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Savvas Science Workshops

Ready to Experience Science? Join Savvas science authors and experts for engaging workshops designed to put science into action. Explore practical strategies, classroom-ready ideas, and fresh ways to help students think, question, investigate, and make sense of the world around them. Come experience what's possible when students take an active role in science.

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Workshops Thursday, November 5

8:00 a.m.-9:00 a.m.
Indiana Convention Center Room 231
Cultural Bridges: One Question That Transforms High School Biology
Presenter: Dr. Almitra L. Berry

Description:
What if one carefully crafted question could transform engagement in your high school biology class, especially for multilingual Black and Brown learners? In this interactive session, participants explore the Cultural Bridges strategy: using a single, intentional question to connect learners' lived experiences to NGSS biology phenomena without lowering rigor. We will examine provided biology lesson excerpts that include subtle deficit or paternalistic "savior" framings and practice rewriting them through Cultural Bridges questions that honor learners' cultural and linguistic wealth. Educators will analyze sample questions, see how they shift discourse and sensemaking, and consider where this move fits naturally in upcoming units. No materials required—examples and templates are provided. Participants are welcome to bring their own for reference and crosswalking.

1:00 p.m.–2:00 p.m.
Indianapolis Marriott Downtown - Lincoln
What's So Phenomenal about Phenomenon?
Presenter: Obie Martin

Description:
Engaging students in real-world science is an important first step in three-dimensional science instruction, but what do you do with phenomena once students are hooked? In this session, we look at the next steps of learning through phenomena, getting students to ask questions, collect evidence, and make meaning using claim, evidence, and reasoning. Attendees will dive into what makes a good phenomenon, eliciting questions from students, and how to structure instruction to guide students through the CER process. They will leave with strategies for creating a true 3D environment and graphic organizers to help them on their way.

2:20 p.m.–3:20 p.m.
Indiana Convention Center Room 243
Reengaging Challenging Learners
Presenter: Ramy Mahmoud

Description:
For learners to feel safe taking risks in an increasingly hostile classroom setting, it's our responsibility to build a foam pit for them; a low-risk environment where they can challenge themselves without the fear of long-term consequences. Attendees will learn why multiple factors have caused a deep slide for many learners into a discomfort with or inability to take risks, collaborate and be challenged. The focus will then be on multiple strategies to rebuild their confidence in risk-taking, including reassessing assessments by changing grading policies, reframing the way teachers praise learners, and gamifying classrooms by implementing the qualities in games that lower the stress and fear for the player. This conversation will be grounded in educational psychology (Dweck, Maslow, Vygotsky), include opportunities for small and whole group discussion, and give specific examples of formative and summative assessments when discussing how to build a foam pit for our learners.

3:40 p.m.-4:40 p.m.
Indiana Convention Center Room 104
Making Chemistry Inquiry Work for Emergent Bilinguals
Presenter: Dr. Christopher Moore

Description:
In this workshop, you will learn how the language and structure of your inquiry activities can inadvertently place roadblocks to learning for emergent bilingual students, and how subtle shifts can dramatically increase this population's engagement and success. This will be an interactive experience where you will be placed in a simulated environment, where you are the language learners trying to navigate group discussion and science inquiry tasks through language barriers. We will work within the context of chemistry, though extensive chemistry knowledge is not necessary. The workshop is founded on research into the integration of Second Language Acquisition Theory and Cognitive Apprenticeship.

8:00 a.m.-9:00 a.m.
Indianapolis Marriott Downtown - Marriott Ballroom 3
Teaching About the Latest Climate Science Using Midwest-Centered Phenomena to Anchor Curricular Storylines
Presenter: Dr. Michael Wysession

Description:
Dr. Michael Wysession, NGSS co-author and geophysics professor, presents engaging place-based Midwest-centered storylines that allow students from all backgrounds to more effectively develop sensemaking of up-to-date, research-driven climate science and how it relates to their home communities. For example, the establishment of many Midwestern states (Indiana-1816; Illinois-1818; Missouri-1821) was directly impacted by global and regional climate changes that included the Little Ice Age (creating a demand for animal furs for clothing) and the 1815 eruption of the Indonesian volcano Tambora, which caused the "year without a summer" famines and drove easterners westward into the Midwest. Examining current local extreme weather events and regional Midwest geology (e.g., glacial deposits and limestone bedrock) can foster student sensemaking of the many different cycles of climate change required by NGSS performance expectations.

8:00 a.m.-9:00 a.m.
Indiana Convention Center Room 232
From Adoption to Impact: Leading HQIM Implementation that Transforms Teaching and Learning
Presenter: Dr. Zipporah Miller

Description:
Adopting High-Quality Instructional Materials (HQIM) is only the first step—successful implementation depends on how well educators are supported in using them in daily instruction. This session highlights curriculum-based professional learning as the bridge between adoption and impact. Participants will explore how to prepare for adoption by identifying district priorities and ensuring the selection process reflects those needs. The session then focuses on designing a rollout strategy that embeds ongoing, curriculum-aligned professional learning. Leaders will learn how to build a coherent system where central office, school leaders, and teachers are aligned in supporting implementation through planning, modeling, observation, and feedback. Moving beyond one-time training, this approach drives fidelity, strengthens instruction, and ensures HQIM is implemented with integrity to improve student outcomes.

