STEM is much more than an acronym for the four subject areas of science, technology, engineering, and math. STEM education is a transformative approach to traditional teaching and learning that fosters creativity and innovative thinking in all students. An integrated STEM approach teaches students not to think in a silo, but shows them that problem-solving skills and critical thinking are necessary across all disciplines. Through STEM integration we are developing a future-ready workforce able to compete and succeed in the current and emerging global economy.

What is the Tennessee STEM Innovation Network?
In 2010, the Tennessee Department of Education partnered with Battelle to launch the Tennessee STEM Innovation Network. Focusing on “kindergarten to jobs,” the Network is developing high-quality STEM programming to further ensure Tennessee students are prepared for success in college and career and ready for the future of their choosing.

TSIN supports the growth and quality of STEM education in Tennessee by
• Connecting innovative schools, teachers, and administrators to one another and national resources
• Supporting schools and communities that want to create innovative schools and programs
• Building community awareness and driving local school to industry partnerships

Learn about all of our programs on our website at www.tsin.org and attend our informational learning session Wednesday, May 15 at 10:30 am in the Jackson room!
STEM SCHOOL DESIGNATION

Tennessee STEM School Designation was developed to provide a “roadmap” for schools to successfully implement a STEM education plan at the local level. The tools and resources created define the attributes necessary for a school to create a comprehensive STEM learning environment for its students. The 11 schools receiving Tennessee STEM School Designation completed comprehensive digital portfolios that demonstrated their excellence in STEM education, including student project-based learning, community partnerships, and support for teacher professional learning. Each school will hold their Designation status until 2024.

2019 STEM DESIGNATED SCHOOLS
CARMEL ELEMENTARY SCHOOL - CLARKSVILLE-MONTGOMERY COUNTY
CHARLESTON ELEMENTARY SCHOOL - BRADLEY COUNTY
CROFT MIDDLE DESIGN CENTER - METRO NASHVILLE PUBLIC SCHOOLS
DISCOVERY SCHOOL - MURFREESBORO CITY SCHOOLS
ELK VALLEY ELEMENTARY SCHOOL - CAMPBELL COUNTY
FARRAGUT HIGH SCHOOL - KNOX COUNTY
HICKERSON ELEMENTARY SCHOOL - COFFEE COUNTY
OLIVER SPRINGS HIGH SCHOOL - ROANE COUNTY
PARK VIEW ELEMENTARY SCHOOL - BRADLEY COUNTY
PRESCOTT SOUTH MIDDLE SCHOOL - PUTNAM COUNTY
STATION CAMP ELEMENTARY SCHOOL - SUMNER COUNTY

All K–12 schools serving students in Tennessee are eligible. Visit www.tsin.org/designation to learn more.

STEM IS IN FOCUS

2018 2019

SPEAKERS

Steve Spangler
Science Author, Teacher, and Toy Designer
Steve is the science teacher you always wanted to have in school. Things just happen to fizz, pop, smoke and explode, and before you know it, you're a part of his learning experience. His passion is to find the most creative ways to make learning fun. His methods might be unconventional, but the goal is to turn ordinary science experiments into unforgettable learning experiences. And when it happens, it's called the Spangler Effect.

He earned his credentials as a science author, teacher, professional speaker, toy designer and an Emmy award-winning television personality. But, he remains a big kid at heart as he teaches people how to launch potatoes, whip up the perfect batch of slime and turn an ordinary bottle of soda into an erupting geyser of fun. His best-selling science kits and educational toys help to get kids excited about science at home, and his recent appearances on a number of network television shows, including The Ellen DeGeneres Show, demonstrate his true passion for making learning fun.

Dr. Penny Schwinn
Tennessee Commissioner of Education
Dr. Schwinn is committed to building on Tennessee’s momentum over the last decade, and plans to continue to accelerate growth through excellence in achievement, empowerment of students and teachers, and engagement of all stakeholders. Coming from a family of educators and committed to increasing access to an excellent education for all children, Commissioner Schwinn began her work as a high school history and economics teacher in Baltimore. Her early career also includes experience as a new teacher coach in south Los Angeles and time in the private sector, where she supervised work in operations, marketing and information management.

