

# Session Descriptions

Friday

## Vision for STEM Instruction--Panel Discussion

**Megan Schrauben, Michigan Department of Education; Jill Griffin, Michigan Department of Education**

*Primary Subject: AS, IN*  
*Interest Level: EE, LE, MS, HS, CO*  
*Location: Crystal Ballroom*

MDE has a vision for STEM instruction, does it fit with what practitioners and researchers in the field say? Come listen and ask questions of the players in the field.

## MSS - Taught Outdoors

**Jody Harrington, E.L. Johnson Nature Center, Bloomfield Hills Schools**

*Primary Subject: EN*  
*Interest Level: EE, LE*  
*Location: Jade*

Teach the MSS Disciplinary Core Ideas outdoors at a garden. Involve students in hands-on learning by connecting Science Practices and Crosscutting Concepts using the best Environmental Activities aligned by grade.

## Building A Nature Rich Education

**Ted Malefy, Outdoor Discovery Center/ STREAM School; Bob Wandel, Outdoor Discovery Center**

*Primary Subject: GS, EN*  
*Interest Level: EE, LE, MS, HS*  
*Location: Topaz*

Many of our students are missing a relationship with their nature world. How might we leverage a fresh set of state standards to reconnect with our natural world?

## New, Free K-3 Science Units: A Bridge to MSS Implementation

**Joseph Austin, Waterford School District**

*Primary Subject: AS*  
*Interest Level: EE*  
*Location: Coral*

Oakland Schools has revised its K-3 science units to reflect the NRC Framework. These versions incorporate 3-D Learning and Writing while remaining targeted to the Michigan's science GLCEs. Sample products provided

## NGSS Engaging Elementary Interactive Notebook Activities for Upper Elementary Classroom

**Carolyn Mammen, Trinity Lutheran School, Traverse City**

*Primary Subject: GS*  
*Interest Level: LE, MS*  
*Location: Opal*

Participate in an interactive session for upper elementary. I will share how a middle school lesson was modified for a 5th grade classroom, aligned with NGSS, plus Interactive Notebooks.

## Formative Assessments--More Than Thumbs up, Thumbs down!

**Mark Olson, Oakland University**

*Primary Subject: AS, IN*  
*Interest Level: MS, HS*  
*Location: Topaz*

Oakland University secondary science student teaching interns share real examples of formative assessments they've found useful for gaining insights into their students' science understanding, and how these insights inform instruction.

## Games, Games, Games

**Rachel Badanowski, Wayne State University**

*Primary Subject: GS*  
*Interest Level: LE, MS, HS*  
*Location: Jasper*

Using games to introduce, reinforce and review information in a hands-on presentation with handouts provided.

**Fri 4:00 pm-5:30pm**

## Andr s Ruzo, Geoscientist, National Geographic Explorer

**Andr s Ruzo, National Geographic Explorer**

*Primary Subject: GS*  
*Interest Level: EE, LE, MS, HS, CO*  
*Location: Sapphire*

Andr s Ruzo, Geoscientist, National Geographic Explorer

Andres is the founder and director of the Boiling River Project, a non-profit organization, as well as a geoscientist, science communicator, author, and educator. He is a TED Speaker, TED Book Author, and National Geographic Explorer. Andr s holds degrees in Geology and Finance from Southern Methodist University (Dallas, TX), where he is currently finishing a Ph.D. in Geophysics. His primary research focus is geothermal exploration and heat flow mapping. Andr s originally heard about the Boiling River as a detail in a childhood legend. He began investigating the claim in 2010, while working on the Geothermal Map of Peru, and became the first geoscientist to obtain permission to study the Sacred River in 2011. He returns to the Amazon every year to continue the scientific research and conservation work in the Boiling River area.

Event Flyer: <https://goo.gl/WszSNB>

## Session Key:

### Primary Subject Levels:

AS – Assessment/Curriculum  
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☞ – SCECH Session

▼ – Vendor Session

# Session Descriptions

Friday and Saturday

## Fri 5:00 pm-6:00 pm

### HHMI Movie 🎬

**Mark Eberhard, St. Clair High School**

*Primary Subject: GS*

*Interest Level: EE, LE, MS, HS, CO*

*Location: Opal*

HHMI Movie: **Trophic Cascades**

An interactive that explores examples of what can happen when there are changes in the population size of one species in an ecosystem.

## Fri 5:30 pm-6:30 pm

### Awards Reception

**Marlenn Maicki, Detroit Country Day School**

*Primary Subject: AS, AST, BI, CH, CO, EN, ES, GS, IN, IS, LT, PH*

*Interest Level: CO, EE, HS, LE, MS*

*Location: Fireside*

Awards Reception, separate registration required

## Fri 6:30 pm

### Awards Banquet

**Marlenn Maicki, Detroit Country Day School**

*Primary Subject: AS, AST, BI, CH, CO, EN, ES, GS, IN, IS, LT, PH*

*Interest Level: CO, EE, HS, LE, MS*

*Location:*

Awards Banquet, separate registration required

## Saturday, March 25, 2017

## Sat 8:00 am-8:45 am

### Making Grades More Meaningful 🎬

**Brian Langley, Novi High School**

*Primary Subject: GS*

*Interest Level: MS, HS*

*Location: Ruby*

Learn about one teacher's quest for more meaningful grading practices, gaining strategies immediately transferable to your classroom. Perfect for those seeking field-tested alternatives to common grading procedures.

### Games, Games, Games 🎬

**Rachel Badanowski, Wayne State University**

*Primary Subject: GS*

*Interest Level: LE, MS, HS*

*Location: Emerald*

Using games to introduce, reinforce and review information in a hands-on presentation with handouts provided.

### Our Public Treasures, Our Public Lands 🎬

**Larry Feldpausch, retired from Ida High School, Ida Public Schools**

*Primary Subject: BI, EN*

*Interest Level: MS, HS*

*Location: Topaz*

Ready for immediate use, this one class period primer on our recreational public lands, will teach your students what they are, who manages them and for what purposes.

### Engineering a Carnivorous Plant 🎬

**Amie Smith, Pleasant Lake Elementary, Walled Lake Schools; Bradley Smith, David Hicks Elementary School**

*Primary Subject: EN*

*Interest Level: LE*

*Location: Ivory*

Come explore a 5E lesson that will engage and excite your students. Teachers will create an ecosystem and engineer a carnivorous plant that lives in that ecosystem.

### Outstanding Science Trade Books from the CBC and NSTA 🎬

**Conni Crittenden, Explorer Elementary, Williamston Community Schools**

*Primary Subject: GS*

*Interest Level: EE, LE, MS*

*Location: Garnet*

Check out some of the Outstanding Science Trade Books from this year and previous years.

### Using Google Docs in the NGSS Classroom 🎬

**Cheryl Matas, retired**

*Primary Subject: AS, IN*

*Interest Level: EE, LE, MS, HS, CO*

*Location: Moonstone*

Get ready to go deeper into Google Docs. Participants will learn the awesome features that students can use to bump up their projects that teachers can easily assess. Handout provided.

### Renewable Energy Dashboard for Student Education 🎬

**Christine Gleason, Activate Learning**

*Primary Subject: CO, EN*

*Interest Level: MS, HS*

*Location: Jade*

The Greenhills School Renewable Energy Dashboard monitors, displays and archives performance data from multiple renewable energy resources for use in middle/high school student education. Data can be shared with schools.

### High School Chemistry Teachers Meeting

**Mary Jordan McMaster, Allen Park High School**

*Primary Subject: CH*

*Interest Level: HS*

*Location: Granite*

What are districts doing to adopt the NGSS and how does it affect Chemistry? Bring your coffee and catch up with other high school chemistry teachers around the state.



## Antibiotic Stewardship: What Should Teachers and Students Know? 🗣️

**Elaine Bailey, Michigan Antibiotic Resistance Reduction Coalition**

Primary Subject: BI  
Interest Level: EE, LE, MS, HS  
Location: Coral

You will learn about the public health crisis of antibiotic resistance and the role that everyone plays in being better “stewards” of antibiotics. Free K-12 curriculum will be shared.

## Neuroscience for the 99% 🗣️

**Greg Gage, Backyard Brains**

Primary Subject: BI, PH  
Interest Level: MS, HS, CO  
Location: Crystal Ballroom

Bring the NGSS biology, physics, physiology and engineering standards to life with fascinating student-led neuroscience investigations which deeply integrate science practices, engineering practices, and brain content together.

## Enhance your Classroom Experience with Animals 4 Kidz(Tadpoles & more!) 🗣️

**Chara Watts, Animals 4 Kidz**

Primary Subject: ES, GS  
Interest Level: EE, LE  
Location: Amethyst

Animals 4 Kidz is enhancing classrooms across Michigan with our Tadpole Experience and Watch me Grow indoor gardening programs. Enjoy hands-on activities, handouts and a taste of our science experience!

## ‘You Be The Chemist-Teaching Chemistry through Inquiry’ 🗣️

**Kathleen O’Connor**

Primary Subject: CH  
Interest Level: LE, MS  
Location: Silver

The ‘You Be The Chemist’ program is designed to provide educators with methods for teaching chemistry concepts through hands-on learning. Educators will receive a flash drive containing resources from the Chemical Education Foundation.

## Muffins for Members

**Robby Cramer, MSTA; Jen Arnsward, MSTA/Ionia Public Schools**

Primary Subject: GS  
Interest Level: EE, LE, MS, HS, CO  
Location: Fireside (dinner/reception)

MSTA Membership Meeting- Stop in for a muffin and provide feedback and guidance to the MSTA board.

## Objectives-Based Grading: How to Make Grades Meaningful 🗣️

**Michelle Vanhala, Tecumseh High School**

Primary Subject: AS, GS  
Interest Level: MS, HS  
Location: Opal

Attendees will learn how a high school teacher uses objective-

based grading in a traditional grading system to make grading easier while providing students with meaningful feedback.

## Sat 8:00 am-9:45 am

## Walk Like An Engineer! 🗣️

**Kathleen Jenkins, Beaverton Rural Schools & CMU RET Program; Katie McMahon, Central Michigan University**

Primary Subject: GS, IN  
Interest Level: MS, HS, CO  
Location: Bronze

Integrating original thinking and exploration can be a foreign concept to teachers but the NGSS science and engineering standards invite us to walk like engineers. Hands-on with handouts provided.

## MEECS Climate Change 🗣️

**Janet Vail, GVSU Annis Water Resources Institute (AWRI)**

Primary Subject: AS, EN  
Interest Level: MS, HS  
Location: Copper

MEECS Climate Change Unit: Learn about climate and weather, the energy balance, the carbon cycle, and the Greenhouse effect. Students will observe change in the Earth’s cycles and climate.

## Data Nuggets: Scaffolding Claim-Evidence-Reasoning Using Real Data in Context 🗣️

**Melissa Kjelvik, Michigan State University; Cheryl Hach, Kalamazoo Math and Science Center; Marcia Angle; Elizabeth Schultheis**

Primary Subject: AS, IN  
Interest Level: LE, MS, HS, CO  
Location: Sapphire

Data Nuggets, free activities co-designed by scientists and teachers, bring authentic data and research into classrooms. See how integrating DNs into your curriculum can help students construct evidence-based claims.

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🗣️ – SCECH Session  
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8:00 a.m. - 9:45 a.m. *continued*

## Saving Elephants: Using Molecular Tools to Solve Ecological Problems

**Mark Eberhard, St. Clair High School**

*Primary Subject: BI, EN  
Interest Level: MS, HS, CO  
Location: Pearl*

Using HHMI's award winning interactive activities, we will explore how molecular tools and DNA sequencing may be key to stabilizing the threatened African elephant population. Incorporates NGSS science practices! FREE resources!

## Reducing Natural Hazard Risk: A Mi-STAR Unit

**Stephanie Tubman, Michigan Technological University - Michigan Science Teaching Assessment and Reform; Cindy Lysne, Michigan Technological University - Michigan Science Teaching Assessment and Reform; Jessica Good, Bangor Township Schools; Carmen Kessler, Midland PS**

*Primary Subject: ES, PH  
Interest Level: MS  
Location: Gold*

Mi-STAR is developing an integrated science curriculum for Michigan. Participate in hands-on activities from a classroom-tested unit on the mitigation of natural hazards. Aligns with MS-ESS3-2, MS-PS4-3. Handouts provided.

