FRIDAY, MARCH 2

8:00 am - 11:45 am Capitol 3

MEECS - Energy Resources (Four Sessions)

Jessica Wagenmaker, MEECS

Topic:
Audience: 3-5, MS
Type: Educator Session

8:00 am - 8:45 am Meeting Room 101

Science Talk

Kathleen Schutter, Delta Educatin; Roxane Dupuis, Delta Education; Katherine Armstrong, Delta Education;
Students experience science but also productive talk to make sense of what they have learned. Experience a middle school lesson that includes strategies and resources to use in classrooms tomorrow.

Topic: General Session (not specific to any content area)
Audience: MS
Type: Vendor Session

8:00 am - 8:45 am Meeting Room 103

Incorporating STEM into the Classroom

Gary Curts, Activate Learning
Bringing STEM into the classroom by involving students in engineering design to solve a real-world problem gives students the opportunity to apply CCCs and DCIs as well as demonstrate NGSS SEPs.

Topic: Engineering Design
Audience: HS
Type: Vendor Session

8:00 am - 8:45 am Meeting Room 201

An Administrators Guide to the New Michigan Science Standards through the lens of Phenomenal Science (curriculum) & 3DSPA (assessment)

Matthew Samocki, Central Michigan Science, Mathematics, Technology Center; Darcy McMahon, Central Michigan Science, Mathematics, Technology Center; Jennel Matin-Powell, Central Michigan Science, Mathematics, Technology Center
This presentation will include information regarding the shift to the new Michigan Science Standards including curriculum, assessment, instructional strategies, and applications for teacher observations.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5
Type: Educator Session

8:00 am - 8:45 am Meeting Room 202

Teaching about Floods Using Extreme Weather Events

Nickolaas Vlietstra, Grand valley State University; Steve Mattox, Grand Valley State University
Extremely intense rainfall in Langley, Arkansas in 2010 resulted in 20 deaths. Using classroom ready materials we examine the details of the flood and compare to potential events in Michigan.

Topic: Earth Science
Audience: MS, HS, Coll
Type: Educator Session

8:00 am - 8:45 am Meeting Room 203

Making Grades More Meaningful

Brian Langley, Novi High School,
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.

Topic: General Session (not specific to any content area), Assessment
Audience: MS, HS
Type: Educator Session

8:00 am - 8:45 am Meeting Room 204

Making Sense of Classroom Investigations Through Writing and Talking

Susan Disch, ETHOS Science Center; Lisa Nyers, ETHOS Science Center
There are many benefits to having students both write and talk in the science classroom. Learn how to use both for increased student understanding

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS
Type: Educator Session

8:00 am - 8:45 am Banquet 1

Creating 3D Learning: Modeling, Argumentation and Explanation in your classroom through NGSX study groups!

James Emmerling, Genesee Area Math/Science Center,
Come learn more about NGSX and why it is important for you and your colleagues as a way to learn how to bring the Michigan Science Standards to your classroom!

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS, Coll
Type: Educator Session

8:00 am - 8:45 am Banquet 2

Supporting Early Literacy Development and the Michigan Science Standards

Wendi Vogel, Kent Intermediate School District
Using the Early Literacy Documents from the Michigan Department of Education, participants will experience a model science lesson and look for evidence on how science supports early literacy.

Topic: General Session (not specific to any content area), MSELA Strand
Audience: K-2, 3-5
Type: Educator Session

8:00 am - 8:45 am Banquet 4

Phenomenal Unit Plan

Patti Richardson, Forest Hills Central High School; Kristy Butler, Forest Hills Central High School
Hear how we have used phenomena to start our unit and are guiding students to ask questions to build the storyline of a unit. Students are keeping track of the questions they create and evidence they gain to generate a working model of the concept being taught in a template. We will go through one unit to show our process. Handouts and access to files will be shared.

Topic: General Session (not specific to any content area), Biology
Audience: HS

Type: Educator Session

FRIDAY, MARCH 2

8:00 am - 8:45 am Banquet 5

Health in Our Hands: Using online simulations to explain phenomena

Idit Adler, CREATE for STEM Institute/ Michigan State Universtiy; Darlene McClendon, Eisenhower Elementary/Flint Community Schools; Renee Bayer, CREATE for STEM Institute/ Michigan State University;

Experience free, online, classroom-ready simulations to engage students in scientific practices to explain a phenomenon. We will demonstrate how to use a structured, guided, open framework to scaffold student investigation.

Topic: General Session (not specific to any content area), Biology
Audience: MS
Type: Educator Session

8:00 am - 8:45 am Banquet 8

Building a Summer Science Field course

Chris Bolhuis, Hudsonville High School; Dario Lirio, Hudsonville High School

Hudsonville offers an elective field course for incoming seniors in geology and biology. 26 students and 2 teachers travel to the Western U.S. visiting and camping in many of our National Parks.

Topic: Biology, Earth Science, Environmental Education
Audience: HS
Type: Educator Session

8:00 am - 8:45 am Capitol 1

Earth System Science Resources to Use on Monday! Free from NOAA to You!

June Teisan, NOAA

The National Oceanic and Atmospheric Administration offers a wide array of free educational resources for K-12 teachers. Data analysis activities, climate science materials, elementary earth science lessons, weather activities...NOAA has what you need for rich, robust science. Find out more...plus free posters and books while they last!

Topic: Earth Science
Audience: K-2, 3-5, MS, HS
Type: Educator Session

8:00 am - 8:45 am Capitol 2

Teaching Science when you don't know diddly-squat

Tracy D'Augustino, MSU Extension

What is the answer? Who cares? You don't need all the answers to teach science. You simply need an inquisitive mind and a willingness to investigate. It's all about the questions!

Topic: Integrated Science
Audience: K-2, 3-5, MS
Type: Educator Session

8:00 am - 8:45 am Governor

Yeah, Buoy! (Buoyancy Demos)

Jonathan Paddock, Clarkston Jr. High School

Presenter will share a variety of tried and true demos/activities that engage students and help them build a functional understanding of buoyancy.

Topic: Physics
Audience: 3-5, MS, HS
Type: Educator Session

8:00 am - 8:45 am Michigan 1

IB meets the NGSS

Colin Killmer, Portage Northern High School; Michelle Mason, Portage Northern High School; Kathy Mirakovits, Portage Northern High School; Donna Hertel, Portage Northern High School

Join us as we look at ways to include NGSS-style instruction and the SEPs into the upper-level IB courses.

Topic: Biology, Chemistry, Physics
Audience: HS
Type: Educator Session

8:00 am - 8:45 am Michigan 2

"Our Teaching Experiences:" Learning to Recognize our Students' Expertise with an NGSS-aligned Middle Grades Engineering Curriculum

Christina Restrepo Nazar, Michigan State University; Marcos David Gonzalez-Flores, Michigan State University; Selena Bliesener, Sheridan Rd. STEM; Angela Calabrese Barton, Michigan State University; Kathleen Schenkel, Michigan State University

A hands-on presentation focused on researchers and local teachers' experiences using an engineering unit aimed to support all learners in the NGSS engineering practices of defining problems and designing solutions.

Topic: engineering
Audience: MS
Type: Educator Session

8:00 am - 8:45 am Michigan 3

How to start an AP environmental science course (and love it too!)

Karina White, Jenison High School; Chris Groenhout, Grandville High School

This presentation will cover the basics of starting an AP environmental science course from scratch. We will collaborate together and come away with a plan to start new or improve existing courses.

Topic: Environmental Education
Audience: HS
Type: Educator Session

8:00 am - 8:45 am Regency 1

Using Our National Parks to Blend Curriculum

Gabe Knowles, Whitehall District Schools; Noelle Knowles, Grand Valley State University

Do you struggle with creating engaging place-based education opportunities for your students? Join us as we share with you how we designed PbE experiences with our National Parks.

Topic: General Session (not specific to any content area), Integrated Science
Audience: K-2, 3-5, MS, HS
Type: Educator Session

8:00 am - 9:45 am Meeting Room 102

Claims, Evidence, and Reasoning in Action

Marjorie Frank, Houghton Mifflin Harcourt,

Join HMH author, Marjorie Frank, as she leads us through a learning experience that breathes life into science literacy skills using the CER method.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS
Type: Vendor Session

FRIDAY, MARCH 2

8:00 am - 9:45 am Meeting Room 104

Mastering the Chemical Formula

Bill Cline, LAB-AIDS,
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.

Topic: Chemistry
Audience: HS
Type: Vendor Session

8:00 am - 9:45 am Meeting Room 205

Digital Data Nuggets - real research, real data, real classrooms

Marcia Angle, Kellogg Biological Station/Michigan State University ; Elizabeth Schultheis, Kellogg Biological Station/Michigan State University; Melissa Kjelvik, Kellogg Biological Station/Michigan State University;
Students struggling with data? Digital Data Nuggets are free NGSS-aligned resources that help students ask their own questions, explore digital platforms, and utilize reliable sources of LTER data. Hands-on demonstration.

Topic: General Session (not specific to any content area), Environmental Education
Audience: MS, HS, Coll
Type: Educator Session

8:00 am - 9:45 am Banquet 3

What did they say? Student Discourse and the NGSS

Samantha Johnson, Next Gen Science Innovations; Jim Clark

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS
Type: Educator Session

8:00 am - 9:45 am Banquet 6

Make Your Elementary Science Phenomenal! Understanding Phenomenal Science Instructional Strategies in Grades 3-5

Darcy McMahon, Central Michigan Science Mathematics Technology Center; Jennel Martin-Powell, Central Michigan Science Mathematics Technology Center; Matt Samocki, Central Michigan Science Mathematics Technology Center;
Investigate the instructional strategies embedded in this comprehensive FREE elementary science curriculum aligned to MSS. Teachers will leave empowered to implement several strategies from revised 3-5 units with students.

Topic: General Session (not specific to any content area)
Audience: 3-5
Type: Educator Session

8:00 am - 9:45 am Banquet 7

A Mi-STAR Lesson: Comparing Engineering Solutions with a Decision Matrix

Stephanie Tubman, Michigan Technological University
Try out a simple tool that you can use to introduce your students to engineering! Learn how students use this tool to compare solutions. Aligns with MS-ETS1-2. Lesson plans provided.

Topic: General Session (not specific to any content area), Engineering
Audience: MS
Type: Educator Session

8:00 am - 9:45 am Capitol 4

Inexpensive Hands On Chemistry Activities That Help Students Make Connections

Deanna Cullen, Whitehall High School - Retired
Chemistry teachers can practice several hands on activities. Student and teacher documents outline common misconceptions while supporting reflection and discourse to deepen conceptual understanding of the topics.

Topic: Chemistry
Audience: HS
Type: Educator Session

8:00 am - 9:45 am Regency 2

Schoolyard BioBlitz: Connecting Citizen Science to the Classroom

Gabrielle Likavec, Michigan Geographic Alliance; Lisa Marie Tobin, University Center Gaylord
Learn how to engage students in hands-on learning with meaningful connections to the classroom including how to plan a BioBlitz and lessons to extend the learning.

