Day One

Keynote • 9:00 – 9:30 am

"Taking the *NGSS* to the Next Level: Increasing Scientific Literacy for ALL Students" – *Liz Mirra*

The vision for the *Next Generation Science Standards* is ambitious! All students should develop a foundational understanding of science through the practices and make connections to the crosscutting concepts. Instruction should be focused on figuring out phenomena and solving problems. Achieving this vision for all students is challenging – yet doable! Join nationally recognized science educator Liz Mirra as she shares her reflections and tips for success based on her work with thousands of science educators across the country.

Team Discount

ONE DAY

One Person: $289

BOTH DAYS

One person: $489

Team of 3+: $469 per person when enrolled at the same time

MORNING SESSIONS • 9:40 am – 12:10 pm

Choose ONE Full Morning Session OR TWO 70-Minute Sessions
One mid-morning break

Full Morning Session • 9:40 am – 12:10 pm

A-1: 3-Dimensional Problem-Based Science Instruction – *Marquita Blades*

Developing strong problem-solving skills can only happen if students have opportunities to practice solving problems. In this session, participants will engage in a sample problem-based simulation and learn how to use three dimensional practices to enhance problem-based learning experiences. Participants will also leave with the resources needed to duplicate the problem-based simulation model with their own students.

First 70–Minute Morning Sessions 9:40 – 10:50 am

CHOOSE ONE: A-2 or A-3

A-2: Powerful Ways to Make Phenomena More Meaningful for Your Students – *Vince Mancuso*

Science education research shows that students learn best when their classroom experiences are personally meaningful. In this session, we will explore how phenomena can be delivered in ways that profoundly affect students at personal levels. Discover how to construct experiences that can be meaningful to students within the structure of an *NGSS* learning environment and lesson.

A-3: Planning Engaging Units Aligned to the *NGSS* for any Learning Environment – *Liz Mirra*

So, you have an anchoring phenomenon to start your unit with. What do you do with it? What do you do next? What does the unit look like? How do you keep coming back to the anchoring phenomenon in an authentic way? In this session, go step-by-step through what an *NGSS*-aligned unit will look like in your classroom.

Second 70–Minute Morning Sessions 11:00 am – 12:10 pm

CHOOSE ONE: A-4 or A-5

A-4: Using Discourse to Collaboratively Construct Meaning of Phenomena – *Vince Mancuso*

One of educators' fundamental roles in the *NGSS* classroom is to frame and navigate the learning environment towards the co-construction of knowledge. Discover powerful strategies and techniques that foster more rewarding discourse, leading to a deeper understanding of natural phenomena.

A-5: Crosscutting Concepts-Unlocking the Potential – *Liz Mirra*

The crosscutting concepts are the dimension of the *NGSS* most teachers are least sure how to explicitly implement in the classroom. Learn what the crosscutting concepts are, why they are such a powerful tool for improving student learning, and most complementing the *NGSS*.

Lunch break • 12:10 – 1:10 pm

… "Engaging presentations filled with applicable information!" …

Who is BER?

The Bureau of Education & Research is North America's leading presenter of training for professional educators. Our goal is to provide high-quality PD programs, based on sound research, with an emphasis on practical strategies and techniques that can be immediately implemented.

"Fantastic. One of the best conferences I've attended. Great presenters: supportive and helpful, well prepared, and gracefully answered questions."

– Silvio Monacelli, Teacher

Day One

AFTERNOON SESSIONS • 1:10 – 3:40 pm

Choose ONE Full Afternoon Session OR TWO 70-Minute Sessions
One mid-afternoon break

Full Afternoon Session • 1:10 – 3:40 pm

B-1: Using Phenomenon to Launch and Drive a More Powerful *NGSS* Lesson – *Vince Mancuso*

Among the most difficult challenges facing science educators aligning to the *NGSS* is developing 3-dimensional curriculum. In this interactive session, you will discover how your existing or required science curriculum can be reshaped into a lesson that lines up with *NGSS* learning objectives. Learn ways that with minor modifications, your current science lessons can be easily transformed into a more powerful three-dimensional learning experience!