**Sat 9:00 am-9:45 am**

## How To Create Your Own Country: Inquiry and Earth Science

**Cheryl Matas, retired**

*Primary Subject: ES  
Interest Level: EE  
Location: Garnet*

What could be more exciting than creating your own country? In this session, participants will be introduced to a project that integrates curriculum and uses creating maps and models extensively.

## Practice Make Perfect: Developing Science Teaching Excellence

**Mary Stein, Oakland University; Betty Crowder, Oakland University; Crystal Brown, Downriver STEM @Weiss Elementary**

*Primary Subject: GS, IN  
Interest Level: EE, LE, MS, HS, CO  
Location: Opal*

From preservice teachers to award-winning professionals, specific pathways to develop new teaching strategies are explored during this interactive session. High-leverage teaching practices and Science Talk provide the frameworks for developing and improving specific teaching practices, whether novice, expert, or in-between.

## An Overview of the Environmental Educator Certification (EEC)

**Cindy Fitzwilliams-Heck, MAEOE - Michigan Alliance for Environmental and Outdoor Education; MAEOE Education Committee, MAEOE**

*Primary Subject: GS, EN  
Interest Level: EE, LE, MS, HS, CO  
Location: Moonstone*

The Michigan Alliance for Environmental and Outdoor Education (MAEOE) is offering a state environmental education certification following the guidelines of the North American Association for Environmental Education (NAAEE). Much of the process is self-paced and requires five strands to be completed before certification is conferred.

For more information on the EE certification go to [www.maeoe.com](http://www.maeoe.com)

## Carbon TIME: Free NGSS-aligned Curriculum, PD, and Teaching Networks

**Christie Morrison Thomas, Michigan State University; Dave Russell, Huron High School, Ann Arbor**

*Primary Subject: BI, EN, AS  
Interest Level: MS, HS  
Location: Coral*

The Carbon TIME (Transformations in Matter and Energy) curriculum includes six phenomena-based units tracing matter & energy through processes such as photosynthesis & cellular respiration at different scales. Includes online assessments, coordinated PD, and professional networks.

## STEAMing Up Our Science Program

**Lloyd Hilger, Hanover Horton Elementary School**

*Primary Subject: GS  
Interest Level: EE, LE, MS, HS  
Location: Amethyst*

I am currently teaching STEAM classes to elementary students. We will be looking at ways to add art and building of models to our science programs.

## Outdoor Science Education on a Budget

**Rebecca Sandee, Whitehall District Schools; Gabriel Knowles, Whitehall District Schools**

*Primary Subject: EN  
Interest Level: EE, LE  
Location: Ivory*

Attend this presentation if you are looking for creative and low or cost-free ways to get your students outdoors studying an integrated curriculum. This is a "hands-on" activity.

## Chemistry Modeling - Particle Drawings and the Gas Laws

**Carolyn Grapentine, Flat Rock Community High School**

*Primary Subject: CH  
Interest Level: HS  
Location: Granite*

Chemistry Modeling has changed my teaching and my students' learning. We will use white boards to draw particle diagrams and learn the gas laws in a new way!



## Transitioning to NGSS from a Teacher's Point of View

**Tricia Shelton**

*Primary Subject: GS*

*Interest Level: EE, LE, MS, HS, CO*

*Location: Onyx*

Join Tricia Shelton as she discusses:

- Trish's NGSS WHY
- Students as Partners
- Science for all Students
- Phenomena-- focus on figuring out

Tricia Shelton is a High Science Teacher and Teacher Leader with a BS in Biology and MA in Teaching, who has worked for 22 years in Kentucky driven by a passion to help students develop critical and creative thinking skills. Tricia is a 2014 NSTA Distinguished Teaching Award winner for her contributions to and demonstrated excellence in Science Teaching. As a Professional Learning Facilitator and NGSS Implementation Team Leader, Tricia has worked with educators across the United States to develop Best Practices in the Science and Engineering classroom through conference presentations, webinars, coordinating and co-moderating #NGSSchat on Twitter, and virtual and face to face PLC work. Tricia's current Professional Learning Facilitation includes work around the Next Generation Science Standards and helping STEM students develop the 21st Century Skills of critical and creative thinking, collaboration and communication.

## MDE Updates from Assessment and Curriculum/ Instruction

**Tamara Smolek, Michigan Department of Education; Megan Schrauben, Michigan Department of Education**

*Primary Subject: AS, IN*

*Interest Level: EE, HS, LE, MS*

*Location: Crystal Ballroom*

MDE will share current updates related to the state summative assessment and the science implementation plan. This session will be interactive to allow for questions from the audience.

## Goldilocks Was a Scientist

**Rachel Badanowski, Wayne State University**

*Primary Subject: LT*

*Interest Level: EE, LE*

*Location: Topaz*

Explore engaging science activities based on any book or story in this hands-on workshop complete with handouts.

## STEM-ify Your Lessons

**Brian Peterson, Musson Elementary School**

*Primary Subject: GS*

*Interest Level: EE, LE*

*Location: Silver*

The new science standards do not mean you have to start from scratch! We will learn how to STEM-ify our current lessons using a classic science activity.

## Sat 9:00 am-10:45 am

### Engaging Science-Math Teachers in Collaborative Research on Environmental Modeling

**Alex Mayer**

*Primary Subject: CO, EN*

*Interest Level: MS, HS*

*Location: Jade*

MTU's PLACE program partners secondary science and mathematics teachers with engineering graduate students to conduct computationally-based research on the environment. Teams develop curriculum materials, which teachers implement in their classrooms.

## Sat 9:00 am- 12:00 pm

### New Models for Waves and NGSS alignment

**Don Pata, Grosse Pointe North High School; Laura Ritter, Troy High School**

*Primary Subject: IN, PH*

*Interest Level: MS, HS*

*Location: Ruby*

Participants will use cutting edge methodologies to explore new models in waves. The workshop will blend the 3 strands of the NGSS with the Modeling Method.

## Sat 9:00 am- 1:00 pm

### MESTA Rock Shop

**Parker Pennington IV, MESTA**

*Primary Subject: ES*

*Interest Level: CO, EE, HS, LE, MS*

*Location:*

The MESTA Rock Shop for your Rock, Mineral, and Fossil needs. Cash, check, and credit cards accepted. Proceeds fund our outreach programs including Stoney classroom grants and Cranson field scholarships.

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## Sat 10:00 am-10:45 am

### Cheap, Easy, Universal Demonstrations for All Areas of Science

**Andrew Frisch, Farwell Area Schools**

*Primary Subject: CH, GS*

*Interest Level: LE, MS, HS*

*Location: Emerald*

Several cheap and easy demonstrations will be performed along with explanations as to how they can be incorporated into a variety of science classroom settings. These demonstrations will emphasize the Laws of Conservation of Mass and Energy using NGSS.

### Making Lab Reports Come Alive!

**Michael Sinclair, Kalamazoo Area Math & Science Center**

*Primary Subject: GS, LT*

*Interest Level: HS*

*Location: Sapphire*

In this session, I will describe how to use a variety of lab report formats (such as poetry, short stories, tweets, etc.) to encourage more creative explanations of the science.

### Physics with the Raspberry Pi Computer

**Larry Kolopajlo, Eastern Michigan University**

*Primary Subject: PH*

*Interest Level: HS, CO*

*Location: Amethyst*

The Raspberry Pi Computer is cheap, tiny and flexible as a platform for programming, internet, and interfacing. A demo will show how to interface a temperature probe for calorimetry.

### STEM and Inquiry Elementary Extravaganza!

**Mary Stein, Oakland University; Betty Crowder, Oakland University**

*Primary Subject: GS, IN*

*Interest Level: EE, LE, MS, HS*

*Location: Onyx*

Excite and engage your students with new STEM and Inquiry lessons developed by Oakland University preservice teachers. You'll leave this hands-on session with a wealth of new ideas and resources.

### Teaching Elementary Science Should be "Phenomena-L!"

**Crystal Brown, Downriver STEM @Weiss Elementary**

*Primary Subject: GS, IN*

*Interest Level: EE, LE*

*Location: Garnet*

Learn the importance of Phenomena in Elementary Science Lessons. Take away resources to find Phenomena to fit your curriculum. Learn how to transform experiences you already provide for your students into Phenomena for your NGSS Classroom. Experience Phenomena first-hand!

### Conservation Project: Connecting the Classroom to the Field

**Vic Bell; Diane Miller, Detroit Zoological Society**

*Primary Subject: EN, IS*

*Interest Level: LE*

*Location: Ivory*

Connecting students to real-world applications of what they learn in the classroom is vital to creating informed and empowered global citizens. Detroit Zoo's Conservation Project is providing those opportunities.

### Effective use of Screencasts and Simulations for Online Learning

**Deborah Herrington, Grand Valley State University**

*Primary Subject: CH*

*Interest Level: HS, CO*

*Location: Granite*

Participants will learn about research-based best practices for using simulations and related screencasts to help students construct conceptual understanding of key chemistry concepts in out-of-classroom learning environments.

### One in a Million

**Bill Cline, LAB-AIDS**

*Primary Subject: CH*

*Interest Level: HS*

*Location: Lab Aides Lab Demo Room*

Walk away with some effective ways to teach the structure of an atom. Using the Lab-Master, user friendly spectrophotometer, explore how light interacts with dyes. Good foundation lab NGSS HS-PS4-4.

### Transforming Student Illustrations into Scientific Models

**Jessica Ashley, Oakland Schools; Mike Gallagher, Oakland Schools**

*Primary Subject: IN*

*Interest Level: EE, LE, MS, HS*

*Location: Pearl*

Explore how to transform simple student illustrations into scientific models that can test ideas and make predictions about systems. Support and resources for model development included!

### Engaging in Argument from Evidence in Secondary Urban Science Classrooms

**Susan Heiss-Ransom, Westwood Community School; Tyler Cederlind, Wayne RESA**

*Primary Subject: GS, IN*

*Interest Level: MS, HS*

*Location: Coral*

Hands-on, real-life phenomenon and academically productive talk in the secondary science classroom allows students to engage with language that represents real world dialogue and allows student expression



## Rates of Earth Processes: Extremely Fast to Super Slow

**Steve Mattox, Grand Valley State University; Emily Siriano, Grand Valley State University**

Primary Subject: ES  
Interest Level: MS, HS, CO  
Location: Moonstone

Earth materials and systems interact over fractions of seconds to billions of years. We will provide numerous classroom-ready examples to be used across your school year.

## Invigorate your Photosynthesis and Cellular Respiration Investigations with Algae Beads

**Tamica Stubbs, Bio-Rad Laboratories**

Primary Subject: BI  
Interest Level: MS, HS, CO  
Location: ExHall3

Learn how to upgrade your classroom experiences using a simple algae bead system and a colorimetric, CO2 tracking solution while invigorating your passion to teach photosynthesis and cellular respiration.

## Integrating Science in Social Studies

**Brian Peterson, Musson Elementary School**

Primary Subject: ES  
Interest Level: EE, LE  
Location: Silver

This cross-curricular session will teach where all water exists on earth. We will examine the history and use of the Flint River and engineer water filters for the river's water.

## The Secrets to Project-based Learning and Success in STEM

**John Spicko, Accelerate Learning - STEMscopes**

Primary Subject: GS  
Interest Level: EE, LE, MS, HS  
Location: ExHall5

Project-based Learning can be challenging. Experience how hands-on, engaging PBL strategies provide student autonomy to solve problems of interest; see high levels of engagement lead to high levels of learning.

## Sat 10:00 am-11:45am

## Natural Resources, Thermal Energy, and the Life of the Stuff We Make: A Mi-STAR Unit

**William Houston, Rebecca Stinson, Sheri Turner**

Primary Subject: CH, ES  
Interest Level: MS, HS  
Location: Gold

Interact with materials from a Mi-STAR middle school NGSS-aligned unit. Classroom-tested activities will focus on product life cycles, natural resources, sustainability, thermal energy, and building insulation materials. Handouts provided.

