should be on educating and encouraging more students from all races, genders, abilities, nationalities, and socioeconomic statuses to study science. This strand will explore ways for educators to use the newest standards and research to reach ALL students, including English language learners, special education students, gifted and talented students, and underrepresented minorities.

**GOAL:** Provide workshops and presentations focused on one or more of the following:

- Demonstrating research-based instructional strategies to expand inquiry, solve complex problems, and integrate Science, Technology, Engineering, and Mathematics for ALL students from early childhood education to college and career readiness.
- Encouraging the development of scientific questioning, analytical thinking, and communication skills in ALL students.
- Sharing authentic approaches that foster collaboration among those who are teaching and assessing science for ALL students, including English language learners, special education students, gifted and talented students, and underrepresented minorities of all ability levels.
- Examining teaching methods that support ALL students: planning and incorporating effective, developmentally appropriate instruction, and providing opportunities that foster engagement and passion while being relevant for tomorrow's job market.
- Increasing awareness of the STEM resources and opportunities for ALL students.

**CRITERIA:** Proposals will be evaluated on the extent to which they:

- Align with one or more strand goals.
- Are based on current and available research and issues in STEM education.
- Are based on current and available research that supports best practices in the education of these special populations and groups, including inventive uses of assistive technology.
- Involve participants through activities or discussion.
Strand Three
Innovate Science Education for Tomorrow

Students are often taught science concepts and current issues, but are rarely challenged to create innovative and practical solutions to real-world problems. Students are engaged in the use of technology, but their understanding of the science and engineering behind the function of that technology is limited. PreK–16 science instruction should emphasize the application of science to all career fields, both in theory and in practice. This strand expands participants’ understanding of how to foster students’ critical-thinking skills and facilitate future problem solving by students.

Goal: Provide workshops and presentations focused on one or more of the following:

- Investigating the connection between problem solving, solutions, and innovation.
- Demonstrating how science drives innovation and how innovation drives scientific discovery.
- Highlighting preK–16 instruction and authentic assessment strategies that promote students’ willingness to take risks and persevere while confronting tomorrow’s challenges.
- Sharing exemplary lessons, resources, and instructional and assessment strategies in which students apply 21st-century STEM practices and skills.
- Illustrating the application of STEM to career, technical, and agriculture education and work-related experiences.

Criteria: Proposals will be evaluated on the extent to which they:

- Align with one or more strand goals.
- Support the science and engineering practices from A Framework for K–12 Science Education.
- Are based on current and available research and technological applications.
- Involve participants in engaging activities or discussion.
- Provide examples of authentic or real-world applications and connections (e.g. robotic circuitry, 3D printing, geospatial technology, bioengineering, and aerospace technology).
- Model reverse engineering to emphasize science concepts.