Prior to joining the Tennessee Department of Education, Commissioner Schwinn served as the Chief Deputy Commissioner of Academics at the Texas Education Agency, where she oversaw the Office of Academics and was responsible for the following agency departments: School Programs (including Early Childhood Education, Reading, and College, Career, and Military Preparation); the Deputy Commissioner of Special Populations and Monitoring (including Special Education); the Deputy Commissioner of Standards and Engagement (including Curriculum, Digital Learning, Assessment, and Performance Reporting), Research and Analysis; and Special Projects.
## BREAKOUT SESSIONS 1 - 11:00 AM - 11:45 AM

<table>
<thead>
<tr>
<th>ROOM</th>
<th>SESSION TITLE</th>
<th>PRESENTER(S)</th>
<th>AUDIENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chattanooga</td>
<td>What is the State of STEM in America? Defining the Challenges and Opportunities</td>
<td>ERIN WHITE, Senior Director, Product Development &amp; Research, Tennessee Science Partnership, Knoxville, TN</td>
<td>All Educators</td>
</tr>
<tr>
<td>Stones River</td>
<td>Back to your Roots: Making Learning Relevant with Community Partners</td>
<td>ERIN WHITE, Senior Director, Product Development &amp; Research, Tennessee Science Partnership, Knoxville, TN, KELLY MOORE, Associate Professor, Tennessee Technological University, Cookeville</td>
<td>All Educators</td>
</tr>
<tr>
<td>Capitol I</td>
<td>Argument Driven Inquiry: Linking Three-Dimensional Instruction and STEM</td>
<td>LESLIE SUTHERS, Associate Professor, Tennessee Technological University, Cookeville, &amp; KELLY MOORE, Associate Professor, Tennessee Technological University, Cookeville</td>
<td>Elementary Educators</td>
</tr>
<tr>
<td>Capitol II</td>
<td>Building Collaborations to Broaden Participation in STEM Across Tennessee: Resources, Opportunities &amp; Partnerships</td>
<td>DALE PREWITT, Tennessee Rural &amp; Community Development, Discovery Center at Murfreesboro, &amp; KELLY MOORE, Associate Professor, Tennessee Technological University, Cookeville</td>
<td>All Educators</td>
</tr>
<tr>
<td>Nashville Ballroom</td>
<td>Shared Culture: Making Connections &amp; Building a School Family within an Innovative Learning Environment</td>
<td>SARA LEPHOURD, Digital Arts instructor, DigiDiG, Kingsport, &amp; DR. BRETT LEPHOURD, Chief Academic Officer, Tennessee Technological University, Cookeville</td>
<td>All Educators</td>
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</tbody>
</table>
WHAT IS THE STATE OF STEM IN AMERICA? DEFINING THE CHALLENGES AND OPPORTUNITIES

The presentation will establish a common language for those working in any sector that touches STEM talent pathways and will support those seeking to build connections across this complex system. This session will illustrate the current STEM landscape including the organizations, systems, and influences that comprise and shape it. It will in turn describe the STEM talent gap, putting forth research that shows there are five critical gaps in the STEM workforce and the overall workforce of the future.

INNOVATIVE LEARNING ENVIRONMENT

Building Collaborations to Broader Participation in STEM Across Tennessee: Resources, Opportunities & Partnerships

Why reinvent the wheel? Tennessee is rich with STEM resources & expertise. Come learn how to access these through the TN Girls Collaborative, part of the National Girls Collaborative Project (NGCP). Engage in hands-on activities designed to facilitate collaboration, start conversations, and initiate actions that can broaden participation in STEM. Learn how to access free resources and professional learning opportunities.