## Modeling in Physical Science: A New Approach for New Standards

**Robert Peters, Caro Community Schools**

Primary Subject: IN  
Interest Level: HS  
Location: Copper

This hands-on workshop will introduce a new first-year high school Physical Science program that utilizes Modeling Instruction and aligns with the three dimensional framework of the NGSS.

## IQWST-Making Critical Thinking More than a Clich, Using 3-dimensional Learning

**Christine Gleason, Activate Learning - IQWST**

Primary Subject: IN  
Interest Level: MS  
Location: ExHall4

Come engage in investigations where middle school students experience phenomena, construct explanations, and argue from evidence. Teach students to think like scientists applying a claim, evidence, reasoning framework to explain investigations.

## Engineering the Future - Exploring Engineering Design in the MSS

**Eric Mann, Hope College; Susan Brown, Hope College; Lindsey Grynewicz, Hope College; Katelyn Denouden, Hope College**

Primary Subject: GS, IN  
Interest Level: LE, MS  
Location: Opal

After a brief introduction to the engineering design process, participate in a hands-on design challenge that you can take back to your classroom. Handouts will be provided.

## Integrating Literacy Skills in Science Investigations

**Matt Moorman, Teachers' Curriculum Institute (TCI)**

Primary Subject: AS, GS  
Interest Level: EE, LE  
Location: ExHall2

Join TCI for an interactive Bring Science Alive! investigation where we demonstrate how to implement strong literacy practices as you guide students in developing their science knowledge.

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10:00 a.m. - 11:45 a.m. *continued*

## The Next M-STEP: Michigan's new MSS-aligned assessment

**Wendy Johnson, Michigan State University; Tamara Smolek, Michigan Department of Education; Kristin Mayer, East Kentwood High School**

*Primary Subject: AS, GS  
Interest Level: EE, LE, MS, HS  
Location: Crystal Ballroom*

Hear about the new MSS-aligned Michigan science assessment straight from an expert writing team! Review processes used for designing item clusters and how to use them to support your instruction.

## Hands On Neuroscience Workshop: Invertebrate Spikes!

**Greg Gage, Backyard Brains**

*Primary Subject: BI, CO  
Interest Level: CO, MS, HS  
Location: Bronze*

In this workshop, you will be able to experiment on living invertebrate brains to record individual spikes from neurons, and understand electrophysiology through electrical manipulation.

**Sat 11:00 am-11:45 am**

## 10 Simple to set-up Chemistry Demonstrations

**Scott Milam, Plymouth High School**

*Primary Subject: CH  
Interest Level: HS  
Location: Emerald*

I will share 10 chemistry demonstrations that require 5 minutes or less to set up.

## Innovative STEM: Students Become Wildlife Scientists

**Tori Frailey, Bear Trust International; Melissa Reynolds-Hogland, Bear Trust International**

*Primary Subject: BI, EN  
Interest Level: HS  
Location: Pearl*

Students use real data on wolves and bears to address timely conservation issues as part of Bear Trust International's STUDENT SCIENTIST SERIES: Population data, GPS, GIS tutorials, introductory videos, more.

## Photosynthesis: Using Experimental Evidence to Construct Understanding

**Brad Stevens, Zeeland Public Schools**

*Primary Subject: BI  
Interest Level: MS, HS  
Location: Moonstone*

Engage students in making observations, designing experiments, and collecting evidence to identify the reactants in photosynthesis while confronting misconceptions that carbon dioxide, soil, water, and sunlight are food for plants.

## Explaining Phenomena and Designing Solutions in BCAMSC Science Unit Kits

**Nancy Karre, Battle Creek Area Mathematics and Science Center**

*Primary Subject: AS  
Interest Level: EE, LE  
Location: Sapphire*

Use phenomena and designing solutions to drive student engagement and learning. Experience a lesson from the BCAMSC science unit kits that makes science knowledge relevant and purposeful.

## Forensics For Free

**Caitlin Johnson, Romulus High School**

*Primary Subject: GS  
Interest Level: MS, HS  
Location: Jade*

Looking to teach forensic science or add more interest to topics in your basic science courses? Come learn free/cheap activities to integrate a forensic science curriculum!

## Population Education: Curriculum for a Crowded Planet

**Janet Vail, GVSU Annis Water Resources Institute (AWRI);**

*Primary Subject: EN, IS  
Interest Level: MS, HS  
Location: Ivory*

Discover fun, thought-provoking ways to teach about carrying capacity, human population dynamics and environmental impacts in this hands-on session. Receive a CD-ROM of resources matched to Michigan Science Standards.

## Read All About It!

**Holly McGoran, Jenison Public Schools**

*Primary Subject: LT  
Interest Level: EE, LE, MS  
Location: Garnet*

Are you looking for different ways to engage your students with scientific text? Come ready to read, share and learn new instructional strategies to use in your classroom next week!

## Mastering the Chemical Formula

**Bill Cline, LAB-AIDS; Denis Baker, LAB-AIDS**

*Primary Subject: CH  
Interest Level: HS  
Location: Lab Aides Lab Demo Room, Exhibit Hall C*

If a student does not fully understand the chemical formula, then moles, reactions, and stoichiometry are hopelessly confusing. Join us for intuitive lessons for all students to master the formula.

## Introductory Engineering on a Dime

**Patti Picard, Tawheed Center of Detroit School**

*Primary Subject: CO, IN  
Interest Level: EE, LE  
Location: Amethyst*

Get your students actively involved with the new engineering standards without breaking the budget. Learn how to incorporate simple and thrifty engineering activities into your science curriculum.





# Session Descriptions

Saturday

## Engaging through Inquiry

**Susan Ransom, Robichaud High School/Westwood Schools**

Primary Subject: GS  
Interest Level: MS, HS  
Location: Coral

Student-centered science inquiry using the 5E model. Geared toward NGSS alignment.

## Conserving Giant Panda Populations: One Hormone Test at a Time!

**Tamica Stubbs, Bio-Rad Laboratories**

Primary Subject: BI  
Interest Level: MS, HS, CO  
Location: ExHall3

Come and put your immunology and endocrine system knowledge basics to the test as you engineer a hormone detection system that can be utilized for Giant Panda Population Conservation efforts.

## Testing Success for All

**Judy-Gail Armstrong-Hall**

Primary Subject: IN  
Interest Level: EE, LE, MS, HS, CO  
Location: Silver

This session covers three MSTA publications on testing. A comprehensive tracking system for study habits will be introduced so that teachers and parents have better communication.

## LEGO Education-STEM-Simple Machines

**Ivery Toussant Jr., LEGO Education**

Primary Subject: AS, EN  
Interest Level: EE, LE, MS, HS  
Location: ExHall5

The solutions allow students to predict, test, observe, measure, record and present their findings. Even the least science oriented educators will feel secure teaching these standards and concepts with LEGO®.

## Sat 12:00 pm-1:00 pm

### MESTA Rock Raffle

**Tabby Eldredge, MESTA**

Primary Subject: ES  
Interest Level: CO, EE, HS, LE, MS  
Location:

Check out the extraordinary samples you could win in the famous MESTA Rock Raffle! Raffle Saturday @ noon.

### MSTA Raffle

**Crystal Brown, Downriver STEM @Weiss Elementary**

Primary Subject: GS  
Interest Level: CO, EE, HS, LE, MS  
Location: General Exhibit Area

MSTA Raffle at noon at MSTA booths 104, 106  
MUST BE PRESENT TO WIN!

## Sat 1:00 pm-1:45 pm

### Advanced Research: How Independent Student Research Projects Drive Curriculum

**Julie Smith, Greenhills School**

Primary Subject: GS  
Interest Level: HS, CO  
Location: Moonstone

A model of a successful Advanced Research Course will be presented where students complete high-level, independent STEM research and learn to professionally communicate their findings in a variety of formats.

### Energy: Explained in terms of Michigan's Electrical Grid

**Andrew Frisch, Farwell Area Schools**

Primary Subject: GS, PH  
Interest Level: MS, LE, HS  
Location: Topaz

Our modern society is fueled by electricity, but how is our electrical grid fueled? Examples and demonstrations will explain how Michigan obeys the law of conservation of energy to power our state. Students of all levels will benefit from this simple and thought-provoking session.

### An Elemental History of the Universe

**E. Prasad Venugopal, University of Detroit Mercy; Mark Benvenuto, University of Detroit Mercy**

Primary Subject: CH, IN  
Interest Level: HS, CO  
Location: Granite

This session will present results from student responses in two introductory science classes when they were assigned to write a socio-historical narrative from the perspective of a chemical element.

## Session Key:


### Primary Subject Levels:

AS – Assessment/Curriculum  
CH – Chemistry  
ES – Earth Science  
GS – General Science  
LT – Literacy  
BI – Biology  
EN – Environmental Education  
IN – Instruction/Pedagogy  
PH – Physics  
AST – Astronomy

### Interest Levels:

EE – Early Elementary  
LE – Late Elementary  
MS – Middle Level  
HS – High School  
CO – College

 – SCECH Session

 – Vendor Session

1:00p.m. - 1:45 p.m. *continued*

## Enhance your Classroom Experience with Animals 4 Kidz(Tadpoles & more!) 🗣️

**Chara Watts, Animals 4 Kidz**

*Primary Subject: ES, GS*

*Interest Level: EE, LE*

*Location: Garnet*

Animals 4 Kidz is enhancing classrooms across Michigan with our Tadpole Experience and Watch me Grow indoor gardening programs. Enjoy hands-on activities, handouts and a taste of our science experience!

## Leveraging Scientific Literacy Practices to Support Students in Sense-making 🗣️

**Jessica Ashley, Oakland Schools; Steve Tighe, Lake Orion High School; Jill Jessen**

*Primary Subject: LT, IN*

*Interest Level: MS, HS*

*Location: Coral*

Explore how to overlay Science and Engineering Practice #8 and the Common Core Literacy Practices. Support students in “sense-making” by using informational text.

## Green Chemistry Connections - Inspiring Students with Innovations 🗣️

**Kathe Blue-Hetter, Skyline High School; Erika Futura, Pentwater High School**

*Primary Subject: CH*

*Interest Level: HS*

*Location: Emerald*

An hands-on set of lessons that highlight green chemistry innovation and align with the new Michigan Science Standards. Mushrooms the new plastic, how sharks influence chemistry, safer pigments. Free samples!

## Introduction to MEECS Online Learning Portal

**Amanda Syers, Grand Valley State University**

*Primary Subject: AS, EN*

*Interest Level: LE, MS*

*Location: Copper*

MEECS Online! MEECS workshops have been offered to Michigan's in education since 2006. MEECS is now adding online courses to supplement the workshop training.

## MESTA's Free and Inexpensive Earth Materials

**Judith Ruddock, Michigan Earth Science Teachers Association;**

*Primary Subject: ES*

*Interest Level: CO, EE, HS, LE, MS*

*Location: Jade*

This is it! Our Famous FREE AND INEXPENSIVE rock and mineral sale sponsored by the Michigan Earth Science Teachers Association. Classroom samples, teaching kits and answers to your Earth questions.

## The Science of Storytelling 🗣️

**Cheryl Matas, retired**

*Primary Subject: IN*

*Interest Level: EE, LE, MS*

*Location: Opal*

In this participatory session, learn how to incorporate stories using visual, audio, kinesthetic and emotional anchors, which will engage your students to the fullest and result in learning that sticks.

## Upstream Downstream--You Make a Difference 🗣️

**Lea Sevigny, Forest Hills Central Middle School**

*Primary Subject: EN, IS*

*Interest Level: MS*

*Location: Ruby*

Starting in our local watershed with the Leaf Pack Network, macroinvertebrate species inspire a mindset of environmental stewardship for the Great Lakes Basin.

Handouts provided in this hands-on activity.

## A Middle School Wind Turbine Project for Math-Science Integration 🗣️

**Susan Beamish, Greenhills School; Brandon Groff, Greenhills School; Damian Khan; Charles Dershimer**

*Primary Subject: GS*

*Interest Level: MS*

*Location: Sapphire*

This wind turbine project has our students using sensors in science class to collect voltage and current data and analyzing the data in their math class. Handouts will be available.