8:00 a.m.–9:00 a.m.
Indianapolis Marriott Downtown - Marriott Ballroom 10
CRISPR and the New Science of Genetic Engineering - A Revolution in Human Genetics
Presenter: Dr. Ken Miller

Description:
Although genetic engineering and molecular biology have been part of the biology curriculum for decades, the past several years have seen the introduction of new techniques that dramatically alter the landscape of human biology. These now include the possibility of directly modifying the human genome using CRISPR to treat diseases that previously were beyond the reach of medical science. This possibility has now become reality with the cure of an infant suffering from a fatal genetic disorder by CRISPR-mediated genetic editing. We will examine how these powerful techniques work, suggest ways to incorporate them into the curriculum, and explore the promise and peril that awaits the brave new world of human genetic modification. Participants will be engaged in an interactive discussion about current events in biology and share ideas about how to incorporate phenomena in their classrooms. Participants will receive case studies to bring back to share with their students.

8:00 a.m.–9:00 a.m.
Indiana Convention Center Room 141
Science Is the Future: Why College and Career Readiness Can't Wait
Presenter: Jason Marshall

Description:
With AI, drones, and robotics transforming the world around us, STEM has become essential to every student's future—regardless of their career aspirations. The challenge is helping students connect what they're learning in science to their future goals and recognize STEM as a pathway to postsecondary success, while building the skills emphasized in many Portrait of a Graduate frameworks. Leave with ready-to-use resources and lesson ideas that help students make meaningful connections between today's science classroom and tomorrow's opportunities.

Workshops Friday, November 6

9:20 a.m.–10:20 a.m.
Indiana Convention Center Room 141
Cracking the Code of Complex Biology Texts
Presenter: Ramy Mahmoud

Description:
High school students are often expected to navigate complex scientific texts on their own, but many lack the background knowledge and vocabulary needed to make sense of what they read. In this session, explore how teachers can use hands-on lab experiences and sensemaking activities to grow students' background knowledge and strengthen essential scientific literacy skills before they're introduced to complex biology texts. Plus, get a first-hand look at *Miller & Levine Experience Biology®*, Savvas's newest next-generation high school science program.

10:40 a.m.-11:40 a.m.
Indiana Convention Center Room 104
From Boring to Brilliant: Resuscitating Science Lessons for Grades 6-12
Presenter: Dr. Almitra L. Berry

Description:
What makes a science lesson feel flat, distant, or unintentionally alienating for multilingual Black and Brown learners? In this hands-on session, participants use the Cultural Bridges approach to strengthen engagement and rigor in grades 6–12 science. Working from provided examples drawn from middle grades force and motion, plate tectonics, and high school biology, educators will identify where lesson prompts, phenomena, and examples miss students' lived experiences or rely on deficit assumptions. Participants will then practice revising one key lesson moment—such as the launch, discussion prompt, or sensemaking question—so it better honors students' cultural and linguistic assets while staying aligned to NGSS. This session offers a clear, practical process teachers can use right away with their own materials.

10:40 a.m.–11:40 a.m.
Indiana Convention Center Room 141
Boost Literacy Skills with Science and the Science of Reading
Presenter: Ramy Mahmoud

Description:
The Science of Reading shows us why background knowledge is essential for language comprehension, but how do we provide learners with opportunities to build background knowledge? By addressing how learners often labeled as "poor readers" are simply missing the experiences that give meaning to what they read, this session discusses how teachers can use science experiences to grow students' background knowledge and strengthen essential literacy skills before they're introduced to nonfiction/informational text. Don't miss this opportunity to reframe your approach to reading comprehension—through the lens of science!

1:20 p.m.-2:20 p.m.
Indiana Convention Center Room 237
Cultural Bridges for Middle and High School Science PLCs: A 60-Minute Team Tune UP
Presenter: Dr. Almitra L. Berry

Description:
How can mostly White science departments help multilingual Black and Brown learners in Grades 6-12 see themselves in STEM—without adding one more overwhelming initiative? This session introduces a short, repeatable Cultural Bridges PLC protocol that teams can use to review lessons and materials for bias, deficit-based helping patterns, and microaggressions. Using provided NGSS-aligned lesson excerpts, participants practice noticing problematic language and examples, then rehearse small shifts that better honor learners' cultural and linguistic assets. The focus is on feasible team routines that fit into existing meetings, support honest, productive conversations about race and language in science, and build shared responsibility for more culturally responsive instruction over time.

1:20 p.m.–2:20 p.m.
Indiana Convention Center Room 141
Experience High School Science with Savvas Learning and Flinn Scientific
Presenter: Obie Martin

Description:
Roll up your sleeves and get into the lab! See what high school science looks like when students learn by doing. In this exclusive Savvas and Flinn Scientific collaboration, you'll participate in an interactive workshop and explore how phenomena, investigation, and explanation come together in real instruction. You'll leave with student-ready resources and practical ideas you can use right away, plus dive into *Miller & Levine Experience Biology*, Savvas's newest next-generation high school science program.