SHARED CULTURE: MAKING CONNECTIONS & BUILDING A SCHOOL FAMILY WITHIN AN INNOVATIVE LEARNING ENVIRONMENT

Not all schools are created equal; despite this, all schools hold the potential to reach both students and staff - professionally, developmentally, and definitely socially. The session will dive into culture-builders, including practices such as the shared-leadership model utilized at D-B Excel (a Tennessee Designated STEM School), the student advisory council, course design, modifications to the physical classroom, and student ownership of a school identity.

INVITATION ONLY: LEADERS OF TN STEM DESIGNATED SCHOOLS

Invitation only: Leaders of the Tennessee STEM Designated Schools.

FAMILY FUN THROUGH STEM: PLANNING AN ENGAGING COMMUNITY OUTREACH EVENT

Engaging STEM experiences do not have to be limited to the school day. We will explore the process of designing and implementing interactive and fun stations for family outreach events. Come ready to roll up your sleeves to work on planning a STEM event for your organization!

STEM INTEGRATION THROUGH STUDENT PROGRAMMING: THE CREATION OF A STEM CLUB

How do you incorporate the many possibilities of STEM studies into the regular high school curriculum? Job opportunities, advanced academics, and places to explore and engage with STEM are all possible with the creation of a high school STEM club. Learn how one student’s desire to learn about his love for math and one teacher’s desire to introduce real-world, hands-on learning for his students led to the creation of a successful STEM Club to promote awareness of and engagement with advanced and active STEM learning for high school students!

CHALLENGE THE STATUS QUO: A NEW APPROACH TO PROFESSIONAL DEVELOPMENT

In this session participants will learn how Sumner County created a STEM Challenge Day for teachers to energize educators and encourage a STEM mindset in their classroom. Attendees can expect to participate in replicable STEM challenges to use at their own professional development sessions.

MANAGING MINDSETS: CREATING A CULTURE OF RISK

When school leaders are navigating change, 3 types of teachers often emerge within the school culture: Risk-averse teachers, risk-neutral teachers, and risk-loving teachers. This session will equip school leaders with strategies to help each type of teacher embrace risk and stay agile during the change process. Participants will interact in small and whole group discussions so that strategies can be applied to unique contextual settings, which will allow participants to create immediate action plans to help all teachers embrace risk and stay agile during the change process.
THE SPARK THAT STARTED THE FIRE: SUPPORTING STEM CULTURE THROUGH CONNECTIONS

Jon Barich
Principal, Overall Creek Elementary School
Cherry Ross
Academic Coach, Overall Creek Elementary School
Lea Barich
Gifted Specialist, Overall Creek Elementary School, Murfreesboro

Audience: All Educators
Room: Jackson

From the ground up, building the right dream team is critical for establishing a climate and culture that supports STEAM education. In this session, walk through the steps of creating a strong foundation for reaching your goals and experience how to explore connections for full integration. Living the dream can happen with a little fanning of the flame. It only takes a spark. Participants in this session will begin to develop the first steps toward creating a STEAM culture or find new ways to refine current culture with six key take-aways. Participants will also experience a process used for finding interdisciplinary connections for planning Project Based Learning units.

FINDING YOUR FUTURE: ENGAGING MIDDLE SCHOOL STUDENTS IN STEM CAREER EXPLORATION

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Alana Teller
School Counselor, EVRPI, Nashville
Mike Oliver
Guidance Director, EVRPI, Nashville

Room: Capitol I

STEM is everywhere—from businesses and organizations to the products that power our daily lives. That's why it's important to build the first fully STEM literate generation. The Tennessee STEM Innovation Network has partnered with Everfi to provide Endeavor, a unique online STEM career exploration program, available for free to ALL middle school students in the state. Endeavor is a first-of-its-kind interactive program designed for middle school students built to empower learners with the knowledge they need to build their career pathways. Learners in Endeavor: STEM Career Exploration engage with interactive content that reinforces key STEM skills while discovering some of the exciting STEM opportunities that await.