## Sat 1:00 pm-2:45 pm

## STEM to STERN Essential Elements 🗣️

**Mary Hillebrand, Calvary Baptist Academy**

*Primary Subject: CH, IS*

*Interest Level: EE, LE, MS*

*Location: Pearl*

Hands-On Science for grades K - 8 using items from the Dollar Store or your kitchen. Fifty-five or more FREE resources given to all participants. Instill a LOVE of science!

## Physics Make and Take 🗣️

**Steve Dickie, Divine Child High School; James Gell, Plymouth High School**

*Primary Subject: PH*

*Interest Level: MS, HS*

*Location: Crystal Ballroom*

Participants will have the opportunity to construct several apparatuses for classroom demonstrations of physics phenomena. These apparatuses will be constructed of inexpensive and easily-obtainable materials. Sponsored by the MIAAPT.



## Arbor Scientific: Cool Tools for Force & Motion

**Don Pata**

*Primary Subject: GS, PH*

*Interest Level: MS, HS, CO*

*Location: Amethyst*

Learn to identify interactions between objects either by direct contact (e.g., pushes or pulls, friction) or at a distance (e.g., gravity, electromagnetism) and use forces to describe interactions between objects.

## Rube Goldberg, a Metacognitive Activity

**Rachel Badanowski, Wayne State University**

*Primary Subject: GS*

*Interest Level: LE, MS, HS, CO*

*Location: Ivory*

Create a Rube Goldberg device in this hands-on session that will stretch the limits of your imagination.

## Make Decisions Regarding Michigan's Changing Ecosystems: A Mi-STAR Unit

**Tony Matthys, Michigan Technological University; Bar McIntyre; Denise Bujalski, Midland PS**

*Primary Subject: BI, EN*

*Interest Level: MS*

*Location: Gold*

Interact with three-dimensional activities from a classroom-tested, integrated science unit on ecosystem change, patterns of species interactions, resource availability and evaluating solutions. Aligns with MS-LS2-1, MS-LS2-2, MS-LS2-4, MS-ETS1-2. Handouts provided.

## Hands On Neuroscience Workshop: Human Electrophysiology

**Greg Gage, Backyard Brains**

*Primary Subject: BI, PH*

*Interest Level: HS, MS, CO*

*Location: Bronze*

Understand the electrical signals in the human body: muscles (EMG), Brain (EEG) and more. We will do hands-on experiments to record signals and use them to create fun brain-machine interfaces.

## Field Trip to MSU Extension Tollgate Education Center and Farm

*Primary Subject: EN, IS*

*Interest Level: EE, LE, MS, HS*

*Location:*

Carpool 4 miles to MSU's Tollgate Farm to learn how MSU Extension Outreach Programs can support your educational goals with experiential, educational programs and field trips for your students that connect to the curriculum in your classroom. You will tour the growing school gardens & greenhouse, the sugar shack where the students and volunteers make maple syrup, and learn about youth development programs, community food systems education, and agriculture and natural resources. Using research-based curriculum and methods, Tollgate promotes food system awareness through exploring the sustainable, nutritional, and cultural aspects of agriculture. The field trip takes place on both Friday (3-hour session)

and Saturday (2-hour session), so you can choose the day that works best for you. Cost is \$10 and requires registration. We suggest that you wear farm appropriate footwear if possible. Meet at the seating area in the lobby across from the Sapphire ballroom at 1:00 pm.

## Sat 2:00 pm-2:45 pm

### Treading the Transition Tightrope - MSS Activities for ESS

**Cris DeWolf, Chippewa Hills High School**

*Primary Subject: ES, AST*

*Interest Level: HS*

*Location: Emerald*

Michigan's new science standards (MSS) are driving change. Applying mathematics to planetary motion (Kepler's Laws) is one change. Come plot with us!

### Using Children's Books to Engage Young Scientists & Engineers

**Holly McGoran, Jenison Public Schools**

*Primary Subject: LT*

*Interest Level: EE, LE*

*Location: Garnet*

Many books provide the opportunity for students to identify with characters engaging in the science & engineering practices. Come ready to read, share, & learn more about these brilliant books!

### What's in the Middle?

**Michele Svoboda, retired**

*Primary Subject: ES*

*Interest Level: LE, MS, HS*

*Location: Granite*

Make a slice of the earth's interior that shows the layers, and boundaries. Slices can be put together to make a complete scale model of the Earth. Handouts provided.

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PH – Physics  
AST – Astronomy

### Interest Levels:

EE – Early Elementary  
LE – Late Elementary  
MS – Middle Level  
HS – High School  
CO – College

☞ – SCECH Session

▼ – Vendor Session

# Session Descriptions

2:00 p.m. - 2:45 a.m. *continued*

## Animal Needs: Building Literacy through Science

**Vic Bell, Diane Miller, Detroit Zoological Society**

*Primary Subject: LT, IS*

*Interest Level: EE*

*Location: Moonstone*

The core concept of animal needs is explored through hands-on activities that simultaneously build literacy skills in kindergartners at the Detroit Zoo. Ready-to-teach lesson plans and activities will be provided.

## Do You Have a “STEM Personality”?

**Patti Picard, Tawheed Center of Detroit School**

*Primary Subject: GS, IN*

*Interest Level: EE, LE, MS*

*Location: Opal*

What character traits make successful STEM students? By partnering conscientious character education into focused STEM activities, we can improve the overall achievement of our students. Hands-on with handouts provided.

## Shake, Rattle and Roll: Earthquake Proof Towers

**Christie Gayheart, Jefferson Middle School-Midland Public Schools; Jennifer Lehman, Jefferson Middle School-Midland Public Schools**

*Primary Subject: GS, IN*

*Interest Level: MS*

*Location: Coral*

The purpose of this activity was to have students build an earthquake proof tower given a set of constraints and criteria using the engineering design model.

## Your Reading Toolbox: Strategies for Building Strong Readers in Science

**Susan Tate, Whitehall Middle School**

*Primary Subject: GS, LT*

*Interest Level: LE, MS, HS*

*Location: Copper*

Are you frustrated with the struggles that your students have when it comes to reading and comprehending informational text? Learn new reading strategies to help your kids be successful!

## NGSS Yourself

**Walter Charuba, Brownell Middle School**

*Primary Subject: ES, AST*

*Interest Level: MS*

*Location: Ruby*

Experience how to incorporate and develop older lessons around the Next Generation Science Standards. There will be seven earth and astronomy lessons to take home and use immediately.

## You Can't Make Them Care...Or CAN You???

**Chris Blackstock, self-employed**

*Primary Subject: IN*

*Interest Level: EE, LE, MS, HS*

*Location: Sapphire*

Low test scores?? Too many discipline write-ups?? Students not engaged?? Come learn strategies to increase student motivation that can be used at ANY level and in ANY subject.



## TAKE A FIELD TRIP TO THE W.K. KELLOGG BIRD SANCTUARY IN AUGUSTA, MICHIGAN

Visit us online to to **schedule a tour** for your class, or to use our **lesson plans** and **classroom resources!**

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# Speaker Index

## A

Adler, Idit	21
Angle, Marcia	33
Armstrong-Hall, Judy-Gail	39
Arnswald, Jen	3,5,30,33
Ashley, Jessica	36,40
Austin, Joseph	31

## B

Bacolor, Richard	3,5,17,27
Badanowski, Rachel	5,21,27,31,32
Bailey, Elaine	33
Baker, Denis	38
Bayer, Renee	15,21
Beamish, Susan	40
Becket, Amanda	27
Beery, Sarah	22
Benvenuto, Mark	39
Bergman, Brenda	15
Blackstock, Chris	42
Blue-Hetter, Kathe	40
Bouwman, Jeff	29
Brewer, Rebecca	14
Brown, Crystal	1,5,34,36,39
Brown, Susan	37
Butler, Kristy	16
Bydlowski, David	17,27,29,51

## C

Cederlind, Tyler	36
Chadde, Joan	14,20
Chapoton, Colleen	15
Charuba, Walter	17,42
Clark, Molly	14
Clark, Nickie	22
Cline, Bill	16,19,22,24,27,29,30,36,38
Coleman, Sarah	16,19
Committee, MAEOE Education	15,34
Cramer, Robby	2,5,33,51
Crittenden, Conni	5,13,14,16,32,50
Crowder, Betty	3,5,34,36,51

## D

de los Santos, Elizabeth	15
Dehne, Kevin	27
Dershimer, Charles	40
DeWolf, Cris	41
Dickie, Steve	40
Dinkelmann, Bill	29
Disch, Susan	24

Dougherty, Kathleen	29
Douglas, Jan	14,17
Dubridge, Sandra	22
DuPuis, Roxane	20,23,24,27
Durling, Becky	16,21

## E

Eberhard, Mark	27,29,32,34
Eberly, Richard	17,51
Eldredge, Tabby	5,23,39
Elkins, Natalie	27
Emmerling, James	27

## F

Feldpausch, Larry	32
Fitzwilliams-Heck, Cindy	15,34
Frailey, Kevin	5,16,19,25
Frailey, Tori	38
Frisch, Andrew	15,20,36,39
Futura, Erika	40

## G

Gage, Greg	1,2,3,4,6,14,20,25,33,38,41
Gallagher, Michael	22,36
Gayheart, Christie	42
Gell, James	40
Gerbe, Brad	29
Gibson, Charles	30
Gleason, Christine	17,26,32
Gochis, Emily	21,25
Grapentine, Carolyn	34
Grasman, Lyndsay	21
Gray, Jon	28
Grazul, Kendall	25
Gregory, Darrick	14
Griffin, Jill	31
Groff, Brandon	40

## H

Haas, Kara	15
Hach, Cheryl	5,33,51
Hahn, Julie	14
Harlan, Heidi	30
Haroff, Tracy	28
Harrington, Jody	31
Heaney, Jodi	14
Heiss-Ransom, Susan	36
Henry, Andy	17,27
Herrington, Deborah	36
Hilger, Lloyd	26

Hillebrand, Mary	16,40
Hodges, William	26
Horvatin, Jennifer	29
Houston, William	37
Hutchinson, Rebecca	30

## J

Jakubowski, Nicole	15
Jawad, Lina H.	16
Jenkins, Kathleen	33
Jessen, Jill	40
Johnson, Caitlin	38
Johnson, Greg	25, 28, 51
Johnson, Wendy	3,5,20,30,38
Jordan McMaster, Mary	

## K

Karre, Nancy	19,38
Kelly, Christine	30
Kelp, Lisa	16,27,30
Khan, Damian	40
King, Casey	24
Kjelvik, Melissa	33
Knowles, Gabriel	34
Kolonich, Angela	16
Kolopajlo, Larry	36
Krajcik, Joseph	51

## L

Langley, Brian	23,32
Larson, Tina M	24
LaSovage, Anne	28
Lehman, Jennifer	15,42
Lenon, Melyssa	44
LeValley, Michael	19,22
Lindow, Mary	14,20
Lutz, Joseph	19
Lysne, Cindy	34

## M

Maicki, Marlenn	5,13,15,32
Malefyt, Ted	31
Mammen, Carolyn	5,31,50
Manion, Melanie	30
Mann, Eric	37
Marcato, Aja	26
Mareski, Shannon	19,22,24
Markham, Laura	24
Marshall, Jason	24
Martin-Powell, Jennel	22



# Speaker Index

Marvin, Susie	30
Mason, Michelle	22
Matas, Cheryl	21,25,29,32,34,40
Matthews, Diana	3,5,22
Matthys, Tony	41
Mattox, Steve	37
Maxwell, Trish	28
Mayer, Alex	35
Mayer, Kristin	38
McDonald, Kalonda	30
McGlashen, Katie	25
McGoran, Holly	3,5,38,41,51
McMahon, Darcy	17,22
McMahon, Katie	33
McMillan, Chuck	28
Milam, Scott	13,38
Mirakovits, Kathy	3,5,22
Moorman, Matt	20,22,37
Morgan, Lisa	22

## N

Nyers, Lisa	24
-------------	----

## O

O'Brien, Thom	24
O'Connor, Kathleen	33
Olson, Mark	31
Opitz, Sebastian	26
Oppliger, Doug	15
Otto, Kelly	30

