

Dear Colleague,

The National Science Teachers Association (NSTA) will be hosting an Area Conference on Science Education in Reno, Nevada, October 11-13, 2018, at the Reno-Sparks Convention Center. Science educators from across the United States (and world) attend these content-rich conferences to learn classroom-tested, educator-developed teaching strategies; hear from nationally known experts who inspire attendees to engage their students with new enthusiasm; and try new products and software in the exhibit hall.

I urge you to set aside professional development time for the next school year to send teachers to this event (and consider attending yourself). There will be at least 12 hours of professional learning time, inspiring keynote speakers, and opportunities to explore exciting curriculum materials in the exhibit hall. Attendees can track their progress, and graduate credit will be available. Attendees choose from hundreds of workshops and presentations covering every science discipline, grade level, and teaching focus from grades preK–16.

Information on the Forum can be found on the NSTA website.

www.nsta.org/reno

Bring a Team: Use Code 5FOR4

Get a Complimentary Registration When You Sign Up Four Attendees

Elevating Science: Digging Deeper

Our conference program was developed by Nevada K-12 science educators, and our theme “Elevating Science: Digging Deeper” focuses on how educators can help develop the next generation of scientists, engineers, and other STEM professionals. We believe it is critical to Nevada’s economic and social well-being for all students to receive an excellent K-12 science education. To accomplish this, Nevada’s teachers must skillfully integrate many pieces found in the Nevada Academic Content Standards for Science, literacy, and STEM education. The Nevada State Science Teachers Association (NSSTA) leadership team, with guidance and support from the Raggio Center for STEM Education and the National Science Teachers Association, used state and national data to determine the areas educators in Nevada have the most difficulty addressing. The 2018 conference explores how these pieces build over time 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 Nevada.

This theme contains three strands that explore topics of current significance in science education. Attendees can focus on one or mix and match sessions from all.

Developing Persistence: The Power of Experience

Failure or delayed success has surprising benefits to students, teachers, and administrators—it often initiates meaningful learning experiences. Nurturing such experiences is part of three-dimensional learning; educators should support students in developing their own explanations, ideas, and solutions. Sessions in

this strand will focus on the struggles and triumphs that drive learning and explanation development. Learn from your peers' experiences in persisting as they negotiate the terrain of facilitating science learning for the next generation.

Advancing Three-Dimensional Classroom Culture

Educator understanding of three-dimensional learning is a continuum—from having a firm grasp of the structure of the three dimensions, to integrating appropriate science practices and crosscutting concepts, to developing grade-level storylines based on phenomena. In this strand, participants will be able to choose hands-on/interactive sessions based on their needs.

Cultivating Constructive Partnerships

Teaching can be isolating. Learn how to move beyond your four walls and collaborate with colleagues, informal educators, scientists, and the community. Increase opportunities to advocate for your students' science learning while you build your leadership skills. Learn how to enhance your professional growth by using the expertise in your building and your community. In this strand, presenters will showcase collaboration with business and industry, informal science organizations, policy stakeholders, and colleagues.

Our state organization, NSSTA and I have been working diligently to inform Nevada school districts about this conference so that when you request leave time and funding to attend your administration will already be aware of the event's importance. I visited, in person or on the phone, with district level personnel in Carson, Washoe, Humboldt, Lyon, Douglas, Churchill, Elko, White Pine, Nye, and Clark. Additionally, all school districts have been receiving updates on the conference schedule and events. I've included a research brief attached to this letter to assist you in providing evidence of how conference attendance assists teachers in their own professional learning.

Together we can advance the classroom culture in Nevada's school and give our students the science education they deserve. For more information, please go to www.nsta.org/reno or feel free to email me at nvscience@aol.com.

Sincerely,

Camille T. Stegman, Ph.D.
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Associate Director, Raggio Research Center for STEM Education
Council Member, Nevada STEM Advisory Council (OSIT)

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 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. Learning to successfully teach young minds is a long-term and ongoing process. To imagine that a one-time training can help a person grow in their field is to assume that one can learn to drive after one lesson. 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 challenges they face in their schools and classrooms. In addition, many wish for more collaboration with their peers (Glover, Nugent, Chumney, Ihlo, Shapiro, Guard, Koziol, and Bovaird, 2016) and there is evidence to suggest that collaboration with colleagues improves science instruction (Trygstad, Smith, Banilower, & Nelson, 2013).

To that end, in addition to the conference coming to Reno, the conference planning committee and the Raggio Center are planning to bring a national level training on three-dimensional learning and phenomena to the conference. This training would allow teachers and teacher leaders that have developed a firm understanding of three-dimensional learning to participate in the next level of understanding. The workshop will help the attendees gain a deeper understanding of the three-dimensions, phenomena and the development of storylines. Additionally, it will give the participants the skills to help facilitate the learning of others. This training is designed to help build capacity within our districts, so that our students can have the science/STEM education that will help Nevada be attractive for new technologies companies and innovators. The 2018 NSTA Conference Strands will focus on three-dimensional learning (following Nevada Academic Content Standards for Science), developing persistence, and collaborating with community partners. 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 Nevada Educator Performance Framework.

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.

References

- Glover, T. A., Nugent, G. C., Chumney, F. L., Ihlo, T., Shapiro, E. S., Guard, K., ... & Bovaird, J. (2016). Investigating rural teachers' professional development, instructional knowledge, and classroom practice. *Journal of Research in Rural Education (Online)*, 31(3).
- Ingersoll, R. (2003). Is there really a teacher shortage? Consortium for Policy Research in Education, University of Pennsylvania. Available online at <http://depts.washington.edu/ctpmail/PDFs/Shortage-RI-09-2003.pdf>.
- Mizell, H. (2010). Why professional development matters. Oxford, OH: Learning Forward. Available online at www.learningforward.org/advancing/whypdmatters.cfm
- Trygstad, P. J., Smith, P. S., Banilower, E. R., & Nelson, M. M. (2013). *The Status of Elementary Science Education: Are We Ready for the Next Generation Science Standards?* Chapel Hill, NC: Horizon Research Inc.