ROADMAP TO THE TN STEM SCHOOL DESIGNATION

Deborah Knoll
Director of Student Success, TN Department of Education
Evan Carver
Director of Education Strategy & Communications, Battelle Education/TSI;

Audience: All Educators
Room: Nashville Ballroom

Tennessee STEM School Designation was developed to provide a "roadmap" for schools successfully implement a STEM education plan at the local level. The tools and resources created define the attributes necessary for a school to create a comprehensive STEM learning environment for all students. This session will take a deep dive into the STEM School Designation Process and explore the key priority areas within the STEM Designation Rubric in detail.

BRIDGING THE GAP BETWEEN CTE AND STEM

Mary Coulter
Teacher, Midway High School, Kingston
Whitney Moore
Teacher, Midway High School, Kingston

Audience: High School Educators
Room: Chattanooga

This session will prepare educators to infuse STEM concepts in traditional CTE courses, including Business, Agriscience, Family Consumer Sciences, and Manufacturing fields. Attendees will have the opportunity to see various cross-curricular lab activities that are cost effective and high impact. Lesson plans with appropriate standards will be shared.

GETTING STUDENTS FUTURE READY

Molly Blankenship
Vice President, Talent Initiatives, Chattanooga Area Chamber of Commerce
Bake Freeman
Director, Future Ready Institutes, Hamilton County Department of Education

Audience: All Educators
Room: Jackson

Future Ready Institutes in Hamilton County provide students with a unique learning environment that tailor their education to career themed subjects. Partnered with area businesses and the Chamber, the institutes provide opportunities for college credits or forms of industry-based certifications and real world experiences.

MOTIVATING THE UNMOTIVATED CHILD

Angela Bilby
Special Education Behavior Teacher, Preacott South Elementary School
Amber Tatum
Special Education Behavior Teacher, Preacott South Elementary School, Cookeville

Audience: Elementary Educators
Room: Stones River

The session will demonstrate ideas to motivate the unmotivated child to learn new skills and to apply to future learning through STEM. Participants will gain ways to scaffold work for the unmotivated child and to close the gaps for students with differentiated learning needs.

LOVING THE NIGHT SKY ACROSS THE CURRICULUM (FOR FREE!)

Billy Hix
Professor Emeritus, Mlatest College, TSIN

Audience: All Educators
Room: Capitol II

It's clear that students love space! Leverage that excitement to make your classroom “out of this world.” How can you create lessons that impact your entire curriculum? Are you worried that your back yard is “what’s up” is not strong enough to do a great lesson? Well, worry no longer! Participants will be right in the middle of the night sky and travel among the planets and see strategies that can be applied in your classroom. You will walk away with tools that your students are free.

STEMULATING SUCCESS THROUGH COMMUNITY PARTNERSHIPS

Sarah Bordenstein
I-STEM Coordinator, Metro Nashville Public Schools, Nashville
Jeanie Whitlock
I-STEM Instructional Coach, Metro Nashville Public Schools, Nashville

Room: Stones River

This session will showcase a rural community’s efforts to develop strong community partnerships and demonstrate that value to their students, parents, and community leaders. Participants will explore creative ways to involve and engage community partners and examine practical strategies that will sustain and build upon those relationships.

COMMUNITY PARTNERSHIPS

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TN AWARENESS

UnderRepresented

Groups in STEM

Community

Partnerships

School

Culture

Innovative Instructional Strategies

STEM Career Awareness

TUESDAY, MAY 14

TUESDAY, MAY 8

BREAKOUT SESSIONS 4 - 3:00 PM

BREAKOUT SESSIONS 3 - 1:45 PM

INSPIRING STEM CAREERS THROUGH THE SCIENCE STANDARDS

Andrew Berry
i3 STEM Instructional Coach, Metro Nashville Public Schools, Nashville
April Lamb
District STEM Coach, Knox County Schools, Knoxville

Audience: Elementary Educators
Room: Nashville Ballroom

Our new science standards are perfect for real world discussions and STEM career connections. In this session, you will explore each grade level K-5 and the STEM career focus that pairs with the science standards. The session will show you a STEM career science standards correlation guide and demonstrate how to use the SE model to plan and engage your young learners in career awareness all while teaching science standards.