## P

Parker, Joyce	23
Pata, Don	25,35,41
Peek-Brown, Deborah	3,5,30
Pennington IV, Parker	5,16,35
Pennock, Phyllis	26
Peruski, Jen	22
Peters, Robert	37
Peterson, Brian	5,35,37,50
Peterson, Heather	22

Picard, Patti	38
Pohlonski, Emily	23

## R

Ramsey, Shana	14
Ransom, Susan	36,39
Rea, Stephen	16
Reding, Wil	14,19
Reynolds-Hogland, Melissa	38
Rice, Jane	23,24
Richardson, Audrey	30
Richardson, Jelane	20
Richardson, Patti	16,24
Ritter, Tonja	21
Ritter, Laura	35
Robotham, Heather	28
Rubin, Rochelle	27
Ruddock, Judith	5,28,40
Russell, Dave	34
Ruzo, Andres	3,9,31,46,47,48,49

## S

Samocki, Matt	17
Sandee, Rebecca	34
Schrauben, Megan	17,22,31,35
Schroeder, Brandon	13,17
Schultheis, Elizabeth	33
Severance, Samuel	26
Sevigny, Lea	40,51
Shelton, Tricia	1,2,3,4,6,25,30,35,40,51
Sinclair, Michael	36
Siriano, Emily	37
Smith, Amie	32
Smith, Bradley	32
Smith, Julie	39
Smith, Ashlie	26
Smolek, Tamara	17,20,28,35,38
Spicko, John	23,28,37
Starr, Mary	14,23
Stein, Mary	34,36
Stevens, Brad	38
Stevenson, Katie	30

Stewart, Steve	17
Stinson, Rebecca	37
Stubbs, Tamica	20,23,37,39
Suckley, Michael	21
Sutton, Katelyn	29
Svoboda, Michele	41
Syers, Amanda	24,40
Sylvester, Kevin	19

## T

Tate, Susan	5,13,14,26,42,50,
Teisan, June	23
Thomas, Christie Morrison	20,28,34
Tighe, Steve	40
Touitou, Israel	26,30
Toussant Jr., Ivery	39
Tubman, Stephanie	34
Turner, Sheri	37

## V

Vail, Janet	33,38,51
Vance, Norbert	27
Vanhala, Michelle	33
Venugopal, E. Prasad	39
Victor, James	24
Vogel, Wendi	19,21,27,28

## W

Wagenmaker, Jessica	15,28
Wandel, Bob	31
Watts, Chara	33,40
Wolfinger, Lisa	14

## Z

Zitzelberger, Amy	19
-------------------	----

# Interest Levels

## Early Elementary

"Invade" Your Parks! Students Make a Difference With Interdisciplinary STEM!	30
"TOTALITY" The Great American Eclipse 2017	9,27
3-D State Science Assessment: Design Decisions and Validity Claims	7,20
3-Dimensional Learning in the Elementary Classroom	8,22
Academy of Natural Resources: Professional Development Climbing Higher!	8,21
An Overview of the Environmental Educator Certification (EEC)	7,10,15,34
Andrés Ruza, Geoscientist, National Geographic Explorer	3,9,31
Awards Banquet	1,3,32
Awards Reception	3,32
Bat Behavior - An Inquiry-based Program with Live Animals	8,26
Building A Nature Rich Education	9,31
Demystifying the NGSS with STEMscopes	23
Developing Storylines using KLEWS charts	8,23
ECA Field Trip- As we all transition to the new standards and implement new programs, the next question is how do we manage the materials?	30
Engineering in the New Michigan Science Standards	9,28
Extended Learning: Making the Most of Your Field Trip	9,29
Fall Head Over Heels for Flipping your Classroom!	7,14
Field Trip to MSU Extension Tollgate Education Center and Farm	26,41
Get Hands On With The FARM Science Lab	21
Get Students Asking Their Own Questions	9,30
Go Outside with Michigan Science Standards Using Project-Based Learning	7,15
Goldilocks Was a Scientist	8,10,27,35
Great Lakes Learning Meets Environmental-STEM and Place-based Stewardship Education Opportunity!	7,17
HHMI Movie	9,32
How To Create Your Own Country: Inquiry and Earth Science	9,10,29,34
Introduction to NGSS (Next Generation Science Exemplar)	8,25
It's Time to Buddy Up!	7,16
K-4 Earth Science with Elementary GLOBE - Free and Fun!	8,23
Making Thinking Public: Multiple Options for Recording Student Thinking	7,17
MDE Updates from Assessment and Curriculum/Instruction	7,10,17,35
MESTA Rock Raffle	3,4,5,23,39
MESTA Rock Shop	16,35
MESTA's Free and Inexpensive Earth Materials	28,40
Michigan Mammals	7,19
Michigan Trees	8,22
MISCIPLAN.com - Michigan Science Professional Learning @ the Network	20
MSELA Course 2: Science Learning Targets for Leaders	7,19
MSELA Course 3: Constructing Science PLCs	8,21
MSELA Course 4: A 2020 Vision for Science Classrooms	8,27
MSELA Course 5: Department Chair Conversation	9,28
MSS - Taught Outdoors	9,31
New, Free K-3 Science Units: A Bridge to MSS Implementation	9,31
NGSS - How to Talk 21st Century Science in Elementary	9,28
Paths to a Growth Mindset	8,24
Pearson Interactive Science K-8	28
Phenomenal Science Units: A Comprehensive Science Curriculum for Grades K-5	7,17
Question and Phenomenon Pairs - Starting Storylines	9,27
Salmon in the Classroom 101	7,14
Science and Engineering Practices in the NGSS	7,20
Science Notebooks: Making Thinking and Learning in Science Visible	8,23
Science Talk and Beyond	7,19
STEM & Makerspace at Elementary Level	8,22
STEM in Nature	8,26
The Next M-STEP: Michigan's New MSS-aligned Assessment	9,10,28,38
The Science of Storytelling	8,11,21,40
The Secrets to Project Based Learning and Success in STEM	9,10,28,37
Transitioning to NGSS from a Teacher's Point of View	8,10,25,35
Using Exhibits for Inquiry Based Learning	9,30
Using Google Docs in the NGSS Classroom	8,9,25,32

Using Life and Physical Science Assessment Tasks in Project-based Learning	8,26
Using the EQuIP Rubric to Evaluate Instructional Materials	9,30
Using the KLEWS Chart to Organize Elementary Science Instruction	7,14
Using the outdoors to teach about sustainability	7,14
Using theatrics to teach environmental topics	7,19
Vision for STEM Instruction--Panel Discussion	9,13
Why NGSS? Why Now?	8,24

## Later Elementary

"Invade" Your Parks! Students Make a Difference With Interdisciplinary STEM!	30
"TOTALITY" The Great American Eclipse 2017	9,27
3-D State Science Assessment: Design Decisions and Validity Claims	7,20
3-Dimensional Learning in the Elementary Classroom	8,22
Academy of Natural Resources: Professional Development Climbing Higher!	8,21
An Overview of the Environmental Educator Certification (EEC)	7,10,15,34
Andrés Ruza, Geoscientist, National Geographic Explorer	3,9,31
Awards Banquet	1,3,32
Awards Reception	3,32
Bat Behavior - An Inquiry-based Program with Live Animals	8,26
Building A Nature Rich Education	9,31
Challenge Your Students to Make Motors	8,21
Cheap, Easy, Universal Demonstrations for All Areas of Science	7,10,20,36
Demystifying the NGSS with STEMscopes	23
Developing Storylines using KLEWS charts	8,23
ECA Field Trip- As we all transition to the new standards and implement new programs, the next question is how do we manage the materials?	30
Energy: Explained in Terms of Michigan's Electrical Grid	7,10,15,39
Engineering in the New Michigan Science Standards	9,28
Everything Moves...	8,24
Extended Learning: Making the Most of Your Field Trip	9,29
Fall Head Over Heels for Flipping your Classroom!	7,14
Field Trip to MSU Extension Tollgate Education Center and Farm	26,41
Flying Wild Science	9,29
Games, Games, Games	9,31,32
Get Hands On With The FARM Science Lab	21
Get Students Asking Their Own Questions	9,30
Go Outside with Michigan Science Standards Using Project-Based Learning	7,15
Goldilocks Was a Scientist	8,10,27,35
Great Lakes Learning Meets Environmental-STEM and Place-based Stewardship Education Opportunity!	7,17
Help Save Endangered Animals!	7,15
HHMI Movie	9,32
How Can a Sand-rat Simulation Investigate Human Health?	8,21
I'm Not a Rocket Scientist, But...	9,28
Integrating Chromebook with Vernier Technology	7,19
Introduction to MEECS Online Learning Portal	8,24,40
Introduction to NGSS (Next Generation Science Exemplar)	8,25
Invasive Monsters of the Deep	7,16
It's Time to Buddy Up!	7,16
Lloyd's Toolbox of Engineering Ideas and Activities	8,26
Making Informed Decisions about Environmental Impacts: RED-YELLOW-GREEN Ratings	8,24
Making It Real... Cheap!!	7,14
Making Thinking Public: Multiple Options for Recording Student Thinking	7,17
MDE Updates from Assessment and Curriculum/Instruction	7,10,17,35
MEECS Ecosystems and Biodiversity	7,15
MEECS Energy Resources	9,28
MEECS Water Quality	7,20
MESTA Rock Raffle	3,4,5,23,39
MESTA Rock Shop	16,35
MESTA's Free and Inexpensive Earth Materials	28,40
Michigan Mammals	7,19





# Interest Levels

Michigan Trees	8,22	Test at a Time!	8,10, 23,39
MISCIPLAN.com - Michigan Science Professional Learning @ the Network	20	Cool Tools for Electricity & Magnetism	8,25
MSELA Course 2: Science Learning Targets for Leaders	7,19	Cool Tools for Sound & Waves	7,16
MSELA Course 3: Constructing Science PLCs	8,21	Cross Cutting Curriculum with Bog Zombies	25
MSELA Course 4: A 2020 Vision for Science Classrooms	8,27	Defining and Modeling Community Water Problems:	
MSELA Course 5: Department Chair Conversation	9,28	A Mi-STAR Unit	8,21,56
MSS - Taught Outdoors	9,31	Demystifying the NGSS with STEMscopes	23
NGSS - How to Talk 21st Century Science in Elementary	9,28	Developing Storylines using KLEWS charts	8,23
NGSS Engaging Elementary Interactive Notebook Activities for Upper Elementary Classroom	9,31	Earth Science Explorations Using Airborne and Ground-Based Sensors	8,27
Paths to a Growth Mindset	8,24	ECA Field Trip- As we all transition to the new standards and implement new programs, the next question is how do we manage the materials?	30
Pearson Interactive Science K-8	28	Energy in Middle School: Focusing on Transfers, Systems, and Fields	8,26
Phenomenal Science Units: A Comprehensive Science Curriculum for Grades K-5	7,17	Energy: Explained in Terms of Michigan's Electrical Grid	7,10,15,39
Question and Phenomenon Pairs - Starting Storylines	9,27	Engineering Made Easy	8,27
Rube Goldberg, a Metacognitive Activity	8,11,21,41	Everything Moves...	8,24
Salmon in the Classroom 101	7,14	Evolution for Middle School Educators	7,14
Science and Engineering Practices in the NGSS	7,20	Explore Environmental Phenomena with NASA's AREN Project	7,17
Science Notebooks: Making Thinking and Learning in Science Visible	8,23	Extended Learning: Making the Most of Your Field Trip	9,29
Science Talk and Beyond	7,19	Fall Head Over Heels for Flipping your Classroom!	7,14
Shifting to MSS and NGSS through Assessment	8,27	Field Trip to MSU Extension Tollgate Education Center and Farm	26,41
STEM in Nature	8,26	Flying Wild Science	9,29
STEM-gineering	8,24	Formative Assessments--More Than Thumbs up, Thumbs down!	9,31
Stop Aligning Lesson Plans & Start Creating MSS Learning Experiences	9,29	Games, Games, Games	9,31
The Next M-STEP: Michigan's new MSS-aligned assessment	9,10,28,38	Getting to Know the MSS-aligned Mi-STAR Curriculum for Middle Grades	7,15,56
The Reflective Assessment Practice: Improving Science Achievement in 10 Minutes	7,20	GLOBE Teacher Training Workshop for Middle and High School Educators	9,29
The Science of Storytelling	8,11,21,40	Great Lakes Learning Meets Environmental-STEM and Place-based Stewardship Education Opportunity!	7,17
The Secrets to Project Based Learning and Success in STEM	9,10,28,37	Hands On Neuroscience Workshop: Human Electrophysiology	8,11,25
Think Tubes Phenomenon/Modeling	7,14	Hands On Neuroscience Workshop: Invertebrate Spikes!	7,10,20,38
Three-Dimensional Science Performance Assessments	8,22	HHMI Movie	9,32
Transitioning to NGSS from a Teacher's Point of View	8,10,25,35	How can a sand-rat simulation investigate human health?	8,21
Using Exhibits for Inquiry Based Learning	9,30	I'm NO Techie...But Even I Can Do This!	9,29
Using Google Docs in the NGSS Classroom	25,32	I'm Not a Rocket Scientist, But...	9,28
Using Life and Physical Science Assessment Tasks in Project-based Learning	8,26	Integrating Chromebook with Vernier Technology	7,19
Using the EQUiP Rubric to Evaluate Instructional Materials	9,30	Interactions: NGSS-aligned Curriculum Using Project-based Learning Approaches for Physical Science	7,16
Using the KLEWS Chart to Organize Elementary Science Instruction	7,14	Introduction to MEECS Online Learning Portal	8,24,40
Using the outdoors to teach about sustainability	7,14	Introduction to NGSX (Next Generation Science Exemplar)	8,25
Using Theatrics to Teach Environmental Topics	7,19	Invasive Monsters of the Deep	7,16
Vision for STEM Instruction--Panel Discussion	9,31	Invigorate your Photosynthesis and Cellular Respiration	
What's in the Woods?	7,19	Investigations with Algae Beads	7,10,20,37
Where Does Your Water Go?	7,14	IQWST-Making Critical Thinking More than a Cliché Using 3-dimensional Learning	26,37
Why NGSS? Why Now?	8,24	Lloyd's Toolbox of Engineering Ideas and Activities	8,26