Topic: Biology, Informal Science (museums, nature centers, etc.), Environmental Education
Audience: K-2, 3-5, MS
Type: Educator Session

9:00 am - 10:45 am Meeting Room 103

Structuring Discussion to Be Equitable and Rigorous

Diane Wright, Activate Learning,
Per NGSS, learning is a social endeavor supported by collaborative and communicative norms, which requires teachers to examine and support K–12 students' ways of articulating, making sense of, and evaluating each other's ideas.

Topic: Discourse in Science
Audience: MS
Type: Vendor Session

9:00 am - 10:45 am Meeting Room 202

Science Talks

Noreen Habana, Bad Axe High School,
Promote science talks among your students in a class and between classes. Bring out the misconceptions and help your students learn to have an academic discourse with one another.

Topic: General Session (not specific to any content area), Physics, Earth Science
Audience: MS, HS
Type: Educator Session

9:00 am - 10:45 am Banquet 2

The Coaching Connection: Supporting Best Practice Science Instruction

Mary Burke, Kalamazoo Regional Education Service Agency,
To support the vision of quality Science instruction, a coaching structure is essential. Engage in how to structure a coaching plan that outlines the critical skills necessary for Science instruction.

Topic: MSELA Coaching Strand
Audience: K-2, 3-5, MS, HS
Type: Educator Session

FRIDAY, MARCH 2

9:00 am - 10:45 am Capitol 2

Seeing is Believing: Physics Demonstrations to Energize Your Classroom

Sebastian Jolta, Arbor Scientific
What are the best demos for your classroom? In this new workshop, we have selected the most effective combination of demonstrations to help you illustrate a wide variety of physics concepts, including Newton's laws of force and motion, light, sound, and color science.

Topic: Physics
Audience: MS, HS
Type: Vendor Session

9:00 am - 10:45 am Governor

Hands-on with virtual nuclear research

Zachary Constan, National Superconducting Cyclotron Laboratory; Rich Lund, St. Johns High School
With the digital game "Isotopolis" and dedicated lesson plans, you can introduce your students to the world of rare isotopes (and world-class research at MSU)!

Topic: Physics, Informal Science (museums, nature centers, etc.)
Audience: MS, HS
Type: Educator Session

9:00 am - 10:45 am Michigan 1

Make Your Elementary Science Phenomenal! Understanding Phenomenal Science Instructional Strategies in Grades K-2

Jennel Martin-Powell, Central Michigan Science Mathematics Technology Center; Darcy McMahon, Central Michigan Science Mathematics Technology Center; Matt Samocki, Central Michigan Science Mathematics Technology Center,
Investigate the instructional strategies embedded in this comprehensive FREE elementary science curriculum aligned to MSS. Teachers will leave empowered to implement several strategies from revised K-2 units with students.

Topic: General Session (not specific to any content area)
Audience: K-2
Type: Educator Session

9:00 am - 10:45 am Michigan 3

Inquiry-based Introduction to Gel Electrophoresis

Mindy Lee-Olsen, MiniOne Systems; Richard Chan, MiniOne Systems
Participate in a hands-on electrophoresis lab to teach key principles in alignment with NGSS. MiniOne Electrophoresis System can be used over an entire school year or scaffolded over multiple grade levels.

Topic: Biology, Integrated Science
Audience: MS, HS
Type: Vendor Session

9:00 am - 9:45 am Meeting Room 101

Making Sense of Science Through Notebooks

Kathleen Schutter, Delta Educatin; Roxanne Dupuis, Delta Education; Katherine Armstrong, Delta Education;
Students (and Conference Participants) use notebooks, as all scientists do, to make sense of their learning. Receive strategies and resources that can be used in classrooms tomorrow.

Topic: General Session (not specific to any content area)
Audience: MS
Type: Vendor Session

9:00 am - 9:45 am Meeting Room 201

Renee Bayer, MSU Profs,
Topic:
Audience:
Type:

9:00 am - 9:45 am Meeting Room 203

Becoming a Certified Environmental Educator

Cindy Fitzwilliams-Heck, Ferris State University & Michigan Alliance for Environmental and Outdoor Education,
Discover the requirements for earning an environmental educator certification (EEC) through the Michigan Alliance for Environmental and Outdoor Education (MAEOE). The EEC closely follows state standards and national guidelines (www.maeoe.com).

Topic: Integrated Science, Environmental Education
Audience: K-2, 3-5, MS, HS, Coll
Type: Educator Session

9:00 am - 9:45 am Meeting Room 204

Using Wildlife CSI to Teach Claim, Evidence, Reasoning

Becky Durling, Williamston Community Schools; Jon Gray, Lake Orion Community Schools
Crime Scene Investigation is a great way to teach Claim, Evidence, Reasoning writing. Learn how to incorporate wildlife crime scenes taught at the Academy of Natural Resources into your curriculum.

Topic: General Session (not specific to any content area), Environmental Education
Audience: 3-5, MS, HS
Type: Educator Session

9:00 am - 9:45 am Banquet 1

Aerial Exploration of Environmental Study Sites, Using Kites, Cameras and Other Sensors

David Bydlowski, Wayne RESA; Andy Henry, Wayne RESA; Jeff Bouwman, Shumate Middle School;
Take a look at your environmental study site from 150 meters above ground level. STEM presentation from NASA's AREN Project and the GLOBE Program.

Topic: Earth Science, Environmental Education
Audience: MS, HS
Type: Educator Session

9:00 am - 9:45 am Banquet 4

Weaving Stories Throughout Your Biology Course Using HHMI Biointeractive Resources

Mark Eberhard, St. Clair High School,
Experience how HHMI Biointeractive short films and activities provide engaging stories to weave throughout your life science courses. Stories facilitate students making connections across multiple units. Numerous examples shared!

Topic: Biology, Environmental Education
Audience: MS, HS, Coll
Type: Educator Session

FRIDAY, MARCH 2

9:00 am - 9:45 am Banquet 5

Health in Our Hands: A free life science middle school curriculum

Idit Adler, CREATE for STEM Institute/ Michigan State Universtiy; Renee Bayer, CREATE for STEM Institute/ Michigan State Universtiy; Darlene McClendon, Eisenhower Elementary/Flint Community Schools

"What Controls My Health?" is a free, classroom-ready curriculum about gene-environment interactions using diabetes as the phenomena. Here's an overview of this NGSS-aligned, project-based learning unit accessible online.

Topic: General Session (not specific to any content area), Biology
Audience: MS
Type: Educator Session

9:00 am - 9:45 am Banquet 8

Merging High School Geology with NGSS

Steve Mattox, Grand Valley State University; Ashley Meyer, Hamilton High School; Chris Bolhuis, Hudsonville High School; Claire Sobolak, Grosse Pointe South High School; Brad Stevens, Zeeland High School

High school geology classes need to align with NGSS. We will share course models and resources and discuss ways to match SEPs, CCCs, and DCIs with classroom and fieldtrip content.

Topic: Earth Science, Environmental Education
Audience: HS, Coll
Type: Educator Session

9:00 am - 9:45 am Capitol 1

One Crime Scene; 100 Students! Oh my!

Kathy Mirakovits, Portage Northern High School

Setting up a mock crime scene can be daunting. Learn tips and pitfalls to avoid so that your students can have the opportunity to practice forensic techniques, be challenged, and have fun.

Topic: General Session (not specific to any content area)
Audience: 3-5, MS, HS, Coll
Type: Educator Session

9:00 am - 9:45 am Michigan 2

Online Formative Assessment Tools in Science

Catherine Hamilton, Adlai Stevenson Elementary School ; Ranya Croitori, McIntyre Elementary

Learn to use quick and easy online formative assessments tool in order to gauge the pulse of the class.

Topic: General Session (not specific to any content area), Computer Science / Technology
Audience: K-2, 3-5, MS, HS
Type: Educator Session

9:00 am - 9:45 am Regency 1

Phenomena on the Cheap

Patti Picard, Tawheed Center of Detroit School,

Budget constricted or non-existent? Is Dollar Tree your second home? Here are some cheap and easy phenomena to get your kids thinking and to keep your pockets happy.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5
Type: Educator Session

10:00 am - 10:45 am Meeting Room 101

It's Phenomenal!

Kathleen Schutter, Delta Educatin; Roxane Dupuis, Delta Education; Katherine Armstrong, Delta Education;

One definition of phenomena is "a fact or event of scientific interest susceptible to scientific description and explanation". Experience phenomenal events through a long-standing research-based program. Resources included.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5
Type: Vendor Session

10:00 am - 10:45 am Meeting Room 102

Virtual Field Trips with Google Expeditions

Ann Pearson, Houghton Mifflin Harcourt,

Come experience virtual reality science field trips and learn how to use them to effectively instruct and enhance three-dimensional learning in this hands-on workshop.

Topic: General Session (not specific to any content area), Informal Science (museums, nature centers, etc.)
Audience: K-2, 3-5, MS, HS, Coll
Type: Vendor Session

10:00 am - 10:45 am Meeting Room 201

Super Protection from Superbugs: the Fight Against Antibiotic Resistance

Elaine Bailey, MARR Coalition; Katelin Anderson, Munson Medical Center

Learn about FREE curriculum that uses NGSS biology standards to teach middle school students about antibiotic resistance, how to prevent infection and the right way to use antibiotics.

Topic: Biology
Audience: MS
Type: Non-Profit Vendor

10:00 am - 10:45 am Meeting Room 203

The Lake Michigan Food Web: What did the Lampreys do?

William Hodges, Holt High School/MAEOE,

Hands-on activity creating the original Lake Michigan Food Web and an analysis of the effect of the Sea Lamprey and subsequent DNR interventions.

Topic: Biology, Environmental Education
Audience: MS, HS
Type: Educator Session

10:00 am - 10:45 am Meeting Room 204

Michigan Predator Prey Project

Kevin Frailey, Michigan DNR,

One of North America's largest research studies on the impacts of predators on prey populations is going on in Michigan! Learn about the study and find out how to use some of the data in your science classes.

Topic: Biology, Environmental Education
Audience: 3-5, MS, HS, Coll
Type: Non-Profit Vendor

FRIDAY, MARCH 2

10:00 am - 10:45 am Banquet 1

AP Computer Science Principles (Grades 10-12) and Computer Science Discoveries (Grades 6-9)

Kathy Surd, Mason-Lake Oceana Mathematics and Science Center,
Description: AP Computer Science and Discoveries can open the door to the AP CS for all students. Come learn about this opportunity you can bring to your school by becoming an AP CS teacher.

Topic: Computer Science / Technology
Audience: MS, HS
Type: Educator Session

10:00 am - 10:45 am Banquet 6

NGSS and Classroom Gardens

Maureen Klein, Bennie Elementary, Allen Park Public Schools

Topic: Biology, General
Audience: K-2, 3-5
Type: Educator Session

10:00 am - 10:45 am Banquet 8

Electromagnetic Spectrum & Radioactivity

Kevin Dehne, Delta College/MESTA
The Electromagnetic spectrum will come alive with illustrations to help your students better understand this part of our universe. The ultra-violet and gamma ray parts will be highlighted with examples and demonstrations.