THE WOLBACHIA PROJECT: STUDENT-BASED EXPLORATION OF A GREAT PANDEMIC

Sarah Bordenstein
Seth Bordenstein
Edward van Opstal
Sarah Bordenstein
Seth Bordenstein
Edward van Opstal

Room: Stones River

Did you know that a single bacterial infection can turn genetic males into females, allow females to reproduce asexually, selectively kill males, and generate reproductive incompatibilities within species? This same organism may also hold the key to our fight against deadly diseases such as dengue fever, hikungunya, and Zika. Join us to learn how TN students can join researchers at Vanderbilt – and across the world – to study the most widespread bacterial infection in animals, Wolbachia. Learn how to easily incorporate microbiology, molecular biology, and bioinformatics into your classroom.
**SCHEDULE & BREAKOUTS**

**WEDNESDAY MAY 15**

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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</thead>
<tbody>
<tr>
<td>8:00 AM - 9:00 AM</td>
<td>Registration &amp; Breakfast</td>
</tr>
<tr>
<td>9:00 AM - 9:15 AM</td>
<td>Welcome &amp; Morning Remarks in the Nashville Ballroom</td>
</tr>
<tr>
<td>9:15 AM - 10:00 AM</td>
<td>State Senator Bob Watson, Tennessee General Assembly, &amp; Dr. Penny Schwinn, Tennessee Commissioner of Education</td>
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<tr>
<td>10:00 AM - 10:20 AM</td>
<td>TN Designated STEM School Awards</td>
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<tr>
<td>10:20 AM - 10:30 AM</td>
<td>Break</td>
</tr>
<tr>
<td>10:30 AM - 11:15 AM</td>
<td>Breakout Sessions 5</td>
</tr>
<tr>
<td>11:30 AM - 12:15 PM</td>
<td>Lunch in the Nashville Ballroom</td>
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<tr>
<td>12:15 PM - 1:15 PM</td>
<td>Breakout Sessions 6</td>
</tr>
<tr>
<td>10:30 PM - 11:15 PM</td>
<td>Breakout Sessions 7</td>
</tr>
<tr>
<td>1:15 PM - 2:00 PM</td>
<td>Closing Remarks &amp; Door Prizes in the Nashville Ballroom (Must be present to win.)</td>
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<tr>
<td>2:00 PM - 3:30 PM</td>
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**BREAKOUT SESSIONS 5 - 10:30 AM - 11:15 AM**

<table>
<thead>
<tr>
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<th>Session Title</th>
<th>Presenter(s)</th>
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<tbody>
<tr>
<td>Jackson</td>
<td>Get Involved! Discover the TSIN Programs Offered for TN Educators</td>
<td>BRANDI STRECKER, Director of Education Strategies and Outreach, Battelle Education/TSIN &amp; EVAN CURRAN, Manager, Strategic Partnerships &amp; Communications, Battelle Education/TSIN</td>
<td>All Educators</td>
</tr>
<tr>
<td>Chattanooga</td>
<td>The Digital Revolution and its Impacts on the Future of Work</td>
<td>CHRIS MILLIGAN, Xanadu, Victor-Phoenix Plant Senior Manager of Maintenance</td>
<td>All Educators</td>
</tr>
<tr>
<td>Stones River</td>
<td>Problem Based Learning with the Tennessee Valley Authority</td>
<td>BRITTANY CROUCH, Teacher, East Darwin Elementary, Ashland City &amp; SMITHT WONG, Teacher, East Darwin Elementary, Ashland City</td>
<td>All Educators</td>
</tr>
<tr>
<td>Capitol I</td>
<td>Competency-Based Education: New Ways to Engage Students</td>
<td>DR. KIMBERLY STEPHENSON, Battelle Education, West Virginia University &amp; GRETHA BROWN, Project Manager, Battelle Education/TSIN</td>
<td>All Educators</td>
</tr>
<tr>
<td>Capitol II</td>
<td>Race to the Finish: Energizing Students through Electric Car Design</td>
<td>CHRIS BEARD, RPE, East Elementary, Gallatin Middle School, Chattanooga &amp; DAVIN HUBBETT, Director of Development, Gallatin Middle School Chattanooga</td>
<td>3rd - 8th Grade Educators</td>
</tr>
<tr>
<td>Nashville Ballroom</td>
<td>Assess, Adjust, Accelerate: Refining Your Schools’ STEM Practices</td>
<td>CATHERINE JONES, Principal, Prescott South Elementary School, Cookeville</td>
<td>Elementary &amp; Middle Educators</td>
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**BREAKOUT SESSIONS 6 - 11:30 AM - 12:15 PM**