## Middle School

"Invade" Your Parks! Students Make a Difference With Interdisciplinary STEM!	30	Making Informed Decisions About Environmental Impacts: RED-YELLOW-GREEN Ratings	8,24
"TOTALITY" The Great American Eclipse 2017	9,27	Making It Real... Cheap!!	7,14
3-D State Science Assessment: Design Decisions and Validity Claims	7,20	Making Thinking Public: Multiple Options for Recording Student Thinking	7,17
Academy of Natural Resources: Professional Development Climbing Higher!	8,21	MDE Updates from Assessment and Curriculum/Instruction	7,10,17,35
An Overview of the Environmental Educator Certification (EEC)	7,10,15,34	MEECS Ecosystems and Biodiversity	7,15
Andrés Ruza, Geoscientist, National Geographic Explorer	3,9,31	MEECS Energy Resources	9,28
Asking Questions About Our Changing Climate: A Mi-STAR Unit	8,25	MEECS Water Quality	7,20
Awards Banquet	1,3,32	MESTA Rock Raffle	3,4,5,23,39
Awards Reception	3,32	MESTA Rock Shop	16,35
Bat Behavior - An Inquiry-based Program with Live Animals	8,26	MESTA's Free and Inexpensive Earth Materials	28,40
Biology's Best Engaged! Inquiry-Based Lessons & Engagement Strategies	8,22	Michigan Mammals	7,19
Building A Nature Rich Education	9,31	Michigan Trees	8,22
Card Sort Extravaganza!	8,24	Middle School Share-a-thon	8,26
Challenge Your Students to Make Motors	8,21	MISCIPLAN.com - Michigan Science Professional Learning @ the Network	20
Cheap, Easy, Universal Demonstrations for All Areas of Science	7,10,20,36	Modeling Energy Transformation Systems to Get Off the Grid: A Mi-STAR Unit	9,29,56
Classifying Space Objects	8,27	Modeling Learning Labs - Job Embedded PD	8,24
Conserving Giant Panda Populations: One Hormone		Modeling the Introduction of a New Species: NGSS Ecology	9,30

# Interest Levels

## Middle School *continued*

Modeling--Leveraging this Practice in Science and Math	8,22
MSELA Course 2: Science Learning Targets for Leaders	7,19
MSELA Course 3: Constructing Science PLCs	8,21
MSELA Course 4: A 2020 Vision for Science Classrooms	8,27
MSELA Course 5: Department Chair Conversation	9,28
MSELA: Course 1: Choosing a Science Course Pathway	7,16
Neuroscience for the 99%	2,3,4,6,9,14,33
NGSS Engaging Elementary Interactive Notebook Activities for Upper Elementary Classroom	9,31
NGSS Yourself	7,11,17,42
Observe, Investigate and Enjoy: New Conservation Education Toolkit	8,27
Paths to a Growth Mindset	8,24
Pearson Interactive Science K-8	28
Prospecting for Mineral Ore	9,29
Question and Phenomenon Pairs - Starting Storylines	9,27
Renewable Energy Dashboard for Student Education	7,9,17,32
Rube Goldberg, a Metacognitive Activity	8,11,21,41
Salmon in the Classroom 101	7,14
Science Notebooks: Making Thinking and Learning in Science Visible	8,23
Shifting to MSS and NGSS through Assessment	8,27
STEM in Nature	8,26
Stop Aligning Lesson Plans & Start Creating MSS Learning Experiences	9,29
Strategies For Building Inquiry and Science Practices Into Your Labs	9,29
Teaching Chemistry to Make Thinkers	9,28
The Next M-STEP: Michigan's New MSS-aligned Assessment	9,10,28,38
The Reflective Assessment Practice: Improving Science Achievement in 10 Minutes	7,20
The Science of Storytelling	8,11,21,40
The Secrets to Project Based Learning and Success in STEM	9,10,28,37
Think Tubes Phenomenon/Modeling	7,14
Three-Dimensional Science Performance Assessments	8,22
Transitioning to NGSS from a Teacher's Point of View	8,10,25,35
Trophic Cascades: Bottom Up and Top Down Controls in Ecosystems	8,27
Ups and Downs of Science Modeling: A Wavy Phenomenon	7,15
Using Exhibits for Inquiry Based Learning	9,30
Using Google Docs in the NGSS Classroom	25,32
Using Inquiry to Tackle Misconceptions about Kinematics and Newton's Laws	7,19
Using Life and Physical Science Assessment Tasks in Project-based Learning	8,26
Using the EQUiP Rubric to Evaluate Instructional Materials	9,30
Using the Outdoors to Teach About Sustainability	7,14
Using Theatrics to Teach Environmental Topics	7,19
Using World Water Monitoring Challenge to Engage Students in Practices	7,14
Utilizing CarbonTIME in the classroom: NGSS science practices in action	7,15
Vision for STEM Instruction--Panel Discussion	9,31
Waves	7,16
What Does Three-Dimensional Science Learning Look and Sound Like?	9,30
What's in the Woods?	7,19
Where Does Your Water Go?	7,14
Why NGSS? Why Now?	8,24

## High School

"Invade" Your Parks! Students Make a Difference with Interdisciplinary STEM!	9,38
"TOTALITY" The Great American Eclipse 2017	9,27
3-D Robotic Printing Additive Manufacturing Platforms	7,17
3-D State Science Assessment: Design Decisions and Validity Claims	7,20
Academy of Natural Resources: Professional Development Climbing Higher!	8,21
An Overview of the Environmental Educator Certification (EEC)	7,10,15,34

Andrés Ruza, Geoscientist, National Geographic Explorer	3,9,31
Asking Questions About Our Changing Climate: A Mi-STAR Unit	8,25,56
Awards Banquet	1,3,32
Awards Reception	3,32
Baby Bottle Rocket Stoichiometry	7,16
Bat Behavior - An Inquiry-based Program with Live Animals	8,26
Biology's Best Engaged! Inquiry-Based Lessons & Engagement Strategies	8,22
Biomes and Invasive Species	7,19
Building A Nature Rich Education	9,31
Card Sort Extravaganza!	8,24
Cell Differentiation and Gene Expression	8,24
Challenge Your Students to Make Motors	8,21
Cheap, Easy, Universal Demonstrations for All Areas of Science	7,10,20,36
Conserving Giant Panda Populations: One Hormone Test at a Time!	8,10,23,39
Cool Tools for Electricity & Magnetism	8,25
Cool Tools for Sound & Waves	7,16
Cross Cutting Curriculum with Bog Zombies	25
Demystifying the NGSS with STEMscopes	23
Developing Storylines using KLEWS charts	8,23
Earth Science Explorations Using Airborne and Ground-Based Sensors	8,27
ECA Field Trip- As we all transition to the new standards and implement new programs, the next question is how do we manage the materials?	30
Energy: Explained in terms of Michigan's Electrical Grid	7,10,15,39
Engaging Students in Reflective Practices in Science Education	7,16
Enhancing Curriculum Through Student-Developed Research Projects	8,22
Explore Environmental Phenomena with NASA's AREN Project	7,17
Extended Learning: Making the Most of Your Field Trip	9,29
Fall Head Over Heels for Flipping your Classroom!	7,14
Field Trip to MSU Extension Tollgate Education Center and Farm	26,41
Formative Assessments--More Than Thumbs up, Thumbs down!	9,31
Frog Wars: Genotype to Phenotype to Natural Selection	8,26
Games, Games, Games	9,31
GLOBE Teacher Training Workshop for Middle and High School Educators	9,29
Great Lakes learning meets environmental-STEM and place-based stewardship education opportunity!	7,17
Hands On Neuroscience Workshop: Human Electrophysiology	8,11,25
Hands On Neuroscience Workshop: Invertebrate Spikes!	7,10,20,38
HMI Movie	9,32
I'm NO Techie...But Even I Can Do This!	9,29
Increasing Engagement in Physics through Project based Learning	9,30
Integrating Chromebook with Vernier Technology	7,19
Interactions: NGSS-aligned Curriculum Using Project-based Learning Approaches for Physical Science	7,16
Introduction to NGSX (Next Generation Science Exemplar)	8,25
Invasive Monsters of the Deep	7,16
Invigorate your Photosynthesis and Cellular Respiration Investigations with Algae Beads	7,10,20,37
Kinesthetic Chemistry	9,30
Lloyd's Toolbox of Engineering Ideas and Activities	8,26
Making Informed Decisions about Environmental Impacts: RED-YELLOW-GREEN Ratings	8,24
Making Thinking Public: Multiple Options for Recording Student Thinking	7,17
MDE Updates from Assessment and Curriculum/Instruction	7,10,17,35
MESTA Rock Raffle	3,4,5,23,39
MESTA Rock Shop	16,35
MESTA's Free and Inexpensive Earth Materials	28,40
MISCIPLAN.com - Michigan Science Professional Learning @ the Network	20
Modeling Energy Transformation Systems to Get Off the Grid: A Mi-STAR Unit	9,29,56
Modeling Learning Labs - Job Embedded PD	8,24
Modeling--Leveraging this Practice in Science and Math	9,30