Topic: Physics, Earth Science
Audience: MS, HS, Coll
Type: Educator Session

10:00 am - 10:45 am Capitol 1

Secondary Teachers of Science as Agents of Change: An NGSS Approach to Understanding the Environmental Impacts of Everyday Decisions

Joyce Parker, Michigan State University; Jane Rice, Michigan State University
Our choices of consumer goods, clothes, food, appliances, modes of transportation all impact the environment. We will take a 3-dimensional, multidisciplinary approach to understanding these impacts and making informed decisions.

Topic: General Session (not specific to any content area), Integrated Science, Environmental Education
Audience: HS, Coll
Type: Educator Session

10:00 am - 10:45 am Capitol 4

Let's Debate

Yvonne Coogan, Garden City High School; Jane Culp, Garden City High School
Looking for a way to get students involved in every day issues? Have them debate the issue. Learn how to have your students debate relevant science topics.

Topic: Chemistry
Audience: HS
Type: Educator Session

10:00 am - 10:45 am Michigan 2

Easy Tech Tools to Facilitate Discussion/Reflection

Alaina Sharp, Jackson County ISD; Dan Spencer, Western High School
Sometimes getting our students to engage in productive scientific discussion or reflection can be difficult. We'll talk about easy-to-use tech tools that give your students voice while helping them think like scientists.

Topic: General Session (not specific to any content area)
Audience: MS, HS
Type: Educator Session

10:00 am - 10:45 am Regency 1

Grab their Attention with Gizmos!

Diana Markley Markley, Stevenson Middle School; Julie Parks, Stevenson Middle School
Gizmos are a sure-fire student engagement strategy. Students perform virtual experiments, analyze data and take ownership of their own learning. We want to share our success after almost three years of using this amazing program!

Topic: Computer Science / Technology, Integrated Science
Audience: MS
Type: Vendor Session

10:00 am - 10:45 am Regency 2

A Science Teacher in a Math Classroom

Sarah Murphy, Dr. Benjamin Carson High School,
Hear students say something like, "This is supposed to be math, not science"? Discover some of the ways to integrate science and math to create a more robust experience.

Topic: General Session (not specific to any content area)
Audience: HS
Type: Educator Session

10:00 am - 11:45 am Meeting Room 104

One in a Million

Bill Cline, LAB-AIDS,
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

Topic: Chemistry
Audience: HS
Type: Vendor Session

10:00 am - 11:45 am Meeting Room 205

Integrating Technology into Science-Based STEM with the 5E

Karen Kudla, STEMscopes; Ken Wester, STEMscopes
Balancing hands-on with digital investigations is an integral part of observing phenomenon, gathering evidence, and justifying conclusions. Join us to see this balancing act work toward student achievement gains.

Topic: Earth Science, Computer Science / Technology
Audience: 3-5, MS
Type: Vendor Session

FRIDAY, MARCH 2

10:00 am - 11:45 am Banquet 3

How to See What Your Students are Thinking: Student Modeling and the NGSS

Samantha Johnson, Next Gen Science Innovations; Jim Clark

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS
Type: Educator Session

10:00 am - 11:45 am Banquet 4

Protein Synthesis and Mutations with magnetic beads

Heather Peterson, Holt High School; William Hodges, Holt High School
Holt HS Biology case study approach will be shared with a detailed activity with magnetic beads where students create protein sequences with and without mutations as part of a Sickle Cell Anemia baby case study.

Topic: Biology
Audience: HS
Type: Educator Session

10:00 am - 11:45 am Banquet 5

Phenomenal Tools for MSS Chemistry and Physics Instruction and Assessment

Israel Touitou, Michigan State University/Create for STEM; Deborah Peek-Brown, Michigan State Create for STEM; Cameron Cochran, Washtenaw International high School
Experience MSS-aligned Chemistry and Physics units designed to increase student engagement. Explore samples of curriculum materials featuring: investigating real world phenomena, free interactive modeling tool, and MSS aligned assessment items

Topic: Chemistry, Physics, Assessment
Audience: HS
Type: Educator Session

10:00 am - 11:45 am Banquet 7

A Mi-STAR Lesson: Patterns and Cause & Effect

Stephanie Tubman, Michigan Technological University
Participate in fun, three-dimensional activities you can use to introduce your students to Patterns and Cause & Effect! Experience how students can use these CCC's to investigate phenomena. Lesson plans provided.

Topic: General Session (not specific to any content area), Integrated Science
Audience: MS
Type: Educator Session

11:00 am - 11:45 am Meeting Room 101

Science Talk

Kathleen Schutter, Delta Educatin; Roxane Dupuis, Delta Education; Katherine Armstrong, Delta Education;
"Doing science" is a first step, but making sense of science is just as important. Experience science lessons that include productive talk. Teaching strategies, online resources and more included.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5
Type: Vendor Session

11:00 am - 11:45 am Meeting Room 102

Lesson Planning with NGSS: The 5E Instructional Model

Ann Pearson, Houghton Mifflin Harcourt; Kelly Short, Houghton Mifflin Harcourt
SEPs, DCIs, CCCs…Oh My! How do you even begin to write lessons using the NGSS?! Come get some help using the 5E Instructional Model.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS
Type: Vendor Session

11:00 am - 11:45 am Meeting Room 103

A Focus on Modeling in the Phenomenon-Based Classroom

Diane Wright, Activate Learning,
As one of the scientific practices embedded in the NGSS, developing and using models allow our students to imagine the unseen, make predictions, ask questions and develop further investigations.

Topic: Physics
Audience: MS
Type: Vendor Session

11:00 am - 11:45 am Meeting Room 201

, Educational Innovations,

Topic:
Audience:
Type:

11:00 am - 11:45 am Meeting Room 202

A Long Walk to Water - A Cross-Curricular Unit

Shawn Knaack, Quincy Middle School,
Join us to learn about a cross-curricular unit based on the book "A Long Walk to Water." The science is focused around weather and water in Michigan and South Sudan.

Topic: Earth Science
Audience: MS
Type: Educator Session

11:00 am - 11:45 am Meeting Room 203

Forestry and Forest Ecology for Elementary and Middle School

Michael LeValley, Isabella Conservation District,
Turn a local forest into an outdoor classroom with forestry/forest ecology techniques such as diameter measurement, mapping, forest density estimation, biomass estimation, canopy cover measurement, and more.

Topic: Biology, Informal Science (museums, nature centers, etc.), Environmental Education
Audience: 3-5, MS
Type: Educator Session

FRIDAY, MARCH 2

11:00 am - 11:45 am Meeting Room 204

What's in the Woods?

Kevin Frailey, Michigan DNR,
Bears, cougars, wolves? Come get the latest information, population estimates and management techniques involving Michigan wildlife. Up-to-date, science-based information that will resonate with your students.

Topic: Biology, Environmental Education
Audience: K-2, 3-5, MS, HS, Coll
Type: Non-Profit Vendor

11:00 am - 11:45 am Banquet 1

Creating System Thinkers --- Transforming Student Illustrations into Scientific Models

Jessica Ashley, Oakland Schools; Michael Gallagher, Oakland Schools
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!

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS, Coll
Type: Educator Session

11:00 am - 11:45 am Banquet 2

Promoting Classroom Discussions with Talk Moves

Minna Turrell, St Clair RESA,
How do you get students engaged in a lesson and doing all the heavy lifting? Talk Moves will improve your classroom culture, student engagement, and student learning.

Topic: General Session (not specific to any content area), Talk Moves
Audience: MS, HS
Type: Educator Session

11:00 am - 11:45 am Banquet 6

"Ready Set Go" STEM

Connie Eisenhart, Guardian Angels Catholic School; Cassandra Cayce, Cornserstone
This sessions is :Hands On Coding Skills" During this session we will work with Coding and Robot Mouse. We will learn step by step, about building mazes, collaborating, creating, coding the robot with problem solving.

NGSS Content Standard, A Content Standard B Content Standard E

Technology Standards 9 Engineering design 11 Apply the design process

Topic: Computer Science / Technology
Audience: K-2, 3-5, MS
Type: Educator Session

11:00 am - 11:45 am Banquet 8

A Teacher Friendly Version of the Stratigraphic Column of Michigan

Steve Mattox, Grand Valley State University; Conner Frymier, Grand Valley State University
We will share a classroom-ready rock column of Michigan and ways to connect to the geology, fossils, tectonics, and geologic history of the state.

Topic: Earth Science
Audience: MS, HS, Coll
Type: Educator Session

11:00 am - 11:45 am Capitol 1

#gettingsciencedone -- Citizen Science

David Bydlowski, Wayne RESA; Andy Henry, Wayne RESA; Jeff Bouwman, Shumate Middle School;
It is all about getting science done with students. Use CoCoRaHS and the GLOBE Observer app as a starting point for students collecting data on precipitation, clouds, mosquitoes and more.

Topic: Earth Science, Integrated Science, Informal Science (museums, nature centers, etc.), Environmental Education
Audience: 3-5, MS, HS
Type: Educator Session

11:00 am - 11:45 am Capitol 2

Keynote , ,

Topic:
Audience:
Type:

11:00 am - 11:45 am Capitol 4

Chemistry Phenomenons to Kick Start Your Units

Kristy Lee, Grosse Pointe North High School; Jaimie Hainer, Grosse Pointe North High School
Have you been searching for a hook or anchor to provide your students with a common experience prior to starting a new unit? This presentation is for you.

Topic: Chemistry
Audience: HS
Type: Educator Session

11:00 am - 11:45 am Michigan 1

Accountable Talk in the Science Classroom

Amanda Iocoangeli, Custer Elementary School/ Monroe Public Schools; Vanya Steel, Arborwood Elementary School/ Monroe Public Schools; Danielle Jozwiak, Custer Elementary School/ Monroe Public Schools; Carlie Rzepa, Monroe Middle School/ Monroe Public Schools
Ever feel like your classroom is a scene from Ferris Bueller's Day Off... "Anyone, Anyone?" Come explore strategies to increase higher order thinking and student engagement through student led discourse.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS
Type: Educator Session

11:00 am - 11:45 am

Invade Your Parks and Back Again!

Christine Kelly, Allendale Middle School,
How do you get your students outside, meet NGSS head on, plan an interdisciplinary unit and partner with your parks? Here are some fantastic and fun solutions with lesson plans!

Topic: Integrated Science, Environmental Education
Audience: 3-5, MS, HS
Type: Educator Session

FRIDAY, MARCH 2

11:00 am - 11:45 am Michigan 3

Launching an Elementary STEM Program

Kim Stilwell, NSTA - National Science Teachers Association,
Need to building an elementary STEM program or enhancing your current program? Success stories will be shared on how Picture-Perfect Science resources can be the foundation to a successful program.

Topic: General Session (not specific to any content area), Integrated Science, Science and Literacy
Audience: K-2, 3-5
Type: Non-Profit Vendor

11:00 am - 11:45 am Regency 1

STEM Connecting Schools and Businesses

Rick Mushing, Kent ISD; Ebiri Nkugba, Kent ISD
Teaching the Michigan Science Standards using STEM principles in collaboration with area business partners to prepare our students for their future.