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<tr>
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<th>Session Title</th>
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</thead>
<tbody>
<tr>
<td>Memphis</td>
<td>Northeast Tennessee STEM Innovation Hub</td>
<td>JOHNSON CITY</td>
<td>TN Educators</td>
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<tr>
<td>Jackson</td>
<td>Northwest Tennessee STEM Innovation Hub</td>
<td>DYERSBURG</td>
<td>TN Educators</td>
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<tr>
<td>Chattanooga</td>
<td>PEF Innovation Hub</td>
<td>CHATTANOOGA</td>
<td>TN Educators</td>
</tr>
<tr>
<td>Stones River</td>
<td>East Tennessee STEM Innovation Hub</td>
<td>KNOXVILLE</td>
<td>TN Educators</td>
</tr>
<tr>
<td>Capitol I</td>
<td>Upper Cumberland Rural STEM Initiative</td>
<td>COOKEVILLE</td>
<td>TN Educators</td>
</tr>
<tr>
<td>Capitol II</td>
<td>West Tennessee STEM Innovation Hub</td>
<td>MURFREESBORO</td>
<td>TN Educators</td>
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<tr>
<td>Nashville Ballroom</td>
<td>Middle Tennessee STEM Innovation Hub</td>
<td>MURFREESBORO</td>
<td>TN Educators</td>
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<tr>
<td>Cumberland Ballroom</td>
<td>Study Design Challenge Projects</td>
<td>Presented by Students</td>
<td>All Educators</td>
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**BREAKOUT SESSIONS 7 - 1:15 PM - 2:00 PM**

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</thead>
<tbody>
<tr>
<td>Jackson</td>
<td>Using Learning Blade to Support TN’s New Computer Science Standards for Middle School</td>
<td>JOSHUA SHREEDMAN, Vice President, Learning Blade</td>
<td>Middle School Educators</td>
</tr>
<tr>
<td>Chattanooga</td>
<td>Naturally Curious: Engaging Students through Local Natural Resources</td>
<td>KENT SHEPHERD, Biological Teacher, Jackson County High School, Jackson County, &amp; MARK THURMAN, Regional Fisheries Manager, Tennessee Wildlife Resources Agency</td>
<td>All Educators</td>
</tr>
<tr>
<td>Stones River</td>
<td>Get Real! Leveraging Geospatial Technology (GPS/GIS) to Offer Authentic STEM Instruction</td>
<td>PATTY STONER-BARNES, Senior Lecturer, University of Tennessee - Knoxville, Knoxville</td>
<td>All Educators</td>
</tr>
<tr>
<td>Capitol I</td>
<td>Breaking the Barriers: Supporting English Learners through Engineering Experiences</td>
<td>EMILY WONG, Ashley Bledsoe, Battelle Education, Nashville</td>
<td>All Educators</td>
</tr>
<tr>
<td>Capitol II</td>
<td>Beyond the Four Walls: Providing Meaningful Environmental Education Experiences</td>
<td>KENT SHEPHERD, Ashley Bledsoe, Battelle Education, Nashville</td>
<td>All Educators</td>
</tr>
<tr>
<td>Nashville Ballroom</td>
<td>Getting in Tune with Project Planning</td>
<td>JULIA COATS, STEM Educator, Tennessee Rural Schools, Knoxville</td>
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**UNDERREPRESENTED GROUPS IN STEM**