# Interest Levels

MSELA Course 2: Science Learning Targets for Leaders _____	7,19	Climbing Higher! _____	8,21
MSELA Course 3: Constructing Science PLCs _____	8,21	An Overview of the Environmental Educator Certification (EEC) _	7,10,15,34
MSELA Course 4: A 2020 Vision for Science Classrooms _____	8,27	Andrés Ruzo, Geoscientist, National Geographic Explorer _____	3,9,31
MSELA Course 5: Department Chair Conversation _____	9,28	Awards Banquet _____	1,3,32
MSELA: Course 1: Choosing a Science Course Pathway _____	7,16	Awards Reception _____	3,32
Neuroscience for the 99% _____	2,3,4,6,9,14,33	Baby Bottle Rocket Stoichiometry _____	7,16
Observe, Investigate and Enjoy: New Conservation Education Toolkit _____	8,27	Bat Behavior - An Inquiry-based Program with Live Animals _____	8,26
Overcoming Challenges within the Modeling Chemistry Curriculum _____	8,24	Biology's Best Engaged! Inquiry-Based Lessons & Engagement Strategies _____	8,22
Paths to a Growth Mindset _____	8,24	Conserving Giant Panda Populations: One Hormone Test at a Time! _____	8,10,23,39
Phenomena and Evidenced Based Learning in Chemistry and Physics _____	8,22	Cool Tools for Electricity & Magnetism _____	8,25
Photosynthesis and Respiration Shuffle _____	8,22	Cool Tools for Sound & Waves _____	7,16
Prospecting for Mineral Ore _____	9,29	Developing Storylines using KLEWS charts _____	8,23
Putting Together the 8 Essential Pieces of the PBL Pie _____	8,22	ECA Field Trip- As we all transition to the new standards and implement new programs, the next question is how do we manage the materials? _____	30
Question and Phenomenon Pairs - Starting Storylines _____	9,27	Engaging Students in Reflective Practices in Science Education _____	7,16
Renewable Energy Dashboard for Student Education _____	7,9,17,32	Fall Head Over Heels for Flipping your Classroom! _____	7,14
Rube Goldberg, a Metacognitive Activity _____	8,11,21,41	Hands On Neuroscience Workshop: Human Electrophysiology _____	8,11,25
Science, Media, and Art _____	7,20	Hands On Neuroscience Workshop: Invertebrate Spikes! _____	7,10,20,38
Shifting to MSS and NGSS through Assessment _____	8,27	HHMI Movie _____	9,32
Solving the HS Course Sequence Puzzle - Integrating Earth Science _____	8,23	Integrating Chromebook with Vernier Technology _____	7,19
STEM in Nature _____	8,26	Introduction to NGSX (Next Generation Science Exemplar) _____	8,25
Stop Aligning Lesson Plans & Start Creating MSS Learning Experiences _____	9,29	Invasive Monsters of the Deep _____	7,16
Storytelling in Biology and AP Biology _____	7,16	Invigorate your Photosynthesis and Cellular Respiration Investigations with Algae Beads _____	7,10,20,37
Strategies For Building Inquiry and Science Practices Into Your Labs _____	9,29	Lloyd's Toolbox of Engineering Ideas and Activities _____	8,26
Teaching About Climate Change in Biology _____	7,20	Making Thinking Public: Multiple Options for Recording Student Thinking _____	7,17
Teaching Chemistry to Make Thinkers _____	9,28	MESTA Rock Raffle _____	3,4,5,23,39
The Next M-STEP: Michigan's new MSS-aligned assessment _____	9,10,28,38	MESTA Rock Shop _____	16,35
The Secrets to Project Based Learning and Success in STEM _____	9,10,28,37	MESTA's Free and Inexpensive Earth Materials _____	28,40
Think Tubes Phenomenon/Modeling _____	7,14	MISCIPLAN.com - Michigan Science Professional Learning @ the Network _____	20
Three-Dimensional Science Performance Assessments _____	8,22	Modeling Learning Labs - Job Embedded PD _____	8,24
Tired of one word answers? Try some of these strategies! _____	8	Modeling--Leveraging this Practice in Science and Math _____	9,30
Transitioning to NGSS from a Teacher's Point of View _____	3,4,6,8,10,25,35	MSELA Course 3: Constructing Science PLCs _____	8,21
Transitioning to NGSS in Chemistry _____	9,28	MSELA Course 5: Department Chair Conversation _____	9,28
Tricks of the Trade _____	7,17	Neuroscience for the 99% _____	2,3,4,6,9,14,33
Trophic Cascades: Bottom Up and Top Down Controls in Ecosystems _____	8,27	Paths to a Growth Mindset _____	8,24
Using Exhibits for Inquiry Based Learning _____	9,30	Question and Phenomenon Pairs - Starting Storylines _____	9,27
Using Google Docs in the NGSS Classroom _____	25,32	Rube Goldberg, a Metacognitive Activity _____	8,11,21,41
Using Inquiry to Tackle Misconceptions about Kinematics and Newton's Laws _____	7,19	Strategies For Building Inquiry and Science Practices Into Your Labs _____	9,29
Using Life and Physical Science Assessment Tasks in Project-based Learning _____	8,26	The Next M-STEP: Michigan's new MSS-aligned assessment _____	9,10,28,38
Using the EQUiP Rubric to Evaluate Instructional Materials _____	9,30	Transitioning to NGSS from a Teacher's Point of View _____	3,4,6,8,10,25,35
Using the outdoors to teach about sustainability _____	7,14	Trophic Cascades: Bottom Up and Top Down Controls in Ecosystems _____	8,27
Using theatrics to teach environmental topics _____	7,19	Using Google Docs in the NGSS Classroom _____	9,30
Using World Water Monitoring Challenge to Engage Students in Practices _____	7,14	Using the EQUiP Rubric to Evaluate Instructional Materials _____	9,30
Utilizing CarbonTIME in the classroom: NGSS science practices in action _____	7,15	Using the outdoors to teach about sustainability _____	7,14
Vision for STEM Instruction--Panel Discussion _____	9,31	Vision for STEM Instruction--Panel Discussion _____	9,31
What Does Three-Dimensional Science Learning Look and Sound Like? _____	9,30	What's in the Woods? _____	7,19
What's in the Woods? _____	7,19		
Why NGSS? Why Now? _____	8,24		

## College Level

"Invade" Your Parks! Students Make a Difference With Interdisciplinary STEM! _____	30
"TOTALITY" The Great American Eclipse 2017 _____	9,27
3-D State Science Assessment: Design Decisions and Validity Claims _____	7,20
Academy of Natural Resources: Professional Development	

# MTSA Region Directors

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## Region 1 Director - Donna Hertel

Portage Northern High School  
1000 Idaho  
Portage, MI 49024  
dhertel@portageps.org

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## Region 2 Director - Rachel Badanowski

47818 West Huron River Dr.  
Belleville, MI 48111  
ae5379@wayne.edu

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## Region 3 Director - Linda Bradlin

Benjamin Carson High School  
3645 Haverhill Street  
Detroit, MI 48224  
linda.bradlin@detroitk12.org

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## Region 4 Director - Susan Tate

5122 Lakeview Street  
Montague, MI 49437  
susantate@whitehallschools.net

---

## Region 5 Director - Conni Crittenden

603 Ardson Road  
East Lansing, MI 48823  
crittec@gmail.com

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## Region 6 Director - Brian Peterson

200 River Place, Unit 35  
Detroit, MI 48207  
bpeterson@rochester.k12.mi.us

---

## Region 7 Director - Terry Grabill

Fremont Middle School  
500 Woodrow  
Fremont, MI 49412  
tgrabill@fremont.net

---

## Region 8 Director - David Brown

Bullock Creek Middle School  
644 S. Badour Road  
Midland, MI 48640  
brownd@bcreek.org

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## Region 9 Director - Jennifer Richmond

5772 Wildcat Road  
Crowell, MI 48422  
jlzrichmond@gmail.com

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## Region 10 Director - Carolyn Mammen

10878 Woodview Ter  
Traverse City, MI 49686  
cmammen@charter.net

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## Region 11 Director

Position currently vacant

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## Region 12 Director - Jackie Huntoon

MI Technological University  
503 A. Admin. Bldg., 1400 Townsend Drive  
Houghton, MI 49931  
jeh@mtu.edu

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## Region 13 Director - Chris Standerford

Northern Michigan University  
401 Presque Isle, West Science 2805  
Marquette, MI 49855  
cstander@nmu.edu

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## Region 14 Director - Lynn Thomas

8949 Stagecoach Q.5 Ave.  
Gladstone, MI 49837  
lynnthomas@eskymos.com



# Award Winners

NOTE: This is only a list of the last five years of award winners. For a full list of the award winners since 1974, contact the MSTA office.

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## 2013

Elementary Science Teacher of the Year _____	Diane Krzyaniak
Middle School Science Teacher of the Year _____	Monica Harvey
High School Science Teacher of the Year _____	Erika Fature
College Science Teacher of the Year _____	Dr. James McDonald
Informal Science Educator _____	Gerald Pahl
Distinguished Service Award _____	Roberta Cramer
Dan Wolz Clean Water Education Grant _____	Dave Chapman

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## 2014

Elementary Science Teacher of the Year _____	Julee Cowher
Middle School Science Teacher of the Year _____	Mark Koschmann
High School Science Teacher of the Year _____	Richard Eberly
College Science Teacher of the Year _____	Dr. Mary Brown
Informal Science Educator _____	Paula Gangopadhay
Distinguished Service Award _____	David McCloy
Distinguished Service Award _____	Mike Klein
The George G. Mallinson Award _____	Joseph Krajcik
Dan Wolz Clean Water Education Grant _____	Donald Hammond/Tammy Coleman

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## 2015

Teacher of Promise _____	Ashley Meyer
Elementary Science Teacher of the Year _____	Patricia McNinch
Middle School Science Teacher of the Year _____	Holly McGoran
High School Science Teacher of the Year _____	Deanna Cullens
College Science Teacher of the Year _____	Dr. Bradley Ambrose
Administrator of the Year _____	Greg Johnson
Informal Science Educator _____	Stephen Stewart
Distinguished Service Award _____	Betty Crowder
The George G. Mallinson Award _____	David Bydlowski
Dan Wolz Clean Water Education Grant _____	John Travis/Josh Nichols

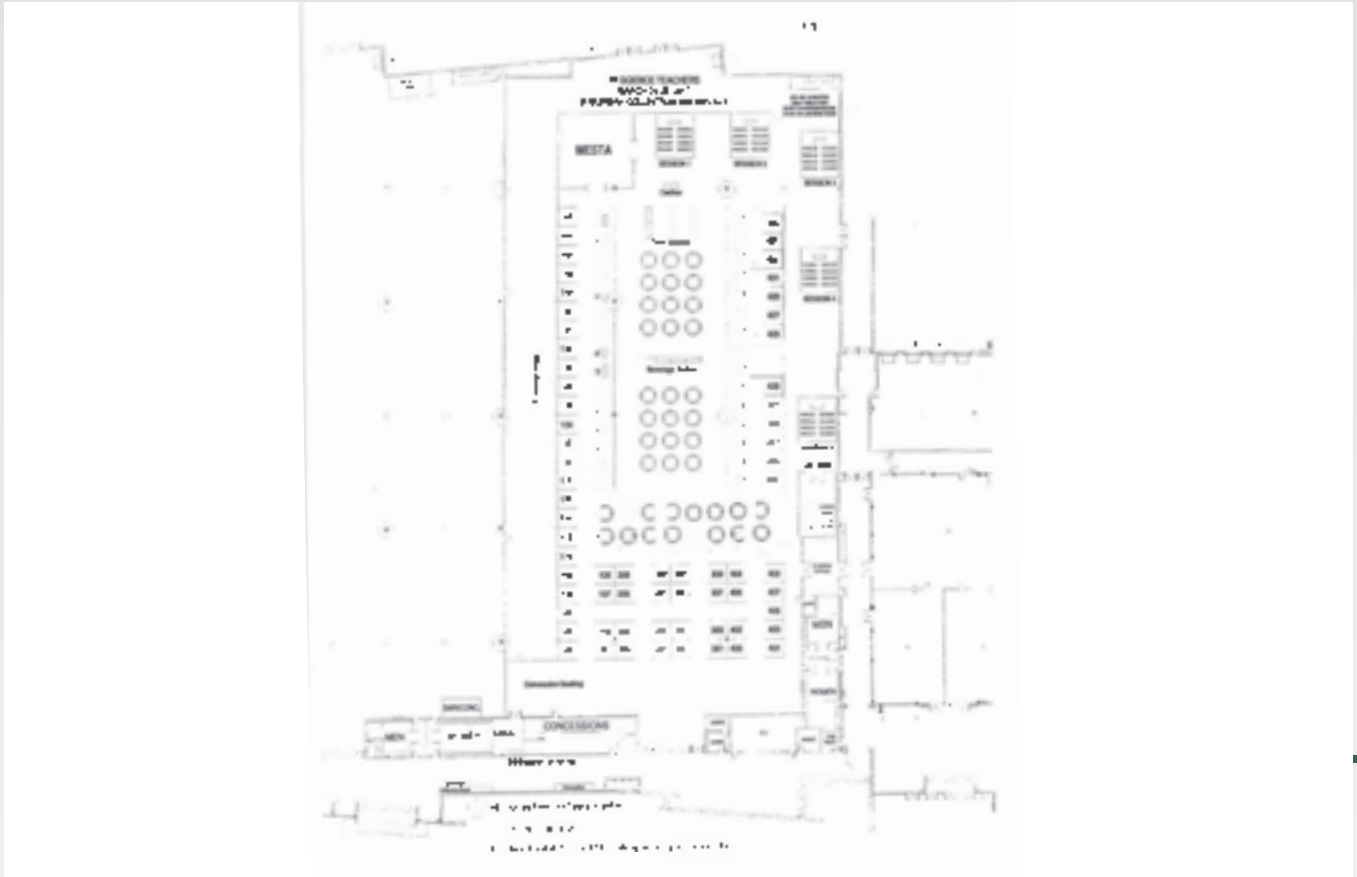
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## 2016

