



BUREAU OF EDUCATION & RESEARCH

## A Unique Two-Day Live Online Conference



# 2027 Conference for SCIENCE Teachers

## Practical Strategies to Advance Science Learning (Grades 6-12)

**February 2 and 3**

**Start Time: 9 AM Eastern**

(8 AM Central, 7 AM Mountain, 6 AM Pacific)

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CEUs and Graduate Credits Available

See page 7 for details

## Choose from 21 Strategy-Packed Conference Sessions



**Hands-On Options • Science Teacher Resources • Hundreds of Practical Strategies**

# Practical Strategies to Advance Science Learning!



## Meet Your Team of Expert Instructors

**DR. MARQUITA BLADES** is an experienced and award-winning secondary science teacher, international speaker, author, and science consultant. Marquita's diverse experiences have put her on the front line of the implementation and integration of *Next Generation Science Standards*. She has managed national STEM programs for secondary level students and has served as a curriculum and assessment developer, and professional learning facilitator for numerous school districts.

**DR. VINCE MANCUSO** is a veteran science educator, national presenter, author, and consultant. A sought-after presenter at science conferences, Vince is known for engaging sessions that regularly draw standing-room-only audiences. Vince enjoys sharing his enthusiasm for using phenomena to engage students, spark curiosity, and drive lessons. His ideas are powerful and practical, and student-proven in his own classroom. Vince is the creator of a series of fully developed, classroom-ready science kits and the author of the book *Phenomena-Driven Inquiry*, a resource of lessons, strategies, and resources.

**ELIZABETH (LIZ) MIRRA** is a science instructional coach and a middle and high school science educator. She was involved in reviewing and providing feedback on the *Next Generation Science Standards* throughout their development and has worked with numerous school districts providing professional development on best science practices and assistance with aligning science curriculum. Elizabeth is the recipient of the prestigious President's Award for Excellence in Science Teaching.



### Who Should Attend

Educators who teach Science in Grades 6-12: Classroom Teachers, Department Heads, Science Specialists, and Administrators



# Day One

## Keynote • 9:00 – 9:30 am

### **“Increasing Scientific Literacy for ALL Students” – Liz Mirra**

All students can develop a stronger foundational understanding of science through practices that make connections to crosscutting concepts and instruction 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.

## 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: Meet Them Where They Are: Practical AI Tools to Help You Differentiate Your Science Instruction – Marquita Blades**

Differentiation shouldn't mean choosing between rigor and access. In this hands-on half-day session, build tiered lessons using Escape Rooms, Choose Your Own Adventure formats, and Custom GPTs that adjust tasks to where each student is, without watering down the science. Leave with a repeatable framework for designing inclusive lessons that stretch every learner, from students who need extra scaffolding to those hungry for a challenge.



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

#### **CHOOSE ONE: A-2 or A-3**

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

Science education research shows that students learn best when their classroom experiences are personally meaningful. Explore how phenomena can be delivered in ways that profoundly affect students at personal levels. Discover how to construct experiences that can be more meaningful to students within the structure of your existing learning environment and lessons.

##### **A-3: Planning Engaging Science Units 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 science 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: Unlocking the Potential of Crosscutting Concepts – Liz Mirra**

The crosscutting concepts are the dimension of the *NGSS* that most teachers are least sure about how to explicitly implement in the classroom. Learn what crosscutting concepts are, why they are such a powerful tool for advancing science learning for all students!

*“I appreciated the enthusiasm of all the presenters, as well as the knowledge and resources they all shared.”*

– Kelly Schrantz, Science Teacher



### Lunch break • 12:10 – 1:10 pm

... “I’m amazed at how enthusiastic, creative, and giving the presenters were of their time and resources!” ... 3

## 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.



### Team Discount

#### ONE DAY

One Person: \$325

#### BOTH DAYS

One Person: \$595

Team of 3+: \$565 per person  
when enrolled at the same time

# 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: 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 70-Minute Afternoon Sessions 1:10 – 2:20 pm

#### **CHOOSE ONE: B-2 or B-3**

#### **B-2: That's Debatable: Using Academic Discourse to Drive Your Science Lesson** – Marquita Blades

Scientists and engineers don't just have discourse: they argue. In this session, put the micro-debate strategy to work in your science classroom, a structured, low-prep format that gets students taking positions, defending claims with evidence, and pushing back on each other's reasoning. Leave with a debate structure you can drop into your existing lessons to turn passive listening into active argumentation.

#### **B-3: Harness the Power of Discrepant Event Phenomena in Your 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 70-Minute Afternoon Sessions 2:30 – 3:40 pm

#### **CHOOSE ONE: B-4 or B-5**

#### **B-4: Rotate, Think, Connect: Building Big-Picture Thinking Through Stations** – Marquita Blades

Cramping every big-picture thinking pattern into one lesson rarely works, but a well-designed station rotation can. Use AI to quickly generate and customize station tasks that each spotlight a different pattern, from patterns to cause and effect. Learn a station-design framework that builds authentic inquiry skills one rotation at a time, and leave with reusable AI prompts to build your own sets.