Topic: Integrated Science
Audience: K-2, 3-5, MS, HS
Type: Educator Session

11:00 am - 11:45 am Regency 2

You've Got This - Teach More Discipline Less!

Jennifer Gottlieb, formerly with Grand Blanc HS, now independent,
Specific, proven strategies all teachers of any grade level can use TOMORROW to effectively reduce discipline issues and increase student engagement. Proven to keep students in class and reduce disruptions to create a positive environment to learn. Also, will increase students' feelings of belonging as a valued member of class. Materials and books available to attendees. Teachers will regain lost time spent on misbehavior.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS, Coll
Type: Educator Session

1:00 pm - 1:45 pm Meeting Room 101

Family Engineering & Design Thinking Night

Diana Matthews, Detroit Country Day School; Lisa Morgan, Detroit Country Day School
Engaging students and families with dynamic, hands-on activities appropriate for 3 year olds up to 10 year olds. Materials are readily available, inexpensive and easy to set up. Use in your classroom or create a fun evening for the whole school.

Topic: STEM & MakerSpace
Audience: K-2
Type: Educator Session

1:00 pm - 1:45 pm Meeting Room 102

Teaching Science: The Next Generation

Todd Koenig, Houghton Mifflin Harcourt,
Phenomena, engineering and Science Practices, OH, MY!! How do you even start? Take this opportunity to learn more about the NGSS and take home new classroom activities to use.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS
Type: Vendor Session

1:00 pm - 1:45 pm Meeting Room 103

Moving from Learning Read and Write to Reading and Writing to Learn: Literacy Strategies in the Science Classroom

Diane Wright, Activate Learning,
Experience a lesson from Investigating and Questioning our World through Science and Technology (IQWST®) that draws on the most recent research on literacy learning in the context of science.

Topic: Earth Science
Audience: MS
Type: Vendor Session

1:00 pm - 1:45 pm Meeting Room 201

3 Dimensional Learning in Middle School Modeling Instruction

Scott Stokes, Bemis Jr. High; Nell Bielecki Bielecki, Anderson Middle School; Andrea Williams, Orchard Lake Middle School; George Nelson, Lundahl Middle School
What does middle school modeling instruction look like with 3 Dimensional Learning and discourse.

Topic: General Session (not specific to any content area)
Audience: MS
Type: Educator Session

1:00 pm - 1:45 pm Meeting Room 202

Partnering with the Michigan Nature Association in a Place Based Education Opportunity.

Aaron Wesche, Addison High School; Rachel Maranto, Michigan Nature Association
Information on how Addison High School has been partnering with the Michigan Nature Association to educate and offer hands on experience in the protection of their community sanctuary.

Topic: Earth Science, Environmental Education
Audience: HS
Type: Educator Session

1:00 pm - 1:45 pm Meeting Room 203

Sensory Activities for Early Learners: lessons you can use tomorrow!

Becky Durling, Williamston Community Schools; Natalie Elkins, Michigan Department of Natural Resources
Do you need a lesson for your elementary class to use tomorrow? Are you searching for a way to get your students outside exploring nature! Then this is the session for you!

Topic: Environmental Education
Audience: K-2
Type: Educator Session

1:00 pm - 1:45 pm Meeting Room 204

Observe, Investigate and Enjoy! A tour of free, NGSS aligned, classroom activities.

Natalie Elkins, Dept. of Natural Resources,
The Association of Fish and Wildlife Agencies worked with curriculum coordinators, teachers and biologists to create a hands-on suite of free, online activity guides to focus on field investigations and observation skills. Explore a few with the DNR's Education Specialist.

Topic: Biology, Environmental Education
Audience: 3-5, MS, HS
Type: Non-Profit Vendor

FRIDAY, MARCH 2

1:00 pm - 1:45 pm Meeting Room 205

Integrating Chromebook with Vernier Technology

Patti Smith, Vernier Software & Technology,
In this hands-on workshop, you will use Chromebooks with various Vernier sensors to investigate biology, chemistry, and physics concepts.

Topic: General Session (not specific to any content area), Computer Science / Technology
Audience: 3-5, MS, HS
Type: Vendor Session

1:00 pm - 1:45 pm Banquet 2

District Science Leader Round-table: High School Course Sequence Sharing

Heather Robotham, Wyoming Public Schools; Wendi Vogel, Kent ISD

Share your district's thinking and hear what other districts are doing.
Topic: General Session (not specific to any content area)
Audience: HS
Type: Educator Session

1:00 pm - 1:45 pm Banquet 5

Health in Our Hands: Using the Driving Question Board to explain phenomena

Renee Bayer, CREATE for STEM Institute/ Michigan State Universtiy; Idit Adler, CREATE for STEM Institute; Darlene McClendon, Eisenhower Elementary/Flint Community Schools;
Experience the Driving Question Board, a classroom tool that serves as an organizer for students' thinking as they explain phenomena. We will use Type-2 diabetes to demonstrate use in class.

Topic: General Session (not specific to any content area), Biology
Audience: MS
Type: Educator Session

1:00 pm - 1:45 pm Banquet 6

Curriculum Connections - ELA & Science in Elementary

Amy Quinn, Gretchko
Are you looking for ways to connect your Science with ELA standards? In this presentation you will see K-5 classroom examples of how you can deepen learning through cross curricular connections.

Topic: General Session (not specific to any content area)
Audience: K-2
Type: Educator Session

1:00 pm - 1:45 pm Banquet 8

Aquaponics in the Classroom

Jeremy Hyler, Fulton Schools; Jeremy Winsor, Fulton Schools
Discover how aquaponics can meet both high school and middle school content expectations. Students study and explore the cycling of matter and energy as it pertains to ecosystems.

Topic: Biology, Earth Science, Environmental Education
Audience: MS, HS
Type: Educator Session

1:00 pm - 1:45 pm Capitol 1

Healthy Grading: A Moral Imperative

Don Pata, Grosse Pointe North High School
If you're dissatisfied with your current grading procedures and looking to make your grades more meaningful this session is for you.

Topic: General Session (not specific to any content area), Assessment
Audience: MS, HS, Coll
Type: Educator Session

1:00 pm - 1:45 pm Michigan 2

Middle School Share-a-thon

Susan Tate, Whitehall Middle School,
Calling all middle school teachers! This engaging session will offer lessons, activities, games, and freebies designed for middle school classrooms by those in the trenches.

Topic: General Session (not specific to any content area)
Audience: MS
Type: Educator Session

1:00 pm - 1:45 pm Regency 1

Find the Fund$ for STEM

June Teisan, retired from classroom,
Champagne dreams for your classroom but stuck with a Mt. Dew budget? Learn tips and tricks for successful grant writing to build the STEM programs you know will impact your students.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS
Type: Educator Session

1:00 pm - 1:45 pm Regency 2

Summer isn't just for suntans. It is for Research too!

Marty Buehler, Hastings High School; Connie High, Delton Kellogg High School
Find out ways to involve your students in summer research opportunities. Help them expand their potential now and for their futures. Furthermore, connect their experiences to your classroom in the fall!

Topic: General Session (not specific to any content area)
Audience: MS, HS, Coll
Type: Educator Session

1:00 pm - 2:45 pm Meeting Room 104

Modeling the Introduction of a New Species: NGSS Ecology

Bill Cline, LAB-AIDS; Lisa Kelp, LAB-AIDS
New Species in an Ecosystem? This card-sort activity models the introduction of a new species with special attention to the effect on existing predators and producers.

Topic: Biology
Audience: MS
Type: Vendor Session

FRIDAY, MARCH 2

1:00 pm - 2:45 pm Banquet 1

Keynote , Keynote,

Topic:
Audience:
Type:

1:00 pm - 2:45 pm Banquet 4

Mathematizing Biodiversity: Using Species Accumlation Curves to Measure Biodiversity

William Hodges, Holt High School; Heather Peterson, Holt High School
Actually perform a simulation of the lab that takes students outside to collect insect data to make a species accumulation curve to measure the biodiversity of a habitat.

Topic: Biology
Audience: MS, HS, Coll
Type: Educator Session

1:00 pm - 2:45 pm Banquet 7

A Mi-STAR Lesson: Got a Problem? Yo, I'll Solve It!

Stephanie Tubman, Michigan Technological University
Participate in a design competition that uncovers the importance of well-defined criteria and constraints to having a successful solution. Aligns with MS-ETS1-1. 3D Classroom-tested lesson plan provided.

Topic: General Session (not specific to any content area), Engineering Practices
Audience: MS
Type: Educator Session

1:00 pm - 2:45 pm Capitol 2

Engage Students to Think, Communicate, and Act Like Scientists!

Jan Huff, Van Andel Education Institute; Randy Schregardus, Van Andel Education Institute
Through hands-on investigations, discover the role of science talk and journaling that supports the rigors of the Michigan Science Standards. Leave with lessons and strategies you can use right away!

Topic: General Session (not specific to any content area), Assessment
Audience: K-2, 3-5, MS, HS
Type: Vendor

1:00 pm - 2:45 pm Governor

May the Force Be With You

Sebastian Jolta, Arbor Scientific
You'll be moved by these engaging force and motion demos. These classroom-ready activities include the Stunt Car Lab (inspired by the movie Speed), the famous Monkey-Hunter "problem." the vertical versus horizontal acceleration demonstration, a simple way to prove "g" is always the same, and subjecting an unsuspecting teacher to a ride on the Human Dynamic Cart.

Topic: Physics
Audience: MS, HS
Type: Vendor Session

1:00 pm - 2:45 pm Michigan 1

Learning Labs at the Detroit Zoo

Claire Lannoye-Hall, Detroit Zoological Society; Akilah Franklin, Detroit Zoological Society
Discover how the Detroit Zoo can bring learning to life through hands-on, inquiry-based experiences that meet state science standards.

Topic: Informal Science (museums, nature centers, etc.), Life Sciences
Audience: K-2
Type: Non-Profit Vendor

1:00 pm - 2:45 pm Michigan 3

Lloyd's Toolbox of Engineering Ideas & Activities

Lloyd Hilger, Hanover Horton Schools,
In this presentation we will be looking at the engineering design process and how to teach engineering in a variety of grade levels. We will also look at ways to help students become more aware of various engineering careers. Many lesson plans and resources will be provided. Also, please come ready to share any engineering resources that you have.

Topic: General Session (not specific to any content area), Computer Science / Technology
Audience: 3-5, MS, HS, Coll
Type: Educator Session

1:00 pm - 3:45 pm Banquet 3

Creating Three-Dimensional, Equity-Based Tasks for an NGSS Classroom.

Samantha Johnson, Next Gen Science Innovations; Jim Clark

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS
Type: Educator Session

1:00 pm - 4:45 pm Capitol 3

MEECS - Ecosystems and Biodiversity (Four Sessions)

Jessica Wagenmaker, MEECS

Topic: Biology
Audience: 3-5, MS
Type: Educator Session

2:00 pm - 2:45 pm Meeting Room 102

Student Drivers - Driving Question Boards empower students to figure out what they really need to know and how they will get there

Holly Hereau, Thurston High School; Wayne Wright, Thurston High School
DQBs within storylines enable students to see that they can and will answer questions that matter to them. Students are authentically engaged in discussions and investigations while answering these questions.

