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To Whom It May Concern,

The National Science Teachers Association (NSTA) will be hosting its 2018 National Conference on Science Education in Atlanta, Georgia, from March 15–18, 2018. This event attracts science educators from all over the United States and the world. Attendees choose from hundreds of workshops, demonstrations, and presentations covering every discipline, grade level, and teaching focus from grades preK–16. They hear nationally renowned speakers address the hottest topics in science education and learn about the latest breakthroughs from experts in the field.

The General Session speaker for the Atlanta National Conference is Ron Clark, founder of the Ron Clark Academy in Atlanta. Clark will share his journey from teaching in a low-wealth rural area in North Carolina to the inner-city streets of Harlem in New York City. Along the way, Mr. Clark will share inspirational stories of how his students made outstanding growth in test scores, conducted projects that garnered worldwide attention, and were invited to the White House three separate years to be honored by the President.

To help participants make the most of the professional learning opportunities available at the Atlanta conference, the conference planning committee has focused the conference around four strands that explore topics of current significance:

### **Focusing on Evidence of 3D Learning**

States continue to develop and adopt standards that build on a three-dimensional approach, which calls on students to use disciplinary core ideas, science and engineering practices, and crosscutting concepts to explain real-world phenomena and solve authentic problems. This strand will help teachers, whether they are 3D novices or experts, expand their understanding of three-dimensional teaching, learning, and assessment.

### **Imagining Science as the Foundation for STEM**

STEM education has become a priority for many states as we seek to provide today's students with the real-world, innovative skills that they will need to be successful in tomorrow's world. Sessions in this strand will allow participants to develop their understanding of how to plan and teach collaboratively within these integrated learning environments.

### **Reflecting on Access for All Students**

Just as science encompasses diverse fields of learning from astronomy to zoology, science educators are called upon to equitably meet the needs of and engage ALL learners. This strand increases participants' understanding of the unique needs of various types of learners and helps them reduce barriers to full participation in science.

### **Comprehending the Role of Literacy in Science**

A great number of personal and societal issues require citizens to draw upon a foundation of scientific knowledge, technological understanding of problem solving, and the ability to design scientific solutions to obtain, evaluate, and communicate information in order to make informed decisions. This strand will allow educators to become advocates of literacy in preK–12 science and engineering, to see the connections between science and literacy, and to learn literacy strategies that encompass active student engagement.

Additional events that will be offered during this four-day science education extravaganza are:

- Hundreds of science education–oriented workshops and numerous short courses
- Exciting and education-based field courses

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- Exhibits where teachers can learn about and try tools and resources to further enhance the skills of science educators
- Numerous strand-related “Featured Speakers”, who will share their expertise in various science education–related fields
- Conference participants can also earn one (1) graduate-level credit in professional development through a pre-selected university at the Atlanta national conference

We are confident that the programing and events associated with the 2018 National Conference on Science Education in Atlanta, Georgia will allow conference participants to return to their respective districts/schools armed with their new approaches to support their students’ science learning. They will return to their schools re-energized and ready to use their newly acquired science education knowledge and pedagogies to provide meaningful science instruction for their students, preparing them to be successful in a scientifically literate workforce.

### **What’s Special for Teachers in Georgia?**

The Georgia Science Teachers Association (GSTA) is collaborating with the National Science Teachers Association (NSTA) to host the 2018 National Conference on Science. In addition to the nationally recognized speakers, we’ll have sessions in which attendees can hear about and share classroom-tested strategies from their Georgia colleagues.

Here is how our strands are particularly relevant to educators in and beyond Georgia:

#### **Focusing on Evidence of 3-D Learning**

Georgia, similar to other states, has adopted standards that build on a three-dimensional approach, which calls on students to use disciplinary core ideas, science and engineering practices, and crosscutting concepts to explain real-world phenomena and solve authentic problems. This strand will help teachers, whether they are 3-D novices or experts, expand their understanding of three-dimensional teaching, learning, and assessment.

#### **Imagining Science as the Foundation for STEM**

STEM education continues to be a priority in Georgia as we seek to provide today's students with the real-world, innovative skills that they will need to be successful in tomorrow's world. Sessions in this strand will allow participants to develop their understanding of how to plan and teach collaboratively within these integrated learning environments.

#### **Reflecting on Access for All Students**

Just as science encompasses diverse fields of learning from astronomy to zoology, Georgia’s science educators are called upon to equitably meet the needs of and engage ALL learners. This strand increases participants' understanding of the unique needs of various types of learners and helps them reduce barriers to full participation in science.