#### **B-5: Delivering More Powerful Learning Experiences in Life Sciences/Biology** – Vince Mancuso

Among the most challenging disciplines to identify phenomena and develop lessons 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.



### Online Learning

BER offers educators a wide range of online courses that are affordable, fun, fast, and convenient. BER is now offering On Demand Video-Based courses. You may earn optional graduate-level credits for most courses. See the catalog of available courses at [www.ber.org/online](http://www.ber.org/online)

# 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: Using Phenomena to Launch and Drive a More Powerful Science Lesson** – Vince Mancuso

Among the most difficult challenges facing science educators is developing a 3-dimensional curriculum. In this interactive session, discover how your existing or required science curriculum can be reshaped into a more powerful science lesson. Learn minor modifications you can make in your current science lessons to easily transform them into a more powerful three-dimensional learning experience!

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

#### **CHOOSE ONE: C-2 or C-3**

#### **C-2: Bump It UP with AI-Powered Resources** – Marquita Blades

Bring a lab or activity you love but suspect could push students further. This session is about raising the rigor of the materials you already have: layering in big-picture thinking patterns and real-world science skills so the same lesson asks more of your students. AI tools are sprinkled in along the way to help you do it faster. It's a hands-on "lesson makeover," and you'll leave with your own material Bumped Up and ready to teach.

#### **C-3: Supporting ALL Students in Scientific Writing** – Liz Mirra

Having students construct scientific explanations (CER Paragraphs) is a key component to aligning instruction with the **NGSS**. For many groups of students, including English language learners and special education students, the writing process can be a challenge. In this session, learn the strategies that can help ALL students be more successful at writing and leave with templates and scaffolds you can use in your classroom tomorrow!

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

#### **CHOOSE ONE: C-4 or C-5**

#### **C-4: Practice Makes Practices: Reinforcing Real-World Science Skills** – Marquita Blades

Thinking and working like a scientist or engineer is a skill, and skills need repetition to stick. This session centers on labs and design challenges as the vehicle for that repetition, giving students repeated, hands-on opportunities to build and apply real-world science skills so they can carry them into any situation.

#### **C-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.

### 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
- Proven step-by-step techniques for planning engaging instructional sequences aligned to the **NGSS**
- How to use AI tools in your planning and teaching
- And much more!

*"The day went really well! I have a lot of new resources to play around with!"*

– Zach Spieler, 7th Grade Science Teacher



### Lunch Break • 11:40 am – 12:40 pm

... "Thanks for the ideas I can use to make some of the make dull moments in science units come to life!" ... 5



# 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

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

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

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

### 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](http://www.ber.org/online)

### 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](http://www.ber.org/onsite) or call 877-857-8964 to speak with an On-Site Training PD Consultant.

#### **D-1: AI Isn't Cheating - It's a Cheat Code: Science Teaching in the Age of Automation** – Marquita Blades

Students are already using AI. The real question is whether we're using it to deepen science teaching or just speed it up. This session tackles that tension directly: design tasks that require students to think *with* AI rather than copy *from* it, and leave with ready-to-use prompts that make AI your planning partner instead of a shortcut.

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

Assessment techniques should complement the style of learning students experience in the classroom, which can present some 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 a key element in advancing science learning for all students. 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!

#### **D-4: AI-Enhanced, Well-Rounded, Problem-Based Science Instruction** – Marquita Blades

Strong problem-solvers are made through practice solving real problems. Experience a full problem-based lesson simulation from the student's seat, then see how AI can enhance each phase: generating authentic problems, differentiating scaffolds, and building well-rounded assessment prompts. Leave with a repeatable model plus the AI prompts to build your own simulations for any topic.

#### **D-5: Guiding Students to Develop More Rigorous and Rewarding Research Questions** – Vince Mancuso

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 help you guide students towards the construction of more rigorous and rewarding research questions.

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

A classroom that is truly aligned to the NGSS looks very different from a 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 and colleagues to continue to improve their practice.

*"An informative conference that has encouraged me to reflect on my practice. I anticipate re-designing some units!"*

– Rebecca Connelly, Chemistry/Science Teacher Leader

*"It was clear that so much time was put in by the presenters, based on all the resources shared. It was nice to collaborate with others and hear different strategies. The handbook is one of the best parts!"*

– Stephanie Amorosana, Earth Science Teacher



# 2027 Conference for SCIENCE Teachers: Practical Strategies to Advance Science Learning (Grades 6-12)

## Registration (NGN7W1)

(Please copy this registration form for additional registrants)