Topic: Storylines/NGSS/Driving Question Boards/productive talk
Audience: K-2, 3-5, MS, HS
Type: Educator Session

FRIDAY, MARCH 2

2:00 pm - 2:45 pm Meeting Room 103

Project-Based Inquiry Science™ (PBIS): Creating "Coherence and Science Storylines" for Middle School

Mary Starr, Activate Learning,
STEM learning requires integration! Powerful questions and coherent storylines help solve the integration challenge. .

Topic: Integrated Science
Audience: MS
Type: Vendor Session

2:00 pm - 2:45 pm Meeting Room 201

, Bats,

Topic:
Audience:
Type:

2:00 pm - 2:45 pm Meeting Room 203

Thematic Science Fairs - Using Scientific Inquiry to Increase Environmental Literacy

Bridget Booth, St. Thomas Aquinas School / MAEOE,
A thematic science fair offers students an authentic opportunity to engage in the process of science and real-world problem solving. Learn how to plan an event that emphasizes scientific inquiry and increases environmental literacy of your school community.

Topic: General Session (not specific to any content area), Environmental Education
Audience: K-2, 3-5, MS
Type: Educator Session

2:00 pm - 2:45 pm Meeting Room 204

Salmon in YOUR Classroom

Tracy Page, Michigan Department of Natural Resources,
Learn about the MI DNR's acclaimed "Salmon in the Classroom" program. Attendees will learn all about the program, curriculum connections, fun sample activities and more information about how to join the program.

Topic: General Session (not specific to any content area), Biology, Chemistry, Integrated Science, Environmental Education
Audience: 3-5, MS, HS
Type: Educator Session

2:00 pm - 2:45 pm Meeting Room 205

Space Camp and Beyond

Lisa Nyers, ETHOS Science Center; Susan Disch, ETHOS Science Center
Glean information on attending Space Academy for Educators, taking students to space camp, becoming a certified curator for Moon Rocks through NASA, and NASA resources to use the next day in your classroom!

Topic: Earth Science, Integrated Science
Audience: K-2, 3-5, MS
Type: Educator Session

2:00 pm - 2:45 pm Banquet 2

Curriculum Review for 3-Dimensions

Richard Bacolor, MSELA; Wendi Vogel, MSELA
How can districts, buildings, or departments plan and carry out investigations to evaluate 3-dimensionally aligned curricula? We will describe the process Wayne County teachers used to produce data for analysis.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS
Type: Educator Session

2:00 pm - 2:45 pm Banquet 6

Successful STEM Techniques in Elementary Classrooms

Michele Bielby, Dieck Elementary/Swartz Creek; Kelly Swales, Dieck Elementary Swartz Creek Community Schools
A 4th grade lesson on energy that demonstrates scientific thinking and reflection of phenom, while using student centered scientific discussion and application of concepts in the elementary STEM classroom.

Topic: All topics addressed in the NGSS elementary classroom.
Audience: K-2, 3-5
Type: Educator Session

2:00 pm - 2:45 pm Banquet 8

Teaching Students about the Brain: How I've Learned to View Neurodiversity

Laura Panek, The Roeper School
Through a student centered course on neuroscience I have learned to view learning differences and neurodiversity in a positive light that empowers students. This session will present information on the biological basis of major learning differences and some of the advantages of each.

Topic: General Session (not specific to any content area), Biology
Audience: HS
Type: Educator Session

2:00 pm - 2:45 pm Capitol 4

Setting the Stage for Doing Science in Chemistry

Colin Costello, Hartland High School; Kate Hagerman, Hartland High School
We discuss ways in which we set the stage in our chemistry classes during week one for students to experience the expectations of an NGSS chemistry class.

Topic: Chemistry
Audience: HS
Type: Educator Session

2:00 pm - 2:45 pm Michigan 2

Cultivating Classroom Culture for New(er) Teachers

Rebecca Murawski, Grosse Pointe North High School; Elizabeth Michaels, Grosse Pointe North High School
The culture we create in our classrooms helps shape student growth. Explore methods to developing your classroom culture in a way that encourages students' academic, social and behavioral growth.

Topic: General Session (not specific to any content area)
Audience: MS, HS
Type: Educator Session

FRIDAY, MARCH 2

2:00 pm - 2:45 pm Regency 1

K-8 Teachers as Agents of Change: NGSS and the Environmental Impacts of Using Natural Resources

Jane Rice, Michigan State University; Laura Markham, Michigan State University
Earth's spheres provide us with resources we need - water, air, food, fuels, minerals. Our use of resources impacts Earth. Using NGSS's three dimensions we'll explore how to minimize these impacts.

Topic: Integrated Science, Environmental Education
Audience: K-2, 3-5, MS
Type: Educator Session

2:00 pm - 2:45 pm Regency 2

Transition from one Dimensional GLCE's to Three Dimensional NGSS

Andrew Frisch, Farwell High School; Duncan Gervin, Farwell High School
Having been taught and then teaching in one style of pedagogy, we are confident and comfortable. Now, the rules have changed! The new system not only dictates what students must know, but in addition it also includes the skills they must posses. Not only is are they new expectations, but there is more to the NGSS. This presentation is a "how to" transition your science teaching from traditional lesson plans into NGSS lesson planning.

Topic: General Session (not specific to any content area), Biology, Chemistry, Physics
Audience: 3-5, MS, HS
Type: Educator Session

2:00 pm - 3:45 pm Meeting Room 101

Effectively engaging youth in the process of science

Tracy D'Augustino, Michigan State Univeristy Extension; Norm Lownds, MSU Extension
Tips, tricks and activities designed with the research based best practices to help formal and informal science educators more effectively engage youth in the process of science.

Topic: Integrated Science
Audience: K-2, 3-5, MS, HS, Coll
Type: Educator Session

2:00 pm - 3:45 pm Meeting Room 202

Teaching with the Big Ideas in Mind

Kristin Kiebler-Green, Western Middle School; Joe Showerman, Western Middle School
Join us for an interactive session on using the Big Ideas in Earth Science to drive your science lessons. There will be hands-on activities and materials that can be used immediately in the classroom.

Topic: Earth Science, Environmental Education
Audience: MS
Type: Educator Session

2:00 pm - 3:45 pm Banquet 5

Making sense of phenomena by using a free online modeling tool

Tom Bielik, CREATE for STEM Institute at Michigan State University; Consuelo Morales, CREATE for STEM Institute at Michigan State University; Li Ke, CREATE for STEM Institute at Michigan State Universirt;
In this workshop we will present a free online modeling tool designed to engage secondary students in building and using scientific models to make sense of phenomena.

Topic: General Session (not specific to any content area)
Audience: MS, HS
Type: Educator Session

2:00 pm - 3:45 pm Capitol 1

MDE Workshop on Assessment Writing - need official title

TJ Smolek, MDE
??????????

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS
Type: Educator Session

3:00 pm - 3:45 pm Meeting Room 102

Making It Real... Cheap!!

Darrick Gregory, STARBASE- Battle Creek; Jodi Heaney, Parchment Middle School; Julie Hahn, Parchment Middle School;
This session will include a variety of quick and engaging phenomena that can be done for little or no cost. Online resources with interactive simulations, short videos, and activities will also be included.

Topic: General Session (not specific to any content area)
Audience: 3-5, MS
Type: Educator Session

3:00 pm - 3:45 pm Meeting Room 103

Video Storylines in the Science Classroom

Josh Nichols, Heritage,
Get your students to show their science literacy by becoming video storytellers of their learning using key terms from the Science Standards.

Topic: General Session (not specific to any content area)
Audience: 3-5, MS, HS
Type: Educator Session

3:00 pm - 3:45 pm Meeting Room 201

Phenomenon-first Examples in the Classroom

Carl Wozniak, Northern Michigan University,
This session explores simple demonstrations and puzzling phenomena that increase student engagement and lead them to want to discover deeper understanding. Sometimes, it's just in how you ask the question.

Topic: General Session (not specific to any content area)
Audience: MS, HS
Type: Educator Session

FRIDAY, MARCH 2

3:00 pm - 3:45 pm Meeting Room 203

Microbes ate my underwear!

Misty Klotz, Kellogg Biological Station ; Heather Kittredge, Kellogg Biological Station
Is the soil in your schoolyard healthy? A field of fertile soil contains more microorganisms than all the humans living on Earth! Uncover the mystery of soil organisms and see what happens when we bury undies to learn about the secrets of soil biodiversity. In this session, we will review a lesson plan and activity where 100% cotton underwear is buried in the soil and after a few weeks the underwear is recovered to determine the microbial activity in the soil. The more the underwear is decomposed over the course of the experiment, the more active the soil microbial community. This lesson plan and activity not only introduce the importance of soil microbiota, but also cover the importance of soil health in feeding a growing world population. If you are looking for an exciting way to get students outside and excited about soil, this activity is captivating, fun and can be modified for all ages. And of course anything that involves underwear is going to be a hit!

Topic: Biology, Environmental Education
Audience: 3-5, MS, HS
Type: Non-Profit Vendor

3:00 pm - 3:45 pm Meeting Room 204

Invaders in Your Classroom: Resource Kits to Teach About Aquatic Invasives

Tracy Page, Michigan Department of Natural Resources,
Asian Carp...Red Swamp Crayfish...Snakehead - just some of the aquatic invasive species that your students might hear about. Join the DNR's Aquatic Education Coordinator to gain fun activities and a resource kit to use in discussions with your students about these important topics.

Topic: Biology, Integrated Science, Informal Science (museums, nature centers, etc.), Environmental Education
Audience: 3-5, MS, HS
Type: Educator Session

3:00 pm - 3:45 pm Meeting Room 205

Growth Mindset 2.0

Lisa Nyers, ETHOS Science Center; Susan Disch, ETHOS Science Center
In this session participants will glean a deeper understanding of applying strategies to create a Growth Mindset Classroom.

Topic: General Session (not specific to any content area), Integrated Science
Audience: K-2, 3-5, MS
Type: Educator Session

3:00 pm - 3:45 pm Banquet 1

Stop Creating Lesson Plans: Start Creating Learning Experiences

Randy Schregardus, Van Andel Education Institute,
Engage your students to think and act like scientists. Come willing to transform everyday lesson plans into memorable, inquiry-based learning experiences. Leave with strategies and tools to make it happen.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS
Type: Vendor

3:00 pm - 3:45 pm Banquet 2

Tools for thinking about assessment for the new MSS. - MSELA

Sarah Coleman, MAISD,
What does three dimensional assessment mean? Join us to consider and evaluate different assessment questions to determine if they are one, two or three dimensional

Topic: Assessment
Audience: MS, HS
Type: Educator Session

3:00 pm - 3:45 pm Banquet 4

Boatload of Biology

Kristy Butler, Forest Hills Central High ; Patti Richardson, Forest Hills Central High School
Join us as we share a boatload of biology activities, lessons and labs that you can use in your classroom tomorrow. Inquiry focused and NGSS aligned. Handouts and resources given!