Teacher of Promise _____	Dakota Bahlau
Teacher of Promise _____	Paula Gentile
Elementary Science Teacher of the Year _____	Sherri Hane
Middle School Science Teacher of the Year _____	Colleen Polydoros
High School Science Teacher of the Year _____	Joshua Barclay
College Science Teacher of the Year _____	Dr. Mark Francek
Informal Science Educator _____	Janet Vail
MSTA Special Award _____	Stephen Best
Distinguished Service Award _____	Cheryl Hach
Dan Wolz Clean Water Education Grant _____	Lea Sevigny/Connie Atkisson
The George G. Mallison Award _____	George G. and Jacqueline Mallison

# Exhibitor Information

## Exhibitor Map



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**309 — Accelerate Learning**  
5177 Richmond Ave. #1025  
Houston, TX 77056

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**118 — Activate Learning**  
765 Manor Hill Place  
Sugar Grove, IL 60554

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**T18 — AgroLiquid Iqhub**  
3055 M-21  
St. Johns, MI 48879  
(989) 227-3847

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**T23 — Alma College**  
614 W Superior St.  
Alma, MI 48880  
(989) 463-7299

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**T1 — Ann Arbor Hands on Museum**  
220 E Ann St.  
Ann Arbor, MI 48104  
(734) 995-5439

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**407, 409 — Arbor Scientific**  
1556 Woodland Drive  
Saline, MI 48176

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**T3 — AWWA and MWEA - Youth Ed. Committee**  
12649 Richfield Ct.  
Livonia, MI 48150  
(734) 469-5610

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**T2 — Battle Creek Outdoor Education Center - Clear Lake Camp**  
10160 S M-37 Hwy.  
Dowling, MI 49050  
(269) 721-8161

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**T4 — BaySail - Appledore Tall Ships**  
107 Fifth Street, Upper Floor  
Bay City, MI 48708  
(989) 895-5193



# Exhibitor Information

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## **T8 — Bear Trust International**

PO Box 4006  
Missoula, MT 59806

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## **415 — Bedford, Freeman & Worth High School Publishers**

300 American Metro Blvd, Suite 140  
Hamilton, NJ 08619

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## **201, 203 — Benz Microscope Optics Center, Inc.**

3980 Varsity Dr.  
Ann Arbor, MI 48108

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## **122 — BES Solutions**

15101 Cleat Street  
Plymouth, MI 48170

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## **100 — Bio-Rad Laboratories**

3720 Flowerfield Road  
Charlotte, NC 28210  
(704) 491-2107

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## **120 — Carolina Biological Supply**

2700 York Road  
Burlington, NC 27215-3398  
(800) 334-5551

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## **T27 — CMU - Biological Station**

Central Michigan University ET 200  
Mt. Pleasant, MI 48859  
(989) 774-4400

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## **405 — Consumers Energy**

4000 Clay Ave. SW  
Grand Rapids, MI 49548

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## **303 — Corporate Travel Service**

23420 Ford Road  
Dearborn Heights, MI 48127  
(313) 565-8888

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## **306, 308 — Delta Education/Foss**

80 Northwest Blvd  
Nashua NH 03063  
(603) 579-3467

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## **T30 — DEQ**

525 W. Allegan St.  
Lansing, MI 48933  
(517) 284-6867

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## **423 — Earth Force**

PO Box 12228  
Denver, CO 80201  
(313) 808-0062

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## **T9 — Ecology Center**

339 E. Liberty St., Suite 300  
Ann Arbor, MI 48104

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## **209 — ExploreLearning**

110 Avon Street, Suite 300  
Charlottesville, VA 22902  
(610) 471-0433

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## **406,408 — Flinn Scientific, Inc.**

770 N. Raddant Road  
Batavia, IL 60510

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## **TBD — Frey Scientific | CPO Science**

PO Box 1017  
Appleton, WI

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## **402 — Houghton Mifflin Harcourt**

1731 Chesapeake Lane, Apt 3  
Schaumburg, IL 60193

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## **T5 — Inland Seas Education Association**

P.O. Box 218, 100 Dame St.  
Suttons Bay, MI 49682

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## **T22 — Integrated Science Program**

C-1-120 Mackinac Hall  
Allendale, MI 49401  
(616) 331-2515

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## **417 — It's About Time**

333 North Bedford  
Mount Kisco, NY 10549  
(914) 273-2233

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## **413 — KEVA Planks Education**

6719 Rocky Bar Road  
Elkton, VA 22827

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## **LAB-AIDS room/Exh Hall — Lab-Aids**

1036 Ranch Road  
Bluffton, IN 46714

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# Exhibitor Information

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## 107 — Learning A-Z

1840 E River Rd, #320  
Tucson, AZ 85718

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## 200, 202 — LEGO Education

501 Boylston Street, Suite 4103  
Boston, MA 02116

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## T12 — Library of Michigan

702 W. Kalamazoo St.  
Lansing, MI 48915

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## T21 — Longway Planetarium

1310 E. Kearsley St.  
Flint, MI 48503

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## T7 — MAEOE

Box 271  
Lansing, MI 48912

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## 206,208 — McGraw-Hill Education

8787 Orion Place  
Columbus, OH 43240

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## T15 — MDNR Outdoor Adventure Center

1801 Atwater  
Detroit, MI 48207  
(313) 396-6876

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## 403 — Meemic

1685 N Opdyke Rd.  
Auburn Hills, MI 48326

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## 114 — Metropolitan Detroit Science Teachers Association

21610 Kenosha Street  
Oak Park, MI 48237  
(248) 542-1781

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## 130,132 — MI Dept. of Natural Resources

525 West Allegan Street  
Lansing, MI 48933

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## T26 — Michigan Antibiotic Resistance Reduction Coalition

49632 Nautical Dr.  
Chesterfield Twp, MI 48047

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## T11 — Michigan Chemistry Council

326 W Ottawa St.  
Lansing, MI 48933  
(517) 372-8898

---

## T20 — Michigan Department of Health and Human Services

333 S. Grand Ave.  
Lansing, MI 48909

---

## 140,142,144,146 — Michigan Farm Bureau

7373 W. Saginaw  
Lansing, MI 48917

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## 421 — Michigan Math and Science Centers

1390 Eisenhower Place  
Ann Arbor, MI 48108  
(734) 418-1479

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## T29 — Michigan Science Center

5020 John R. Street  
Detroit, MI 48202  
(313) 577-8400 x482

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## T6 — Michigan Sea Grant

520 E Liberty St. Suite 310  
Ann Arbor, MI 48104

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## 307 — Michigan Technological University

840 Dow Bldg, 1400 Townsend Drive  
Houghton, MI 49931  
(502) 528-7736

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## T19 — Michigan United Conservation Clubs

2101 Wood  
St.Lansing, MI 48912  
(517) 371-1506

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## 116 — Michigan Virtual University

3101 TECHNOLOGY BLVD STE G, G  
Lansing, MI 48910

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## 104,106 – MSTA

1390 Eisenhower Place  
Ann Arbor, MI 48108  
(734) 973-0433

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# Exhibitor Information

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**108 — MSTA Book Store**

1390 Eisenhower Place  
Ann Arbor, MI 48108  
(734) 973-0433

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**T13 — MSU College of Osteopathic  
Medicine Office of Admissions**

965 Fee Road, A136 East Fee Hall  
East Lansing, MI 48824  
(517) 353-7740

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**T10 — MSU Kellogg Biological Station**

3700 East Gull Lake Dr.H  
Hickory Corners, MI 49060  
(269) 671-2360

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**400 — Nasco Education**

901 Janesville Avenue  
Fort Atkinson, WI 53538  
(800) 558-9595

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**301 — National Geographic  
Learning | Cengage**

11834 Magnolia Falls Drive  
Jacksonville, FL 32258

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**110 — NSTA**

1840 Wilson Blvd.  
Arlington, VA 22201  
(703) 243-7100

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**112 — NSTA Press**

7676 W Harbor Hwy, P O Box 649  
Glen Arbor, MI 49636

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**T28 — Organization for Bat Conservation**

39221 Woodward Ave  
Bloomfield Hills, MI 48303

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**102 — PASCO Scientific**

10101 Foothills Blvd  
Roseville, CA 95747

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**101,103 — PEARSON**

1900 E Lake Avenue  
Glenview, IL 60025  
(847) 486-2817

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**419 — Potter Park**

1301 S. Pennsylvania Ave.  
Lansing, MI 48912  
(517) 342-2713

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**124 — Scholastic Library Publishing**

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**126,128 — Square One Education Network**

26100 American Dr.  
Southfield, MI 48034  
(248) 736-7537

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**T17 — Tamarack Camps**

4361 Perryville Road  
Ortonville, MI 48462  
(248) 627-2821

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**300,302 — TCI**

2440 W. El Camino Real, Suite 400  
Mountain View, CA 94040  
(650) 390-6600

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**431 — Texas Instruments**

13532 N. Central Expressway MS 3817  
Dallas, TX 75243  
(469) 323-6385

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**109 — The INQUISITIVE PIONEER**

7430 Plainfield  
Dearborn Heights, MI 48127  
(313) 561-5261

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**T25 — The Mallinson Institute for Science  
Education**

3241 Wood Hall, MS 5444,  
1903 W. Michigan Ave.  
Kalamazoo, MI 49008-5444  
(269) 387-5398

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**401 — The Markerboard People**

1611 N. Grand River Ave.  
Lansing, MI 48906  
(800) 379-3727

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**T16 — University of Michigan - Dearborn**

19000 Hubbard Drive FCS 261  
Dearborn, MI 48126  
(313) 593-5133

# Exhibitor Information

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## T24 — Van Andel Education Institute

1350 Sundance Court  
Holland, MI 49424

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## 207 — Vernier Software & Technology

13979 SW Millikan Way  
Beaverton, OR 97005  
(888) 837-6437

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## 138 – Wayne State University — College of Education

5425 Gullen Mall  
Detroit, MI 48202  
(313) 577-1620

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## 136 – Wayne State University — College of Liberal Arts & Sciences

4841 Cass Ave  
Detroit, MI 48201  
(313) 577-2515

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## 134 — Wayne State University-School of Medicine

540 E. Canfield St.,  
Dept. of Physiology,  
Wayne State University  
Detroit, MI 48201

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## T14 — YMCA Hayo-Went-Ha Camps, State YMCA of Michigan

919 N East Torch Lake Dr.  
Central Lake, MI 49322  
(231) 544-5915



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Friday, 10:00 am-11:45 am, Gold Room
- **Asking Questions About Our Changing Climate: A Mi-STAR Unit**  
Friday, 1:00 pm-2:45 pm, Gold Room
- **Modeling Energy Transformation Systems to Get Off the Grid: A Mi-STAR Unit**  
Friday, 3:00 pm-4:45 pm, Onyx Room
- **Reducing Natural Hazard Risk: A Mi-STAR Unit**  
Saturday, 8:00 am-9:45 am, Gold Room
- **Natural Resources, Thermal Energy, and the Life of the Stuff We Make: A Mi-STAR Unit**  
Saturday, 10:00 am-11:45 am, Gold Room
- **Making Decisions Regarding Michigan's Changing Ecosystems: A Mi-STAR Unit**  
Saturday, 1:00 pm-2:45 pm, Gold Room

Mi-STAR is a partnership of public higher education and K-12 schools in Michigan. Mi-STAR is funded by the Herbert H. and Grace A. Dow Foundation.

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