Guidance Across All Six Themes

The Signature Themes are intended to organize the conference around **essential conversations, not simply categories of content (strands)**. A proposal does not need to address every question within a theme. Instead, reviewers should consider whether the proposal meaningfully contributes to one or more of the questions the profession is trying to answer together.

When determining the strongest theme fit, consider:

- **What question is this proposal helping us answer?**
- **What is the primary contribution of the session?**
- **What will participants understand, be able to do, or think differently about as a result?**
- **Does the proposal contribute evidence, experience, promising practice, a new perspective, or a potential solution to the conversation?**
- **Which theme best represents the session's primary purpose—not simply a topic, audience, or keyword it mentions?**

Some proposals will reasonably intersect multiple themes. Presenters should select the theme that best represents the central purpose and contribution of the proposed session.

Quick Presenter/Reviewer Test

When two themes appear equally plausible, ask:

If I had to finish the sentence, "The main reason this session belongs in this conversation is because it helps us understand _____," what would fill the blank?

- **a significant problem and how we might solve it → From Challenge to Change**
- **what we have learned about 3D learning and what comes next → 3D Learning**
- **what research/evidence tells us and how it translates to practice → Research to Reality**
- **what is emerging and how we prepare for it → The Next Frontier**
- **how we build people, leadership, professional learning, or systems for improvement → Leading Learning**
- **how connections beyond traditional disciplinary/classroom boundaries make science more meaningful → Beyond the Classroom**

Signature Theme	Description
From Challenge to Change: Solving the Profession's Biggest Problems	Focuses on the most pressing challenges facing science and STEM education and the promising solutions, collaborations, and innovations that can move the profession toward meaningful, lasting change. Questions Driving the Essential Conversation • What challenges can no longer wait? • What solutions are giving us hope? • Where are educators making the biggest difference? • What's getting in our way? • What will it take to create lasting change? • Who else needs to be part of the conversation? • What should we tackle next—together? Reviewer Notes Look for proposals that **start with a meaningful challenge facing science and STEM education and contribute to solving it**, rather than simply describing the problem. Strong proposals may share promising practices, lessons learned, new approaches, collaborative solutions, or evidence of progress. This theme is intentionally broad but should not become a catch-all. The proposal should clearly connect to a significant challenge or opportunity facing the profession and help participants move **from challenge toward change**. **Distinguishing this theme:** Choose **From Challenge to Change** when the primary purpose of the session is addressing or solving a significant problem facing the profession. If the session primarily focuses on developing leaders, strengthening professional learning, building organizational capacity, or creating systems that support and sustain improvement, **Leading Learning** is likely the stronger fit.

3D Learning: Taking Stock. Learning from the Past. Shaping the Next Decade	Reflects on more than a decade of three-dimensional science education to examine what has worked, what we have learned, where implementation remains challenging, and what should shape the next decade. Questions Driving the Essential Conversation • What has endured? • What have we learned? • Where has implementation stalled? • How has the vision evolved? • What comes next? Reviewer Notes Look for proposals that contribute to a **reflective and forward-looking examination of three-dimensional science teaching and learning**. This may include classroom practice, instructional materials, assessment, professional learning, implementation, leadership, systems change, research, or policy. Strong proposals should move beyond simply explaining NGSS or three-dimensional learning. Priority should be given to sessions that offer lessons from implementation, evidence of progress or persistent challenges, evolution in thinking or practice, and implications for what comes next. **Distinguishing this theme:** The defining feature is the session's contribution to what we have learned as well as what comes next in three-dimensional science education. A session may involve research, leadership, or interdisciplinary learning, but if its central contribution is advancing the conversation about the implementation and evolution of 3D learning, it belongs here.
Research to Reality: Turning Evidence into Powerful Science and STEM Learning	Connects research and practice by examining what evidence tells us about effective science and STEM learning, how research is being translated into practice, and what we are learning from implementation. Questions Driving the Essential Conversation • What does the latest research tell us about how students learn science and STEM most effectively? • Which research findings are having the greatest impact on classroom practice? • How do we translate evidence into instruction that works for diverse learners and contexts? • How can classroom educators and researchers learn from one another? • What evidence should guide decisions about curriculum, assessment, and professional learning? • How do we know when an instructional innovation is making a meaningful difference for students? • What questions should research and practice tackle together next? Reviewer Notes Look for proposals that make a **clear connection between evidence and practice**. Research-focused proposals should help practitioners understand why the findings matter and how they might inform practice. Practice-focused proposals should identify the research or evidence informing the approach and, where possible, what evidence demonstrates impact. This theme should elevate the relationship between researchers and practitioners rather than create a separate space solely for traditional research presentations. **Distinguishing this theme:** Research or evidence should be central to the session and not simply cited as background. If the primary contribution is translating, applying, testing, or learning from research and evidence, **Research to Reality** is the strongest fit.
The Next Frontier: Navigating the Future of Science and STEM	Looks ahead to the emerging technologies, scientific developments, workforce needs, societal challenges, and new ideas that are shaping the future of science and STEM education. Questions Driving the Essential Conversation • What emerging trends and innovations will shape the future of science and STEM education? • How do we prepare students for careers and challenges that do not yet exist? • What knowledge, skills, and dispositions will matter most in the future? • How should educators respond to advances in artificial intelligence and other emerging technologies? • How can science and STEM education foster innovation, adaptability, and ethical decision-making? • What new opportunities are emerging through partnerships with industry, higher education, and communities? • How do we prepare ourselves and our students for what comes next? Reviewer Notes Look for proposals that are genuinely **forward-looking** and help educators anticipate, understand, or prepare for change. Topics may include AI, emerging technologies, scientific innovation, workforce trends, future-ready skills, new career pathways, and evolving educational models. Innovation alone is not sufficient. Strong proposals should connect what is emerging to implications for science and STEM teaching, learning, leadership, or student preparation. **Distinguishing this theme:** Choose **The Next Frontier** when the primary contribution is helping participants understand or prepare for what is emerging or coming next. A session simply using technology does not automatically belong here; the future-facing implications should be central to the session.