First 70–Minute Afternoon Sessions 1:10 – 2:20 pm

CHOOSE ONE: B-2 or B-3

B-2: Using Academic Discourse to Drive *NGSS* Instruction – *Marquita Blades*

Get your students sounding like the scientists and engineers that they are by learning practical methods for increasing academic discourse while implementing the *NGSS*.

B-3: The *NGSS* in the Physical Science, Chemistry and Physics Classrooms – *Liz Mirra*

Learn the content shifts found in the Disciplinary Core Ideas that impact physical science, chemistry, and physics classroom. Get subject-specific resources and examples specifically aligned to the standards that will work in your classroom.

Second 70–Minute Afternoon Sessions 2:30 – 3:40 pm

CHOOSE ONE: B-4 or B-5

B-4: *Next Generation Science Stations* – Intentionally Incorporating Crosscutting Concepts – *Marquita Blades*

Including multiple, much less all, crosscutting concepts in one lesson or lab can be a challenge. In this session, learn ways to use stations more intentionally to not only include crosscutting concepts, but also to support authentic mastery of the scientific inquiry process.

B-5: Online and Paper-Based Assessments Aligned to the *NGSS* – *Liz Mirra*

Explore the critical components of three-dimensional assessments and get quality examples of assessments aligned to the *NGSS*-including examples of assessments for online platforms. Learn where to find the newest and best resources to help you and your teachers develop assessments aligned to the new standards.

Can't Attend?

Online Professional Development Options:

Related Online Courses

A related On Demand Video-Based Online Learning course, *Help Your Students Master the Next Generation Science Standards: Practical Strategies and the Best, New Tools,* for Grades 6-12, is available for immediate registration. To enroll, visit www.ber.org/online

… "I'm excited to improve my instruction by incorporating these practices." …

Day Two

MORNING SESSIONS • 9:00 – 11:40 am

Choose ONE Full Morning Session OR TWO 75-Minute Sessions
One mid-morning break

Full Morning Session • 9:00 – 11:40 am

C-1: Developing an *NGSS*-Aligned Curriculum – *Liz Mirra*
Aligning a curriculum to the *NGSS* is a challenging undertaking for any school or district. Learn about the resources that are available to help you through this process and work through a proven step-by-step process that will guide you and your teachers to a science curriculum that is truly three-dimensional.

First 75–Minute Morning Sessions
9:00 – 10:15 am

CHOOSE ONE: C-2 or C-3

C-2: Bump It UP – *Marquita Blades*
Learn how to incorporate both Cross Cutting Concepts and Science and Engineering Practices in practical ways, using the lessons and materials that you already have. Bring a copy of your favorite lab or activity that could use a little boost and we will Bump it UP!

C-3: Harness the Power of Discrepant Event Phenomena in the Science Classroom – *Vince Mancuso*
A discrepant event phenomenon can be one of the most powerful and valuable strategies in a science educator's toolbox. The learning potentials of a discrepant event demonstration lie in their specific attributes, format and delivery. Discover the most rewarding features of discrepant events and learn to anchor them to lessons in ways that can meaningfully engage and significantly influence learning outcomes.

Second 75–Minute Morning Sessions
10:25 – 11:40 am

CHOOSE ONE: C-4 or C-5

C-4: The 3rd Dimension: Reinforcing Science and Engineering Practices – *Marquita Blades*
Thinking like a scientist or engineer requires practice. In this session, you'll receive examples of strategies that will help our students develop the skills necessary to master science and engineering practices and apply them in any situation.

C-5: Delivering *NGSS* Learning Experiences in Life Sciences/Biology – *Vince Mancuso*
Among the most challenging disciplines to identify phenomena and develop lessons that embody the *NGSS* objectives are the life sciences. In this interactive session, you will discover new and innovative lessons, phenomena and resources that align directly to the *NGSS* standards for life science, biology, and anatomy.

