NSTA Chicago National Conference
April 8–11, 2021

THEME: All Students, All Sciences, All Settings

Strands:
Supporting All Students in Science
Shattering the Silos of STEM
Setting the Stage for Science
Stages of Three-Dimensional Implementation

Strand One:
Supporting All Students in Science
In today's world, students need to actively engage in their own learning. Embracing diversity through advocacy and agency to address issues in equity is imperative in today's educational settings and work environments. Education should happen in all settings for all students. Today's classrooms are full of diverse learners and teaching tomorrow's future can be challenging. Promoting equity, advocacy, and agency is multifaceted and includes examining culture, gender, socio-economics, and language. In this strand, educators will deepen their capacity to connect these broad issues to their own unique student population.

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

- Providing tools and strategies to effectively advocate for students in educational settings.
- Offering resources to connect students with scientists that represent their community and backgrounds.
- Offering resources and training in the creation and implementation of vetted culturally responsible and responsive curricula.
- Demonstrating strategies to cultivate agency within your student populations.
- Developing personal advocacy skills (professional learning, self-care, and personal growth) to better support their student populations.

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

- Align with one or more strand goals.
- Support specifically identified parts of the NRC *Framework*, the *NGSS*, or state standards.
- Support three-dimensional teaching and learning.
- Are based on current and available research.
- Involve participants through activities or discussion.
- Are grounded in cultural competency (promotes equity, demonstrates the value of diversity, and addresses the impact of bias).

Strand Two:
Shattering the Silos of STEM

All students, no matter what their future education and career path, must be engaged in innovative and integrated STEM experiences. Multidisciplinary STEM learning should reach across the traditional science silos to incorporate all science disciplines, including computer science. An integration of science, technology, engineering, and mathematics is needed to address major world challenges that confront society. The ability to solve TOMORROW's problems is dependent on our students' STEM education TODAY. This strand will explore innovative strategies and authentic STEM education that connects to current and future real-world applications.

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

- Demonstrating ways to use instructional technology and computer programming to modify and redefine instruction and improve science learning.
- Sharing examples of innovative preK–16 STEM projects, lessons, and curricula.
- Modeling strategies to authentically integrate Science, Technology, Engineering, and Mathematics in all learning environments.
- Connecting today's STEM education to the needs of future workforce.
- Illustrating real-world STEM practices and applications.
- Bridging real-world phenomena to STEM, including all areas of science and computer sciences to produce college-, career-, and citizenship-ready students.

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Strand Three:
Setting the Stage for Science

Every day, everyone engages with science. Connecting all arenas of learning to build scientific literacy is a fundamental shift needed to ensure that, tomorrow's future is learning science today. All learners should experience science across varied settings. These include preK–16 classrooms, informal learning centers, extracurricular activities, and homes. This strand will increase educators' abilities to identify and create connections throughout all areas of learning and promote the fundamental idea that science can occur in all settings.

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

- Providing resources to help educators build a coalition of science- and STEM-based shareholders.
- Illustrating effective ways to incorporate science learning in all settings.
- Modeling strategies and providing resources for new-to-science teachers.
- Developing a network of multifaceted groups to cultivate scientific literacy at all ages.
- Sharing examples of collaborative relationships between the classroom and beyond into nontraditional avenues of science education.

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Strand Four:
Stages of Three-Dimensional Implementation

Almost a decade ago, *A Framework for K–12 Science Education* was released, highlighting the importance of three-dimensional learning and offering guidance for science teaching, learning, and assessment. Throughout the country, educators are at various stages of implementation. In this strand, participants will develop, strengthen, and further their capacity for implementing three-dimensional teaching, learning, and assessment.

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

- Modeling strategies educators can use in their classrooms immediately for three-dimensional learning: practical resources, tips, and lessons. **(a, New to 3-D learning)*
- Featuring strategies to integrate disciplinary core ideas, science and engineering practices, and crosscutting concepts grounded in phenomena*. *(a, New to 3-D learning)*
- Providing exemplars of three-dimensional assessment practices for science learning. **(a, New to 3-D learning*)
- Highlighting successes and struggles while implementing three-dimensional teaching, learning, and assessment. **(a, New to 3-D learning; or b, Ready to go deeper with 3-D learning*)
- Highlighting new research and research applications from the last 10 years. **(b, Ready to go deeper with 3-D learning)*

  *Note: *a = Stage 1: New to 3-D learning / b = Stage 2: Ready to go deeper with 3-D learning*

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