Leading Learning: Strengthening Science and STEM Together	Explores the leadership, professional learning, organizational capacity, and systems needed to create and sustain high-quality science and STEM education at scale. Questions Driving the Essential Conversation • What does effective leadership for science and STEM education look like today? • How do we build leadership capacity at every level of the education system? • What makes professional learning meaningful, sustained, and impactful? • How do we create the systems and conditions that support lasting instructional improvement? • How can schools, districts, higher education, and professional organizations work together to accelerate change? • What strategies help successful innovations grow from individual classrooms to system-wide practice? • How do we build a profession that continues learning, leading, and improving together? Reviewer Notes Look for proposals focused on **building the capacity of people and systems**, not leadership by title alone. Relevant audiences may include teacher leaders, coaches, principals, district and state leaders, professional learning providers, higher education, associations, and other organizations supporting educators. Strong proposals should help participants understand how to lead, support, sustain, or scale improvement. Topics may include professional learning, instructional leadership, change management, implementation, organizational culture, educator development, collaboration, and systems improvement. **Distinguishing this theme:** Choose **Leading Learning** when the primary contribution is about **how people, leadership, professional learning, organizations, or systems create the conditions for improvement and sustain or scale that improvement**. If the session begins primarily with a major problem facing the profession and focuses on potential solutions to that problem, **From Challenge to Change** is likely the stronger fit.
Beyond the Classroom: Connecting Science to the World Around Us	Explores how science becomes more meaningful when it connects with other disciplines, careers, communities, environments, and authentic experiences beyond traditional classroom boundaries. Questions Driving the Essential Conversation • How do we make science learning more meaningful and relevant for every student? • How can science connect authentically with literacy, mathematics, engineering, technology, computer science, and the arts? • How do community partnerships, outdoor learning, and informal education expand opportunities for students? • How can science learning help students understand and address real-world challenges in their communities? • How do career-connected experiences help students envision their futures in science and STEM? • How can interdisciplinary learning deepen scientific understanding without losing disciplinary integrity? • What learning experiences inspire curiosity, purpose, and lifelong engagement with science? • How do we remove barriers between classrooms and the world students are preparing to lead? Illustrative Areas This theme may include: **Science + Literacy | Science + Engineering | Science + Mathematics | Science + Technology | Science + Computer Science | Science + Career Pathways | Science + Community Partnerships | Science + Outdoor Learning | Science + Environmental Justice | Science + Informal Education | Science + The Arts | Science + Civic Engagement** Reviewer Notes Look for proposals that create **authentic connections between science and the world around students**. The connection should deepen or extend meaningful science/STEM learning rather than simply placing two subjects or experiences side by side. Strong proposals demonstrate why the connection matters, how it enhances student learning or engagement, and how participants can translate the approach into their own context. The illustrative areas above are examples, not an exhaustive list. **Distinguishing this theme:** Choose **Beyond the Classroom** when the primary contribution is the connection itself—between science and another discipline, career, community, setting, or authentic context. For example, a session about emerging STEM careers may fit **The Next Frontier** if its primary purpose is preparing students for future workforce changes, but it may fit **Beyond the Classroom** if its primary purpose is demonstrating how career connections make current science learning more meaningful.
Lesson Showcase	**This strand is exclusively for poster and speed sharing sessions.** An NSTA Lesson Showcase session provides educators with alternative conference platforms to share lesson plans or classroom activities. Sessions in this strand highlight successful strategies and resources, often showcasing the before, during, and after stages of a lesson to give attendees a comprehensive overview. Sessions should include key lesson elements, supportive visuals to enhance understanding, and resources that enable others to implement the lesson or activity themselves.