Lunch Break • 11:40 am – 12:40 pm

On-Site Training

Conferences like this one along with many other topics can be brought to your school or district. Please view all of our On-Site PD options at www.ber.org/onsite or call 877-857-8964 to speak with an On-Site Training PD Consultant.

Comprehensive Digital Resource Handbook

You will receive an extensive digital resource handbook, specifically designed for this conference. Included in the handbook are resource materials for ALL conference sessions, even those you don't attend. These materials include:

- Practical ideas for helping your students meet rigorous science content and practice standards including those aligned with the *Next Generation Science Standards*
- Innovative strategies for integrating the science and engineering practices and crosscutting concepts into your science instruction
- Proven step-by-step techniques for planning engaging instructional sequences aligned to the *NGSS*
- Outstanding ideas for incorporating engineering into your science instruction

"Lots of ideas to bring back to our science department!"
– Lindsay Ando, Science Teacher

ABOUT BER LIVE ONLINE CONFERENCES

Outstanding Instructors
All programs are led by outstanding, top-rated BER national trainers

Extensive Digital Resource Handbook
You'll receive an extensive digital Resource Handbook full of practical strategies and resources.

Highly Interactive
You'll be able to ask questions, consult with the instructors, and share ideas with other participants

Program Guarantee
As we have for 45 years, we guarantee the high quality of our programs. If you are not satisfied, we'll give you a 100% refund.

"I have a LOT to think about and many resources to investigate. Thank you to all of the instructors for sharing their knowledge and resources with us!"

– Kathleen Murphy, Teacher

Day Two

AFTERNOON SESSIONS • 12:40 – 3:20 pm

Choose TWO 75-Minute Afternoon Sessions • *One mid-afternoon break*

First 75–Minute Afternoon Sessions 12:40 – 1:55 pm

CHOOSE ONE: D-1, D-2 or D-3

D-1: Make it Phenomenal: Choosing and Creating Appropriate Phenomena for Designing 3D Lessons – *Marquita Blades*

Phenomena are not one size fits all … Learn what to look for when selecting and what to think about when creating your own phenomena. You'll leave this session with sample phenomena that speak directly to your students' needs and interests.

D-2: Utilize Effective Student Assessment Strategies in the Phenomena-Driven Science Classroom – *Vince Mancuso*

Assessment techniques should complement the style of learning students experience in the classroom. For those implementing an *NGSS* classroom, assessment presents unique challenges. This session will provide tools, resources, and practical strategies for appropriate summative and formative assessment of student understanding of science and skill development in a three-dimensional learning environment.

D-3: Using Anchoring Phenomena for Optimum Learning – *Liz Mirra*

Designing instruction around anchoring phenomena is one of the key shifts in the new standards. But where do you find anchoring phenomena, how do you make sure the ones you choose don't "flop" when used with students, and what do you do with them? Learn how to successfully integrate anchoring phenomena into your science instruction.

Second 75–Minute Afternoon Sessions 2:05 – 3:20 pm

CHOOSE ONE: D-4, D-5 or D-6

D-4: Meet Them Where They Are: Differentiated *NGSS* Instruction – *Marquita Blades*

How can you ensure that you are maintaining the appropriate level of rigor while leaving no student behind? In this session we will explore using the Escape Room model and Google Forms branching and tiering to create 3D lessons that are inclusive for students at varying levels of achievement.

D-5: Guiding Students to Develop Rigorous Research Questions in the Phenomena-Driven Classroom – *Vince Mancuso*

In the *NGSS* classroom, the ability for students to develop their own research question is a critical skill that frames their investigation but is unfamiliar territory for most students. Discover proven strategies and scaffolding techniques that will guide students towards the construction of rigorous and rewarding research questions.

D-6: What an *NGSS* Classroom Looks Like: Coaching and Observing Science Teaching – *Liz Mirra*

A classroom that is truly aligned to the *NGSS* looks very different from the traditional science classroom. Discover the hallmarks to look for when observing a classroom that is transitioning to the *NGSS* and learn how to coach teachers to continue to improve their practice.