#### **Comprehending the Role of Literacy in Science**

A great number of personal and societal issues require citizens to draw upon a foundation of scientific knowledge, technological understanding of problem solving, and the ability to design scientific solutions to obtain, evaluate, and communicate information in order to make informed decisions. The Science Georgia

Standards of Excellence explicitly connect science learning to literacy. This strand will allow educators to become advocates of literacy in preK–12 science and engineering, to see the connections between science and literacy, and to learn literacy strategies that encompass active student engagement.

Beyond the sessions in these strands, these additional events will provide Georgia science educators with ideas and resources that they can take directly back to their classrooms:

- The GSTA Annual Meeting and reception to allow Georgia science teachers to network and connect with the organization
- Sessions conducted by Georgia DOE personnel
- Two share-a-thons, sponsored by the Georgia Science Supervisors Association and the Georgia Youth Science and Technology Centers, featuring innovative Georgia science teachers
- More than 150 conference sessions by Georgia science teachers, leaders, and university faculty
- Exciting and education-based field trips to local science-related facilities
- Exhibits where teachers can learn about and try tools and resources to further enhance the skills of science educators

### **Research Brief on Conference Attendance**

In public schools, effective professional development affects students. Student learning and achievement increase when educators engage in effective professional development focused on the skills educators need in order to address students' major learning challenges (Mizell, 2010). When people use the term "professional development," they usually mean a formal process such as a conference, seminar, or workshop; collaborative learning among members of a work team; or a course at a college or university (National Staff Development Council, 2001).

College and university programs cannot provide the extensive range of learning experiences necessary for graduates to become effective public school educators. The complexity of teaching is so great that one-third of teachers leave the profession within three years and 50% leave within five years (Ingersoll, 2003). Educators who do not experience effective professional development do not improve their skills, and student learning suffers (Mizell, 2010). Educators often complain that they are required to participate in professional development that does not address the real challenges they face in their schools and classrooms.

It is critical to Georgia's economic and social well-being that all students receive an excellent K-12 science education. To accomplish this, Georgia's teachers must skillfully integrate many pieces—Science GSE, literacy, science & engineering practices, STEM, TKES, and crosscutting concepts—of the science education puzzle. The Georgia Science Teachers Association (GSTA) leadership team with guidance and support from the Georgia Department of Education and the National Science Teachers Association used state and national data to determine the areas educators in Georgia have the most difficulty addressing. This year's conference explores how these pieces build on, overlap with, and support one another in the science classroom. The NSTA conference was organized into strands based on the needs of science educators in and beyond Georgia.

The 2018 NSTA Conference Strands will focus on three-dimensional learning (following the framework of the Science GSE), integrated STEM education, providing access to science learning for all students, and integrating literacy with science learning. Sessions within each of these strands will highlight research-based best practices and models being used effectively across the state and nation. These strands provide teachers with professional learning opportunities aligned to the Georgia Teacher Keys Effectiveness System (Georgia Department of Education, 2014).

The sessions in the integrated STEM strand will focus on programs and approaches that truly integrate learning experiences across the STEM disciplines with the goal of supporting science learning for all students. STEM education is an interdisciplinary approach to learning where rigorous academic concepts are coupled with real-world lessons as students apply science, technology, engineering, and mathematics in contexts that make connections between school, community, work, and the global enterprise enabling the development of STEM literacy and with it the ability to compete in the new economy (Tsupros, 2009).

The inclusion of writing and literature connections also support scientific practices outlined in *A Framework for K-12 Science Education* from the National Research Council (2012) and the focus of the third strand – GPS within the Framework. The Framework for K-12 Science Education highlights the importance of obtaining, evaluating, and communicating information. The National Research Council's (2012) *Framework for K-12 Science Education* states:

Science cannot advance if scientists are unable to communicate their findings clearly and persuasively or to learn about the findings of others. A major piece of science is thus the communication of ideas and the results of inquiry – orally, in writing, with the use of tables, diagrams, graphs, and equations, and by engaging in extended discussions with scientific peers. Science requires the ability to derive meaning from scientific texts (such as papers, the internet, symposia, and lectures), to evaluate the scientific validity of information thus acquired, and to integrate that information. (p. 53)

The sessions in this strand will focus on instructional approaches that integrate the science and engineering practices and crosscutting concepts of the *Framework for K-12 Science Education* and Science GSE.

Veteran and new teachers alike will benefit from the opportunity to learn from their peers across the state. Learning during the school year makes it easier for educators to apply what they learn immediately within their workplaces so that students benefit immediately.

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