**FEBRUARY 2 and 3, 2027** (Start time: 9 AM Eastern)

- Both days: ☐ February 2 and 3, 2027  
Day One only: ☐ February 2, 2027  
Day Two only: ☐ February 3, 2027

|                                                                         |                               |             |
|-------------------------------------------------------------------------|-------------------------------|-------------|
| FIRST NAME                                                              | M.I.                          | LAST NAME   |
| POSITION, SUBJECT TAUGHT                                                |                               | GRADE LEVEL |
| SCHOOL NAME                                                             |                               |             |
| SCHOOL MAILING ADDRESS                                                  |                               |             |
| CITY & STATE                                                            |                               | ZIP CODE    |
| SCHOOL PHONE NUMBER<br>(      )                                         | HOME PHONE NUMBER<br>(      ) |             |
| <b>Registration confirmations and login details are sent via e-mail</b> |                               |             |
| E-MAIL ADDRESS (REQUIRED FOR EACH REGISTRANT)                           |                               |             |
| HOME MAILING ADDRESS                                                    |                               |             |
| CITY & STATE                                                            |                               | ZIP CODE    |

**PRIORITY ID CODE: ENGN7W1**

## METHOD OF PAYMENT – Group Discount Available

Payment is due prior to the program. No cash, please.

One day only, **\$325**; both days, **\$595**;

**\$565** per person for groups of three or more registering at the same time for both days.

- ☐ A check (payable to **Bureau of Education & Research**) is attached  
☐ A purchase order is attached, P.O. # \_\_\_\_\_  
(Be sure to include priority ID code on the P.O.)

Cards accepted: MasterCard, VISA, Discover, AMEX

Account # \_\_\_\_\_ Exp. Date: \_\_\_\_\_ MO/YR

Billing Zip Code: \_\_\_\_\_ 3 Digit CVV Code: \_\_\_\_\_  
(Found on back of card)

Please print name as it appears on card

## Earn One to Four Graduate Semester Credits



Up to four graduate level professional development credits are available with an additional fee and completion of follow up practicum activities. Details may be found at [www.ber.org/credit](http://www.ber.org/credit)

## Meet Inservice Requirements / Earn State CEUs

Participants can receive a certificate of participation that may be used to verify continuing education hours. In addition, state CEUs are available. For details, visit [www.ber.org/ceus](http://www.ber.org/ceus)

## Registration Fee

The fee for the first or second day registration only is \$325 per person. If a person registers for both days, the registration fee is discounted to \$595 per person; \$565 per person for groups of three or more registering at the same time for both days. **Registration fees are due prior to the program. No cash, please.**

Fee includes conference registration, a certificate of daily attendance and an extensive digital resource handbook with materials for all sessions – even those you don't attend.

**WA residents:** visit [www.dor.wa.gov/TaxRateLookup](http://www.dor.wa.gov/TaxRateLookup) to find your required WA sales tax rate.

## FIVE EASY WAYS TO REGISTER:



**SCAN QR code or visit:**  
[at.ber.org/regNGN](http://at.ber.org/regNGN)



**EMAIL this form to:**  
[register@ber.org](mailto:register@ber.org)



**PHONE toll-free:**  
**1-800-735-3503**  
(Weekdays 5:30 am - 5:00 pm Pacific Time)



**FAX this form to:**  
**1-425-453-1134**



**MAIL this form to:**  
**Bureau of Education & Research**  
3000 Northup Way  
Bellevue, WA 98004

## Session Preferences: Session Numbers Required

| DAY 1                                                                                                                                                                                                   | DAY 2                                                                                                                                                                                               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> <b>One Full Morning Session: A-1</b><br>– OR –<br><input type="checkbox"/> <b>Two 70-Minute Morning Sessions</b><br>A- _____ – and – A- _____<br>(A-2 or A-3) (A-4 or A-5)     | <input type="checkbox"/> <b>One Full Morning Session: C-1</b><br>– OR –<br><input type="checkbox"/> <b>Two 75-Minute Morning Sessions</b><br>C- _____ – and – C- _____<br>(C-2 or C-3) (C-4 or C-5) |
| <input type="checkbox"/> <b>One Full Afternoon Session: B-1</b><br>– OR –<br><input type="checkbox"/> <b>Two 70-Minute Afternoon Sessions</b><br>B- _____ – and – B- _____<br>(B-2 or B-3) (B-4 or B-5) | <input type="checkbox"/> <b>Two 75-Minute Afternoon Sessions</b><br>D- _____ (D-1, D-2 or D-3)<br>– AND –<br>D- _____ (D-4, D-5 or D-6)                                                             |

## Cancellation/Substitutions

100% of your paid registration fee will be refunded if you can't attend and notify us at least 10 days before the conference. Late cancellations made prior to the conference date will be refunded less a \$15 service fee. Substitutions may be made at any time without charge.

## Program Guarantee

We stand behind the high quality of our programs by providing the following unconditional guarantee: If you are not satisfied with this program, we'll give you a 100% refund of your registration fee.

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- *Outstanding Live Online Conference*
- *Choose From 21 Strategy-Packed Sessions*
- *Receive an Extensive Digital Resource Handbook*

NGN7W1



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