Topic: Biology
Audience: MS, HS
Type: Educator Session

3:00 pm - 3:45 pm Banquet 6

Get Students Asking THEIR OWN Questions

Katie Stevenson, Fisher Elementary School
Need ideas to get students to ask their own questions, develop inquiry skills, and improve dialogue? Walk away with strategies that can be used with any grade and content area.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5
Type: Educator Session

3:00 pm - 3:45 pm Banquet 7

Make Your K-5 Science Phenomenal! An Introduction to Phenomenal Science Units

Darcy McMahon, Central Michigan Science Mathematics Technology Center; Matt Samocki, Central Michigan Science Mathematics Technology Center; Jennel Martin-Powell, Central Michigan Science Mathematics Technology Center;
Come discover this revised comprehensive science curriculum for K-5, written by teachers for teachers. Units are aligned to MSS and available for free. Opportunities for involvement will be shared.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5
Type: Educator Session

3:00 pm - 3:45 pm Banquet 8

IBN-Drawing and Writing to Learn Science

Lisa Weise, Holt Public Schools
Use Interactive Notebooks to help students be mindful of how their learning progresses throughout the year. Notebooks are a wonderful tool for constructing experiments, drawing diagrams, recording data, reflecting on learning.

Topic: General Session (not specific to any content area), Biology, Assessment
Audience: 3-5, MS, HS
Type: Educator Session

FRIDAY, MARCH 2

3:00 pm - 3:45 pm Capitol 2

Productive Talk: How to Get Students to Share Their Thinking Through Scientific Discussions

Katie MacDonell, Galesburg-Augusta Community Schools; Kelly MacDonell, Vicksburg Community Schools
Two teachers share their experiences incorporating productive talk into K-12 science classrooms to help you navigate through your first year of implementation. Tips, tricks, pitfalls, samples, cross-curricular applications, and more.

Topic: General Session (not specific to any content area), Productive science talk
Audience: K-2, 3-5, MS, HS
Type: Educator Session

3:00 pm - 3:45 pm Capitol 4

Elemental Fictions: Storytelling and Narratives in Introductory Science

Mark Benvenuto, University of Detroit Mercy; Prasad Venugopal, University of Detroit Mercy
We present student responses in two introductory science classes when they were assigned socio-historical narratives from a chemical element's perspective. The session will make connections to current science standards.

Topic: Chemistry, Physics
Audience: MS, HS, Coll
Type: Educator Session

3:00 pm - 3:45 pm Governor

What does that graph show me?

Dale Freeland, Portage Central High School
What are the four most frequent relationships examined in the Physical Sciences? This session will present teaching tools to help students understand direct, inverse, exponential and inverse square relationships in the Physical Sciences. Activities in which students measure quantities and graph data points will be used. The students then choose the graph type, list a generic equation and then develop an equation specific for the graphed relationship will be illustrated. These basic graph skills will be useful in all high school science classes.

Topic: Physics
Audience: MS, HS
Type: Educator Session

3:00 pm - 3:45 pm Michigan 2

Flipping with Ease

Adam Alster, Renaissance High School - Detroit Public Schools Community District ; Cynthia Bridges, Renaissance High School - Detroit Public Schools Community District
Bring your computers and learn to flip lessons with ease. From the novice with technology to the pro, learn how two teachers learned to flip their lessons for maximum student achievement. Leave with strategies that can be implemented in your classroom immediately.

Topic: General Session (not specific to any content area)
Audience: MS, HS
Type: Educator Session

3:00 pm - 3:45 pm Michigan 3

RC Cars, Sensors, and Coding… Oh My!

Alexandra Wagner, Central Michigan University; Allison Abram, Central Michigan University
Presenters will share their experience of working side-by-side with engineers at Central Michigan University to incorporate the NGSS in schools using remote controlled cars, block coding, sensors, and microcontrollers.

Topic: General Session (not specific to any content area), Computer Science / Technology, Integrated Science
Audience: 3-5, MS, HS
Type: Educator Session

3:00 pm - 3:45 pm Regency 1

Let's Debate!

Kathy Agee, GVSU Regional Math and Science Center,
How do we get our students to have productive discussions? By examining socio-scientific topics (like antibiotics and offshore drilling), students can develop functional scientific literacy while engaging in science content.

Topic: General Session (not specific to any content area), Integrated Science
Audience: K-2, 3-5, MS, HS
Type: Educator Session

3:00 pm - 3:45 pm Regency 2

WALLS: Water, Air, Land, Lifeand Space.

David Mastie, Ann Arbor Public Schools (retired),
Together we will experience hands-on activities from the five spheres of my WALLS model and explore their applications to physics, chemistry, and other STEM content areas.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS, Coll
Type: Educator Session

3:00 pm - 4:45 pm Meeting Room 104

Cell Differentiation and Gene Expression

Bill Cline, LAB-AIDS; Shannon Mareski, Grand Blanc High School
Students often have trouble conceptualizing how selective gene expression works. In this workshop, participants will use manipulatives to teach this concept and explain how it is connected to genetic engineering.

Topic: Biology
Audience: HS
Type: Vendor Session

3:00 pm - 4:45 pm Michigan 1

No Time for Science? Learn How to Integrate Reading and Writing Using the Cereal City Science Units

Steve Barry, Cereal City Science of Battle Creek Area Mathematics and Science Center; Nancy Karre, Cereal City Science of Battle Creek Area Mathematics and Science Center
CCS selects science text that aligns with ELA and literacy in Science. Text and Student Journal writing provide opportunities for students to explore science while learning to read and write in content.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5
Type: Non-Profit Vendor

FRIDAY, MARCH 2

4:00 pm - 4:45 pm Meeting Room 101

Teaching NGSS with S.M.A.R.T Lessons

Julie Leach, List Elementary Frankenmuth; Tosha Miller, List Elementary Frankenmuth
Our presentations will cover SMART (Science, Math, Art, Reading, Technology) lessons which incorporates hands on learning through problem based explorations into the Next Gen Science Standards. You will leave this session, inspired and energized...ready to teach lessons in your classroom!

Topic: Computer Science / Technology, Integrated Science
Audience: K-2
Type: Educator Session

4:00 pm - 4:45 pm Meeting Room 102

Water Quality: Developing Citizen Scientists

Jackie Murray, Clinton Community Schools,
Students become citizen scientists each year when we conduct water quality testing in our local river. Results are communicated to our area, and upload our data to an international database.

Topic: General Session (not specific to any content area), Earth Science, Informal Science (museums, nature centers, etc.), Environmental Education
Audience: MS
Type: Educator Session

4:00 pm - 4:45 pm Meeting Room 103

ECHO: Distance Learning at the MiSci

Jeanane Charara, Michigan Science Center,
Bring fun and engaging science lessons into your classroom from the Michigan Science Center with just the click of a link via video conferencing.

Topic: General Session (not specific to any content area), Informal Science (museums, nature centers, etc.)
Audience: K-2, 3-5
Type: Non-Profit Vendor

4:00 pm - 4:45 pm Meeting Room 201

Doing, Thinking, Understanding: Science Performance Assessments

Matthew Samocki, Central Michigan Science Mathematics Technology Center; Darcy McMahon, Central Michigan Science Mathematics Technology Center; Jennel Matin-Powell, Central Michigan Science Mathematics Technology Center;
Three Dimensional Science Performance Assessment (3DSPA) project's FREE science performance tasks aligned to MSS are now available. Discover results and findings, how to access the tasks, and professional learning opportunities.

Topic: Assessment
Audience: 3-5, MS, HS
Type: Educator Session

4:00 pm - 4:45 pm Meeting Room 202

Spandex of Gravity - Modeling the Very Fabric of Space and Time!

Christine Brillhart, Midland Public Schools; Christie Gayheart, Midland Public Schools; Mark Hackbarth, Midland Public Schools;
This activity engages students using a model to better understand and explain the concept of gravity, how gravity acts on objects in the universe and affect their motion.

Topic: Earth Science, Integrated Science
Audience: MS
Type: Educator Session

4:00 pm - 4:45 pm Meeting Room 203

Solar Panels and Pool Covers: Revving UP Biology

Amy Weesies, Hart High School, Hart Public Schools,
Its time that biology gets is fair share of attention for how it can impact STEM. Come see fun ideas that help bring engineering to biology and help bring NGSS phenomenon to the biology classroom.

Topic: Biology
Audience: HS
Type: Educator Session

4:00 pm - 4:45 pm Meeting Room 204

Ignite Your Classroom With Digital Storytelling (Featuring GoPro Cameras).

Josh Nichols, Stockbridge Community Schools,
Accelerate learning and provide a window into the classroom . Participants will leave with a deeper understanding of the process as well as a 45-second narrated video that you created.

Topic: Integrated Science, STEM
Audience: 3-5, MS, HS, Coll
Type: Educator Session

4:00 pm - 4:45 pm Meeting Room 205

Science and Engineering Practices in the NGSS

Matt Moorman, TCI,
Join TCI and participate in an engaging Bring Science Alive! investigation that has your elementary students developing solutions and making sense of the natural and designed world. Participants will experience this lesson from the student perspective as they carry out investigations, build models, and learn skills to analyze and interpret data, develop solutions, and communicate their methods just like professional scientists and engineers!

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5
Type: Vendor Session

4:00 pm - 4:45 pm Banquet 3

Community Connection Activities in Biology Classrooms

Craig Kohn, Michigan State University,
In this workshop, we'll explore activities developed at MSU to help students make connections between what they are learning in the classroom and what is happening in the real world.

Topic: Biology, Environmental Education
Audience: HS
Type: Educator Session

FRIDAY, MARCH 2

4:00 pm - 4:45 pm Banquet 5

Focus on Figuring Out – Grade 4 (Multiple Literacies in Project-Based Learning)

Sam Severance, CREATE for STEM at MSU; Deborah Peek-Brown, CREATE for STEM at MSU; Susan Codere Kelly, CREATE for STEM at MSU; Joseph Krajcik, CREATE for STEM at MSU

Participants will explore classroom resources that support student use of science and engineering practices, literacy and mathematics, collaboration and discourse as they figure out phenomena aligned to Grade 4 MSS(NGSS).

Topic: General Session (not specific to any content area), Integrated Science, Assessment
Audience: 3-5
Type: Educator Session

4:00 pm - 4:45 pm Banquet 6

Zero to STEM in 60 minutes!

Crystal Brown, Gibraltar School District

Whether you're teaching STEM as a special or trying to enhance your K-5 classroom with more STEM experiences, join us to find lessons and strategies for incorporating practices and the elements of STEM in your early elementary classroom. The Science and Engineering Practices should be the backbone of STEM education at all levels. Learn how to teach the SEP to even our youngest learners.