NSTA is seeking proposals for the following session types:

POSTER SESSIONS

- From Challenge to Change: Solving the Profession's Biggest Problems
- Research to Reality: Turning Evidence into Powerful Science and STEM Learning
- The Next Frontier: Navigating the Future of Science and STEM
- Beyond the Classroom: Connecting Science to the World Around Us
- Lesson Showcase: Walk us through your favorite lesson, unit or classroom resource

SPEED SHARING

- Research to Reality: Turning Evidence into Powerful Science and STEM Learning
- Beyond the Classroom: Connecting Science to the World Around Us
- Lesson Showcase: Walk us through your favorite lesson, unit or classroom resource

30 MINUTE PRESENTATION

- Research to Reality: Turning Evidence into Powerful Science and STEM Learning
- The Next Frontier: Navigating the Future of Science and STEM
- Beyond the Classroom: Connecting Science to the World Around Us

30 MINUTE ROUNDTABLE

- From Challenge to Change: Solving the Profession's Biggest Problems
- Research to Reality: Turning Evidence into Powerful Science and STEM Learning
- Beyond the Classroom: Connecting Science to the World Around Us

60 MINUTE PRESENTATION

- From Challenge to Change: Solving the Profession's Biggest Problems
- 3D Learning: Taking Stock. Learning from the Past. Shaping the Next Decade
- Research to Reality: Turning Evidence into Powerful Science and STEM Learning
- The Next Frontier: Navigating the Future of Science and STEM
- Leading Learning: Strengthening Science and STEM Together
- Beyond the Classroom: Connecting Science to the World Around Us

60 MINUTE WORKSHOP

- 3D Learning: Taking Stock. Learning from the Past. Shaping the Next Decade
- Research to Reality: Turning Evidence into Powerful Science and STEM Learning
- The Next Frontier: Navigating the Future of Science and STEM
- Leading Learning: Strengthening Science and STEM Together
- Beyond the Classroom: Connecting Science to the World Around Us

120 MINUTE PROFESSIONAL LEARNING WORKSHOP

- 3D Learning: Taking Stock. Learning from the Past. Shaping the Next Decade
- Research to Reality: Turning Evidence into Powerful Science and STEM Learning
- The Next Frontier: Navigating the Future of Science and STEM
- Beyond the Classroom: Connecting Science to the World Around Us Leading Learning: Strengthening Science and STEM Together

NSTA Conference Reviewer • PROPOSAL RUBRIC

Directions: Use the rubric below to rate each proposal from 1–3 for each evaluation criterion. Reviewers should evaluate the proposal based on the information provided and should not assume content or quality that is not evident in the submission.

Clarity, coherence, and sufficient detail should be considered across all criteria.