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2:40 p.m.-3:40 p.m.
Indiana Convention Center Room 141
Local Phenomena, Lasting Learning: How to Connect Community and Curriculum
Presenter: Monica Morton

Description:
Students are naturally curious about the places where they live. In this session, discover practical strategies for identifying local phenomena and using them to drive standards-based science learning. Through Indiana and other regional examples, participants will learn a repeatable process for connecting local events and issues to core science concepts. Participants will leave with a planning tool and ready-to-use strategies that can be adapted across grade levels.

4:00 p.m.-5:00 p.m.
Indiana Convention Center Room 242
But My Kids Can't Read This!
Presenter: Obie Martin

Description:
What does the Science of Reading have to do with reading and writing science? Quite a bit, actually! In this session, we will explore some of the reasons students struggle to read, write, and comprehend scientific texts. More importantly, we'll dive into some strategies you can use to support students in accessing grade-level texts, including doing more hands-on science! Educators will engage in real practice and take away tangible ideas to bring better literacy practice into any type of science classroom.

4:00 p.m.-5:00 p.m.
Indiana Convention Center Room 241
Rosalind Franklin and DNA: Searching for the Real Story
Presenter: Dr. Ken Miller

Description:
The double helix model of DNA is generally presented as the straightforward product of James Watson and Francis Crick's interpretation of Rosalind Franklin's X-ray diffraction photograph of DNA. However, the actual story of the double helix involves many individuals beyond these three scientists. I will describe how clues to DNA's structure were developed over several decades and how they came together over six remarkable months in 1952 and 1953. I will focus on new research regarding Franklin's role in the discovery and will examine how the race for the double helix fits into our usual understanding of the scientific process. I will also examine how this remarkable story can be brought into the biology classroom in a way that energizes students and provides them with a more realistic understanding of the human side of scientific discovery.

4:00 p.m.-5:00 p.m.
Indianapolis Marriott Downtown-Marriott Ballroom 1
Making Phenomena-Based Science a Success for Educators and Students
Presenter: Dr. Christopher Moore

Description:
High-quality phenomena- and inquiry-based science curricula promise deeper learning, yet many districts discover that adoption alone does not translate into consistent classroom success. In this session, Christopher Moore, Ph.D., author of *Teaching Science Thinking* and a national leader in inquiry-based STEM education and instructional change at scale, explains why curriculum alone rarely changes teaching, why "free" materials often carry hidden implementation costs, and how districts can scale phenomena-based instruction without overwhelming teachers or weakening outcomes. Participants will gain practical classroom strategies that make inquiry workable in real classrooms, while district leaders will learn how to evaluate, support, and scale instructional change in ways that reflect the realities of frontline implementation. We will use a physical science context, but the framework is cross-disciplinary and cross-grade level.

10:20 a.m.-11:20 a.m.
Indiana Convention Center 243
Using Earth and Space Science Phenomena to Anchor Biology/Chemistry/ Physics Storylines Following the NGSS Modified Science Domains High School Curricular Model
Presenter: Dr. Michael Wysession

Description:
Dr. Michael Wysession, NGSS co-author and geophysics professor, will explore fascinating Earth and Space Science (ESS) storylines where geologic events such as volcanoes, earthquakes, and climate change have shaped the rise and fall of civilizations and altered human history. Ideas are presented for incorporating ESS into existing high school Bio/Chem/Phys courses through the use of integrated storylines anchored by engaging ESS phenomena, satisfying NGSS requirements of ESS performance expectations (e.g., HS-ESS3-1) in high schools that follow the NGSS Modified Science Domains model and enhancing student sensemaking of the phenomena. Examples will be given (e.g., Pacific La Niña and the 1918 Spanish Flu; plague epidemics triggered by volcanic eruptions; the 1989 Solar Storm that shut down electrical power grids) for how geological natural disasters have repeatedly impacted cultures, often in inequitable ways, but also driven societal and technological resilience.understanding of the human side of scientific discovery.

10:20 a.m.–11:20 a.m.
Indiana Convention Center Room 241
Biology and Public Health: the Role of Science Educators
Presenter: Dr. Ken Miller

Description:
Public health measures taken during the pandemic years have engendered widespread political and public hostility. This workshop will explore how effective Biology education can promote student understanding of disease mechanisms and of the scientific tools available to safeguard human health. Behind the challenges we face as science educators is a looming opportunity to engage our students in some of the most important questions that affect their lives. Even our youngest students are acutely aware of the ways in which the Covid pandemic has impacted their lives, and this awareness provides a genuine opportunity to engage students with the scientific process. The ways in which diseases such as cholera, smallpox, the flu, and Covid affect the human body will be explored in light of recent research. The science of specific countermeasures for each will be reviewed, including broad spectrum public health measures such as food inspection, sanitation, and vaccination.