Topic: STEM
Audience: K-2
Type: Educator Session

4:00 pm - 4:45 pm Banquet 7

A New Formula? PASCO + Curriculum = PASCO education (ALL in one STEM solution for Chemistry and Physics)

Julie Thomas, PASCO scientific

PASCO scientific is now a provider of curriculum and equipment for Physics and Chemistry. Not only does this complete STEM solution meet ALL Michigan Science Standards, it includes a complete print and digital curriculum with PASCO equipment for the price of most textbooks! Attend this session and receive free access codes for both solutions for the remainder of the school year.

Topic: Chemistry, Physics, Integrated Science
Audience: HS
Type: Vendor Session

4:00 pm - 4:45 pm Banquet 8

Medicines and Me-developing a New Flu Prevention Drug

Cynthia Duncan, Father Gabriel Richard High School; Samantha Cree, Lawrence Public Jr/Sr High school

I will present an activity designed by Life Science Learning Center at Rochester University. They will be providing all of the materials for the participants. The lesson is a lab activity that explores the processes involved in developing and testing a new flu prevention drug. I have also included a "Claim, Evidence, Reasoning" component for the lesson.

Topic: Biology, Chemistry
Audience: MS, HS
Type: Educator Session

4:00 pm - 4:45 pm Capitol 1

MDE Presentation - need a title

TJ Smolek, MDE

??????????

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS
Type: Educator Session

4:00 pm - 4:45 pm Capitol 2

Michigan Environmental Public Health Tracking - A Tool You Can Use!

Jill Maras, Michigan Department of Health and Human Services; Sydney Ogden, Michigan Department of Health and Human Services

MiTracking shows you how to learn about connections between health and the environment by easily accessing its data portal and running data queries.

Topic: Environmental Education, Health
Audience: MS, HS, Coll
Type: Non-Profit Vendor

4:00 pm - 4:45 pm Capitol 4

Great Demos on a Small Budget

Mark Sheler, Sandusky jr sr high school

Tired of costly demonstrations? Veteran teacher will show you how to knock the socks off your students without breaking the bank. Many demos you can make and take!

Topic: General Session (not specific to any content area), Chemistry, Physics
Audience: MS, HS, Coll
Type: Educator Session

4:00 pm - 4:45 pm Gov

Physical Science Phenomena for Middle School

Michelle Mason, Portage Northern High School; Kathy , Portage Northern High School

Middle school appropriate phenomena ideas for teaching Physical Science!

Topic: Chemistry, Physics
Audience: MS
Type: Educator Session

4:00 pm - 4:45 pm Michigan 2

Bring Michigan Science Standards to Life Using Place-based Education

Amanda Syers, Grand Valley State University ; Kym Pawelka, Grand Valley State University

Use place-based education to model Michigan Science Standard concepts to explore driving questions surrounding community endeavors and provide techniques for involving students in other environmental restoration efforts.

Topic: Environmental Education
Audience: K-2, 3-5, MS, HS
Type: Educator Session

FRIDAY, MARCH 2

4:00 pm - 4:45 pm Michigan 3

NGSS and Gardens a Perfect Partnership

Jody Harrington, E.L. Johnson Nature Center,
Gardens are a perfect vehicle for accomplishing many NGSS Standards. Take your class outdoors and use the best EE Activities from Wet/ Wild, PLT, and AIMS to coordinate learning in Gardens with NGSS. Performance Objectives are listed by elementary grade level and activity.

Topic: Biology, Environmental Education
Audience: K-2, 3-5
Type: Educator Session

4:00 pm - 4:45 pm Regency 1

Teaching with Technology

Michelle Campbell, Carsonville-Port Sanilac,
Get your students engaged in lessons by using a range of technology. This session will focus on Sphero balls, VR, hex-bots, and the Qball.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5
Type: Educator Session

4:00 pm - 4:45 pm Regency 2

Using 3D Learning Strategies to Improve Standardized Assessment

Karen Kudla, Oxford Community Schools ,
Learn about classroom activities that get students thinking in the 3-dimensions that can be adapted to any topic in secondary education to improve student performance on standardized assessments.

Topic: General Session (not specific to any content area)
Audience: MS, HS
Type: Educator Session

SATURDAY, MARCH 3

8:00 am - 8:45 am — Meeting Room 101

Fake News in Science

Steven Tezak, STARBASE Alpena,
Kids "learn" all sorts of things on social media and YouTube. From the more subtle pranks to ones that can cause harm, they need to be able to discern how to tell the fake "news" from actual experiments before trying it at home.

Topic: General Session (not specific to any content area), Chemistry
Audience: 3-5, MS, HS
Type: Educator Session

8:00 am - 8:45 am — Meeting Room 102

NGSS Puzzles and Mysteries: Using Phenomena in the Classroom

Ann Pearson, Houghton Mifflin Harcourt,
Phenomena help you build coherent storylines, peak student interest and get kids thinking like scientists and solving problems like engineers. Come learn how in this session!

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS, Coll
Type: Vendor Session

8:00 am - 8:45 am — Meeting Room 103

Incorporating STEM into the Classroom

Gary Curts, Activate Learning,
Bringing STEM into the classroom by involving students in engineering design to solve a real-world problem gives students the opportunity to apply CCCs and DCIs as well as demonstrate NGSS SEPs. .

Topic: Engineering Design
Audience: HS
Type: Vendor Session

8:00 am - 8:45 am — Meeting Room 201

, Bats,

Topic:
Audience:
Type:

8:00 am - 8:45 am — Meeting Room 203

Making Nasty Problems Fun!

Mike Sinclair, Kalamazoo Area Math & Science Center,
Creating interesting and enjoyable problems can enhance the learning experience for students. Here's how I approach crafting innovative and entertaining exercises.

Topic: General Session (not specific to any content area), Physics
Audience: HS
Type: Educator Session

8:00 am - 8:45 am — Meeting Room 204

NGSS Unit Creation & Assessment

Brenda Lantinga, Battle Creek Public Schools,
Creating learner centered, middle school, units for the Next Generation Science Standards, including lessons, mind maps, learning summaries and assessments.

Topic: Earth Science
Audience: MS
Type: Educator Session

8:00 am - 8:45 am — Meeting Room 205

The Triple E's of Climate Change: Environmental Change, Epidemiology & ELISA Testing!

Tamica Stubbs, Bio-Rad Laboratories,
Transform your students thinking around assessing climate change using biotechnological techniques. Via an ELISA simulation, participants will learn to detect and correlate V vulnificus rising epidemiology with increased global temperatures

Topic: Biology, Informal Science (museums, nature centers, etc.), Environmental Education
Audience: MS, HS, Coll
Type: Vendor Session

8:00 am - 8:45 am — Banquet 1

Creating professional learning communities around 3D Formative Assessment

Mary Starr, Michigan Math and Science Centers Network,
Join us as we work through some examples of formative assessment and one way to bring formative assessment feedback loops to your classroom.

Topic: General Session (not specific to any content area), Assessment
Audience: K-2, 3-5, MS, HS, Coll
Type: Educator Session

8:00 am - 8:45 am — Banquet 2

Cheap Easy Demonstration Usable by Most

Andrew Frisch, Farwell Area School,
A variety of simple cheap and universal demonstrations with explanation will be provided. These demonstrations could easily be modified for most grade levels and various science disciplines. These demonstrations will be focused as phenomena.

Topic: Biology, Chemistry, Physics, Integrated Science
Audience: 3-5, MS, HS
Type: Educator Session

8:00 am - 8:45 am — Banquet 3

Getting them Talking Constructively

Mari Maltby, Carson City Crystal,
Students like conversation. Let's get them talking! Tips are given during this workshop that will support you as you get your students to engage in scientific argument (without interruption).

Topic: Biology, Integrated Science
Audience: MS
Type: Educator Session

SATURDAY, MARCH 3

8:00 am - 8:45 am
Banquet 4

Biology Practices That Drive Thinking Forward

Rebecca Brewer, Troy High School,
Explore the use of interactive biology manipulatives and engaging kits that get students figuring out biological concepts, while enjoying learning. Emphasis will be on “designed to discover” high school activities.

Topic: Biology
Audience: HS
Type: Educator Session

8:00 am - 8:45 am
Banquet 5

How to Properly Engage Students With Phenomena Over Time in Project-Based Learning

Samuel Severance, CREATE for STEM
Learn how to organize instruction around proper phenomena over time in project-based learning. Learn supports for engaging elementary students in figuring out phenomena and designing solutions to achieve meaningful learning.

Topic: General Session (not specific to any content area), Integrated Science
Audience: K-2, 3-5
Type: Educator Session

8:00 am - 8:45 am
Banquet 7

Mi_STAR Up and Running in Your School

Doug Oppliger, Michigan Tech / Mi-STAR; Stephanie Tubman, Michigan Tech / Mi-STAR
Find out about Mi-STARs professional learning program and gaining access to the available Mi-STAR Units. Learn about Mi-STAR’s NGSS alignment and unit structure and the plans for creating more units.

Topic: General Session (not specific to any content area), Integrated Science
Audience: MS
Type: Educator Session

8:00 am - 8:45 am
Banquet 8

Mysteries of Magnetism - THEMIS & MMS

Cris DeWolf, Chippewa Hills High School/MESTA; Lisa DeWolf, Chippewa Hills High School
Are electricity and magnetism related? Can I prove Earth has a magnetic field – without a compass? Does magnetism protect life on Earth? Learn more with activities from THEMIS.

Topic: Physics, Earth Science
Audience: HS
Type: Educator Session

8:00 am - 8:45 am
Capitol 4

Claims, Evidence and Reasoning (CER) in an AP chemistry classroom.

Alice Putti, Jenison High School; Jamie Benigna, Roeper School
CER can help students to develop logical arguments that showcase their thinking. Learn how to use CER to improve student reasoning and FRQ scores. Tested activities/questions will be provided.

Topic: Chemistry
Audience: HS
Type: Educator Session

8:00 am - 8:45 am
Michigan 1

Oh Deer! Populations, Models, and Technology

Rob Keys, Cornerstone University; Benjamin VanDyke, Cornerstone University
Investigate how populations of deer change on a hypothetical island, then apply this to an actual urban park and then use picture data to analyze actual deer populations. Handouts & data.

Topic: Biology, Environmental Education
Audience: 3-5, MS, HS
Type: Educator Session

8:00 am - 8:45 am
Michigan 2

Strategies to Scaffold Science Discussion in MS classroom

Amie Snapke, Forsythe Middle School,
We know our middle school students are experts at talking but how do we get them to talk science? This presentation will involve a variety of techniques and scaffolds to help your middle school scientists talk science in the classroom! You will walk away with some tools you can try in your classroom next week!

Topic: General Session (not specific to any content area)
Audience: MS
Type: Educator Session

8:00 am - 8:45 am
Michigan 3

Activities for the Anthropocene

Holly Schaeffer, Lansing Community College,
Combine history and environmental science in this hands-on session exploring how humans have shaped the earth and atmosphere since the Industrial Revolution.