	Rating Scale: 1 is the lowest rating with 3 being the highest			
Criteria	**1 • Does Not Meet Expectations**	**2 • Partially Meets Expectations**	**3 • Strongly Meets Expectations**	**Score**
1. Contribution to the Signature Theme & Essential Conversation **Reviewer Question:** *What question is this proposal helping us answer?*	The proposal has little or no meaningful connection to the selected Signature Theme or its Essential Conversation. The theme appears to have been selected primarily because of a shared topic or keyword.	The proposal relates to the Signature Theme and addresses one or more aspects of the Essential Conversation, but its contribution to the conversation is general, indirect, or not fully developed.	The proposal clearly contributes to one or more of the questions driving the Essential Conversation and offers evidence, experience, promising practice, a new perspective, or a potential solution that will help advance the conversation.	
2. Educational Integrity & Evidence Base **Reviewer Question:** *Is the proposed learning grounded in credible science/STEM education research, evidence, standards, or established professional knowledge appropriate to the topic?*	The proposal provides little indication that its ideas, strategies, or recommendations are grounded in credible research, evidence, standards, or established professional knowledge.	The proposal demonstrates some connection to relevant research, evidence, the Framework, NGSS/ state standards, or other appropriate professional knowledge, but the connection is general or not clearly demonstrated.	The proposal is clearly grounded in relevant research, evidence, standards, or established professional knowledge. Where appropriate, connections to A Framework for K–12 Science Education, NGSS/state standards, and contemporary research are clear and meaningful.	
Reviewer Note: Not every Signature Theme or session type will require the same relationship to the Framework or standards. Evaluate the evidence base most appropriate to the purpose of the session.				
3. Science & STEM Learning for All **Reviewer Question:** *Does the proposal consider how the ideas, practices, or opportunities presented can support meaningful science and STEM learning for all learners?*	The proposal gives little or no consideration to access, participation, relevance, inclusion, or the needs of all learners and communities where those considerations are relevant to the session.	The proposal acknowledges considerations related to access, participation, relevance, inclusion, or all earners and communities, but how these considerations shape the proposed work is not fully evident.	The proposal meaningfully integrates considerations of access, participation, relevance, inclusion, or all learners and communities into the ideas, strategies, examples, or approaches being presented.	
4. Connection to Practice & Application **Reviewer Question:** *Will participants be able to connect this learning to their own practice or context?*	The proposal is primarily informational or conceptual and provides little indication of how participants will connect the content to their practice, role, or context.	The proposal includes examples, strategies, tools, evidence, or opportunities for application, but how participants will use or transfer the learning is not fully clear.	The proposal provides meaningful examples, strategies, tools, evidence, experiences, or opportunities for application that help participants translate learning into their own classrooms, schools, organizations, leadership roles, research, or professional contexts.	
Reviewer Note: Application does not need to mean a classroom lesson. Depending on the Signature Theme and audience, appropriate application may include leadership practices, systems strategies, research findings, professional learning approaches, partnerships, tools, implementation lessons, student work, instructional materials, or other authentic examples.				
5. Value & Relevance to Participants **Reviewer Question:** *Why would someone choose to attend this session, and what will they leave with?*	The relevance or value of the session is unclear, and participants are unlikely to leave with meaningful new understanding, strategies, perspectives, or next steps.	The proposal addresses a relevant need, question, or opportunity and identifies some potential value for participants, but the intended takeaways or impact are general.	The proposal addresses a meaningful need, question, challenge, or opportunity and clearly identifies what participants will understand, be able to do, reconsider, or take back to their own context as a result of participating.	
6. Participant Learning & Engagement **Reviewer Question:** *Is the session designed as a meaningful learning experience rather than simply a presentation of information?*	The proposal provides little indication of how participants will actively engage with the content, presenters, or one another.	The proposal includes some opportunities for participant engagement, discussion, reflection, application, or interaction, but these appear limited or secondary to presentation.	The session intentionally engages participants through meaningful discussion, reflection, application, analysis, problem solving, collaboration, exploration, or other approaches appropriate to the session format and learning goals.	
Additional Resources: Sensemaking • Next Generation Science Standards (NGSS)			**TOTAL SCORE**	

NSTA Conference Reviewer • PROPOSAL RUBRIC

Overall Reviewer Question

Would this session make a meaningful contribution to the conference and to the Essential Conversation in which it is situated?

- ☐ **Yes** — Recommend
- ☐ **Maybe** — Recommend with Consideration
- ☐ **No** — Do Not Recommend

Additional Reviewer Guidance

Review proposals based on what is **evident in the submission**, not on what you believe the presenter may intend to include.

- Strong proposals should collectively demonstrate:
- A meaningful contribution to an Essential Conversation.
- Educational integrity and an appropriate evidence base.
- Attention to meaningful science and STEM learning for all.
- Connection to practice and application.
- Clear value for participants.
- An engaging learning experience appropriate to the session format.

The goal is not simply to identify sessions that fit a topic. It is to curate a conference program that helps the science and STEM education community **answer important questions together**.