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<td>Beyond the Four Walls: Providing Meaningful Environmental Education Experiences</td>
<td>JESSA SLOBERG, Community Engagement Coordinator, Great Smoky Mountains Institute at Tremont, Tremonti, &amp; NIKI BIANCHI, Community Engagement Coordinator, Great Smoky Mountains Institute at Tremont, Tremonti</td>
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<tr>
<td>Chattanooga</td>
<td>Building Bridges: Engaging Community to Support STEM Learning</td>
<td>KENT SHEPHERD, Biological Teacher, Jackson County High School, Jackson County, &amp; MARK THURMAN, Regional Fisheries Manager, Tennessee Wildlife Resources Agency</td>
<td>All Educators</td>
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<td>Stones River</td>
<td>Get Involved in STEM: Engaging Community to Support STEM Learning</td>
<td>KENT SHEPHERD, Biological Teacher, Jackson County High School, Jackson County, &amp; MARK THURMAN, Regional Fisheries Manager, Tennessee Wildlife Resources Agency</td>
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<td>Capitol I</td>
<td>Connecting Community: Engaging Community to Support STEM Learning</td>
<td>KENT SHEPHERD, Biological Teacher, Jackson County High School, Jackson County, &amp; MARK THURMAN, Regional Fisheries Manager, Tennessee Wildlife Resources Agency</td>
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<td>Capitol II</td>
<td>Learning to Lead: Engaging Community to Support STEM Leadership</td>
<td>KENT SHEPHERD, Biological Teacher, Jackson County High School, Jackson County, &amp; MARK THURMAN, Regional Fisheries Manager, Tennessee Wildlife Resources Agency</td>
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**SCHOOL CULTURE**

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**INNOVATIVE INSTRUCTIONAL STRATEGIES**

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**STEM CAREER AWARENESS**

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**OTHER**
**GET INVOLVED: DISCOVER THE TSIN PROGRAMS OFFERED FOR TN EDUCATORS**

Brandi Strecker
Director of Education Strategy & Outreach, Battelle Education/TSIN

Evan Curran
Manager, Strategic Partnerships & Communications, Battelle Education/TSIN

Audience: All Educators
Room: Jackson

**THE DIGITAL REVOLUTION AND ITS IMPACTS ON THE FUTURE OF WORK**

Chris Milligan
Vice President, Digital Transformation
Evantra, Battelle Education/TSIN

Audience: All Educators
Room: Capitol I

**PROBLEM BASED LEARNING WITH THE TENNESSEE VALLEY AUTHORITY**

Brittany Crouch
Teacher, East Chatham Elementary, Ashland City

Audience: All Educators
Room: Stones River

**COMPETENCY-BASED EDUCATION: NEW WAYS TO ENGAGE STUDENTS**

Dr. Kimberly Estep
Chancellor, WGU Tennessee

Audience: All Educators
Room: Capitol I

**RACE TO THE FINISH: ENERGIZING STUDENTS THROUGH ELECTRIC CAR DESIGN**

Chris Seaward
YIM E Liath Specialist, Dalewood Middle School, Chattanooga

Audience: 3rd - 12th Grade Educators
Room: Capitol II

**ASSESS, ADJUST, ACCELERATE: REFINING YOUR SCHOOL’S STEM**

Catherine Jones
Principal, Prescott South Elementary School, Cookeville

Audience: Elementary & Middle School
Room: Nashville Ballroom

**INTERESTED IN BECOMING MORE INVOLVED WITH THE NETWORK?**

This session provides an exclusive opportunity to connect with your local regional STEM hub. Each regional hub is unique and was created through local partnerships to build upon local initiatives. Visit the session for the regional hub that services your area to learn more about programs offered and opportunities to connect with your local hub and STEM leaders.

**NOT FROM TENNESSEE?**

Please visit the Cumberland Ballroom and take a look at some of the student projects created during our Statewide Student Design Challenge. This year’s theme is “Clean Energy Solutions” and was created in partnership with the Tennessee Valley Authority and the Tennessee Department of Environment and Conservation.
BREAKOUT SESSIONS 7 - 115 PM

UNDER-REPRESENTED GROUPS IN STEM

COMMUNITY PARTNERSHIPS

SCHOOL CULTURE

INNOVATIVE INSTRUCTIONAL STRATEGIES

STEM CAREER AWARENESS

OTHER

USING LEARNING BLADE TO SUPPORT TN’S NEW COMPUTER SCIENCE STANDARDS FOR MIDDLE SCHOOL

Joshua Sneideman
Vice President, Learning Blade

Audience: Middle School Educators
Room: Jackson

Learn about how Learning Blade’s online STEM career awareness system supports and is aligned with the state’s new computer science standards. Learning Blade has been used extensively in other states to support computer science standards including topics such as computing essentials and cybersecurity. Come learn how you can use Learning Blade to introduce students to careers in computer science while covering the new state standards. We will share the newest addition to our toolset, DESIGNER THINKING exercises, where students practice the 21st-century skills of collaboration, communication, creativity and problem solving to design solutions to interesting problems.

NATURALLY CURIOUS: ENGAGING STUDENTS THROUGH LOCAL NATURAL RESOURCES

Every community has natural resources to support STEM lessons. To help connect students with their local environment, Jackson High School students had the opportunity to go snorkeling in a local stream. Join us to learn strategies to asset map your community and develop meaningful STEM projects to support these local endeavors.

GET REAL! LEVERAGING GEOSPATIAL TECHNOLOGY (GPS/GIS) TO OFFER AUTHENTIC STEM INSTRUCTION

Join us to learn about the geospatial technologies we use in everyday life and how they can be used in your classroom to enhance STEM lessons. Students can use geospatial data to create maps and conduct analyses to answer real world, authentic, relevant questions. Don’t miss this opportunity to learn how to access and use the leading, global, geospatial technology industry’s (Esri) FREE online platform for K-12 teachers and students!

BREAKING THE BARRIERS: SUPPORTING ENGLISH LEARNERS THROUGH ENGINEERING EXPERIENCES

In today’s elementary setting, students are expected to grapple with science content and concepts by applying multimodal practices such as asking questions, developing models, planning investigations, interpreting data, and engaging in argument from evidence. Educators require a diverse portfolio of instructional practices based on research about how children learn. This hands-on workshop, participants will work in teams to engage in an engineering design challenge centered on solving a real-world problem.

BEYOND THE FOUR WALLS: PROVIDING MEANINGFUL ENVIRONMENTAL EDUCATION EXPERIENCES

In this session, participants will gain implementation strategies and framework for student holistic growth through outdoor learning. You will have the opportunity to practice using these new tools as you brainstorm ways that you and your students can use your schoolyard or a learning laboratory. You will leave this session with the framework for a standards-based, hands-on lesson plan, designed for your students. In this session, participants will be encouraged to think critically about their lesson planning process, and to consider moving their students’ learning beyond the four walls of their classroom.

GETTING IN TUNE WITH PROJECT PLANNING

Leave our session whistling a happy tune! This session will focus on utilizing the tuning protocol to tune teachers’ lessons, student products, and events. Participants will have the opportunity to actively participate in the tuning process allowing them to leave the session with the experience and skill set to facilitate a tuning session with their peers or students.

TRENDING TOPICS 2019

STEM EXCELLENCE AWARDS 2019

STEM INNOVATION

STEM ADVOCATE

STEM LEADERSHIP

STEM CULTURE

STEM CAREER AWARENESS

STEM INNOVATION

STEM ADVOCATE

STEM LEADERSHIP

STEM CULTURE

STEM CAREER AWARENESS
The Tennessee Valley Authority has been a valued partner of the TSIN since 2012 and has been giving back to the community since it was founded in 1933. This year the TVA, in partnership with Bicentennial Volunteers Incorporated (a TVA retiree organization), donated $600,000 to STEM throughout the Tennessee Valley.

2019 STEM Excellence Award Winner for STEM Corporate Champion: TVA and BVI

Thank you TVA and BVI for being our STEM Superheroes!
STEM IS MY SUPERPOWER!