Topic: Biology, Environmental Education
Audience: HS
Type: Educator Session

8:00 am - 8:45 am
Regency 1

Muffins for MSTA Members

Robby Cramer, MSTA,
General Membership Meeting at 8:00 Saturday morning

Topic: General Session (not specific to any content area), membership meeting
Audience: K-2, 3-5, MS, HS, Coll
Type: Educator Session

8:00 am - 9:45 am
Meeting Room 104

Waves

Bill Cline, LAB-AIDS; Lisa Kelp, LAB-AIDS
Waves transmit energy and information, join us for an activity from SEPUP Waves unit for the middle grades, newly updated for NGSS. Interaction of light will be explored.

Topic: Physics
Audience: MS
Type: Vendor Session

SATURDAY, MARCH 3

8:00 am - 9:45 am Meeting Room 202

Floating Trains: Phenomena, 3-D Instruction, and Amplify Science for Grades K-5

Bill Badders, Amplify Education & The Lawrence Hall of Science,
Experience how students investigate maglev trains while figuring out principles of forces and engaging in three-dimensional learning. Participants will get a hands-on dive into Amplify Science for Grades K-5, engaging with this new K-8 NGSS designed curriculum from the Lawrence Hall of Science.

Topic: Earth Science, Integrated Science
Audience: K-2, 3-5, MS
Type: Vendor Session

8:00 am - 9:45 am Banquet 6

"It's Just too Hard to Explain!" - Making Sense of Phenomena by Developing and Using Models in the Elementary Classroom.

Steve Barry, Cereal City Science by Battle Creek Area Mathematics and Science Center ; Nancy Karre, Cereal City Science by Battle Creek Area Mathematics and Science Center
Modeling plays a critical role in developing a scientific explanation of a real world phenomenon. We will use an example to show what the modeling practice looks like in the classroom.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5
Type: Educator Session

8:00 am - 9:45 am Capitol 2

idk whut 2 say: teen dialogue in the classroom

Rebecca Heckman, Inland Lakes Schools
Classroom discussions are a perfect place to develop students' ability to use textual evidence alongside social skills. Using brain research, we will engage in discourse on strategies which strengthen students' discussion skills. This is not a sit and get lesson.

Topic: General Session (not specific to any content area)
Audience: MS, HS
Type: Educator Session

8:00 am - 9:45 am Governor

Newton's 2nd Law of Motion Activity, NGSS

Brad Parsons, Central Michigan University
Engineering balloon powered vehicles to introduce Newton's 2nd Law of Motion.

Topic: Physics
Audience: MS
Type: Educator Session

8:00 am - 9:45 am Regency 2

Integrating Environmental Data Analysis into your Classroom:

Isabella Garramone, University of Michigan,
An interactive overview of Climate Change and Michigan Cherries, a free three day unit which allows students to predict how a shifting climate impacts Michigan's cherries.

Topic: Environmental Education
Audience: HS
Type: Educator Session

8:00 am - 10:45 am Capitol 1

Energy and the NGSS

Don Pata, Grosse Pointe North High Schools; Laura Ritter, Troy High School
This 3 hour workshop will give participants some practice using NGSS techniques in learning the ways in which Energy is treated by the NGSS.

Topic: Biology, Chemistry, Physics, Earth Science, Integrated Science, Environmental Education
Audience: 3-5, MS, HS, Coll
Type: Educator Session

8:00 am - 11:45 am Capitol 3

MEECS - Water Quality (Four Sessions)

Joan Chadde, MEECS

Topic:
Audience: 3-5, MS
Type: Educator Session

9:00 am - 10:45 am Meeting Room 103

Structuring Discussion to Be Equitable and Rigorous

Diane Wright, Activate Learning,
Per NGSS, learning is a social endeavor supported by collaborative and communicative norms, which requires teachers to examine and support K–12 students' ways of articulating, making sense of, and evaluating each other's ideas.

Topic: Discourse in Science
Audience: MS
Type: Vendor Session

9:00 am - 10:45 am Banquet 2

PlayFlu: Using Wearable Technology and Kinesthetic Teaching to Engage Kids in Modeling Scientific Phenomena

Nirit Glazer, PlayFlu; Yariv Glazer, PlayFlu
PlayFlu is a FREE outreach program that travels to schools and aligned with the NGSS. The program integrates tag-style games with lesson plans to engage students in modeling scientific phenomena.

Topic: General Session (not specific to any content area), Biology, Chemistry, Computer Science / Technology, Integrated Science
Audience: K-2, 3-5, MS, HS
Type: Educator Session

9:00 am - 10:45 am Banquet 7

Mi-STAR Professional Learning Session I: Introducing the Challenge

Emily Gochis, Michigan Technological University; Megan Coonan, Saginaw ISD; Stephanie Tubman, Michigan Technological University;
Experience how 21st century issues and student questioning can drive three-dimensional units. Introductory lessons are designed to activate and expose thinking while motivating students to address real-world challenges. Handouts Provided. (Attendance at all three in this series can qualify as Mi STAR Day One Training)

Topic: General Session (not specific to any content area), Integrated Science
Audience: MS
Type: Educator Session

SATURDAY, MARCH 3

9:00 am - 10:45 am Capitol 4

Teaching Chemistry to Middle School Students

Kathleen O'Connor, Madison Carver Academy
Middle school students and the study of chemistry are a magical mix! In this workshop we will practice inquiry based lab activities that will spark your students interest and imagination. Each participant will receive a flash drive containing lesson plans from the chemical education foundation.

Topic: Chemistry, Physics
Audience: MS
Type: Educator Session

9:00 am - 9:45 am Meeting Room 101

Science Songs, Simple Stuff and Sliquids

Kevin Koch, Kalamazoo Public Schools,
Add some fun to your lessons. Using songs about science (or student created songs), easy, inexpensive demos or quick activities and unique vocabulary to help your students enjoy science more. Sharing session will be included.

Topic: General Session (not specific to any content area), Earth Science
Audience: K-2, 3-5, MS, HS
Type: Educator Session

9:00 am - 9:45 am Meeting Room 102

Building Solid Storylines

Ann Pearson, Houghton Mifflin Harcourt; Kelly Short, Houghton Mifflin Harcourt
How do you weave student questions, phenomena, and science practices into a coherent storyline covering multiple lessons? Come get some guidance, ideas and resources!

Topic: General Session (not specific to any content area)
Audience: 3-5, MS, HS
Type: Vendor Session

9:00 am - 9:45 am Meeting Room 201

, Educational Innovations,

Topic:
Audience:
Type:

9:00 am - 9:45 am Meeting Room 203

Slow down to go fast? How modeling can increase student engagement through storytelling

Sandra Erwin, Harper Creek High School; Mason Converse, Harper Creek High School
Participants will explore how using student generated models increases depth of content understanding and student engagement through storytelling in high school science classes.

Topic: Chemistry, Physics
Audience: HS
Type: Educator Session

9:00 am - 9:45 am Meeting Room 204

Implementing NGSS 3D Learning with NASA/GLOBE Earth System Learning Progressions

Janet Struble, The University of Toledo/GLOBE Mission EARTH,
Interact with three-dimensional learning experience for Earth Science: Atmosphere which incorporates GLOBE Program investigations, data collection, and NASA resources in a series of K-12 learning progressions. Handouts.

Topic: Earth Science
Audience: K-2, 3-5, MS, HS
Type: Educator Session

9:00 am - 9:45 am Meeting Room 205

1 Class Period+ 1 Model System + 2 Cellular Processes= Success 4 Students!

Tamica Stubbs, Bio-Rad Laboratories,
Learn how encapsulated algae can be used to investigate photosynthesis and cellular respiration within one period using one CO2 colorimetric tracking solution. Bring inquiry alive!

Topic: Biology, Integrated Science, Informal Science (museums, nature centers, etc.), Environmental Education
Audience: MS, HS, Coll
Type: Vendor Session

9:00 am - 9:45 am Banquet 1

Creating a space for the Crosscutting Concepts: from questions to explanations to assessments

Mary Starr, Michigan Math and Science Centers Network,
The crosscutting concepts encourage students to think through ideas using distinct lenses. In this session we will explore what the CCCs are and how they can and should be incorporated in questions, explanations and assessment.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS, Coll
Type: Educator Session

9:00 am - 9:45 am Banquet 3

Using Phenomena in Biology to Give Context and Purpose for Learning

Courtney Lutz, Grand Ledge High School; Katherine Rydzinski, Grand Ledge High School/MSU
How the phenomena of maintaining homeostasis of blood glucose can drive students to discover connections between negative feedback loops, cellular respiration, photosynthesis, protein synthesis, membrane transport and organelle cooperation.

Topic: Biology
Audience: HS
Type: Educator Session

SATURDAY, MARCH 3

9:00 am - 9:45 am Banquet 4

Teaching About Climate Change in Biology

Wendy Johnson, Kentwood Public Schools; Christie Morrison Thomas, Michigan State University
Wondering where and how to address the new climate change standards? We will share research on student learning and free MSS-aligned curriculum for addressing climate change in high school biology.

Topic: Biology, Earth Science
Audience: HS
Type: Educator Session

9:00 am - 9:45 am Banquet 5

Focus on Figuring Out – Grade 3 (Multiple Literacies in Project-Based Learning)

Kellie Finnie, CREATE for STEM at MSU; Deborah Peek-Brown, CREATE for STEM at MSU; Susan Codere Kelly, CREATE for STEM at MSU; Joseph Krajcik, CREATE for STEM @ MSU
Participants will explore classroom resources that support student use of science and engineering practices, literacy and mathematics, collaboration and discourse as they figure out phenomena aligned to Grade 3 MSS(NGSS).

Topic: General Session (not specific to any content area), Integrated Science, Assessment, Curriculum Resources
Audience: 3-5
Type: Educator Session

9:00 am - 9:45 am Banquet 8

Rock with Your Students!

Maria Gonzalez, Holy Family School
Wondering how to get students excited about seemingly unexciting lumps of matter? This session includes, attention-getting, easy to use zingers and how to easily get resources for your labs.

Topic: Earth Science
Audience: K-2, 3-5, MS
Type: Educator Session

9:00 am - 9:45 am Michigan 1

Scientific Argumentation: How to reason like a scientist

Samantha Lichtenwald, Bay-Arenac Community High School; Samuel Langhorne, Bay-Arenac Community High School
How to facilitate scientific discourse in your classroom; encouraging students to make sense of science concepts and phenomenon by connecting to their own life experiences and prior knowledge.

Topic: General Session (not specific to any content area)
Audience: HS
Type: Educator Session

9:00 am - 9:45 am Michigan 2

Biological and health student's perception about academic integrity.

Jorge Joel Reyes-Mendez, Metropolitan University. Xochimilco Campus; Samuel Coronel-Nuñez, Metropolitan University. Xochimilco Campus; Rafael Diaz-Garcia, Metropolitan University. Xochimilco Campus,
Student's perception of academic integrity is that they have never been educated about the importance of the subject, we conclude on the need to train teachers to create awareness and good practices.

Topic: General Session (not specific to any content area), Assessment
Audience: MS, HS, Coll
Type: Educator Session

9:00 am - 9:45 am Michigan 3

We've got Gall, do you?

Steve Vree, Cedar Springs High School; Eddie Johns, Cedar Springs High School
Addresses NGSS HS-LS2-6 What are Galls? Why are they a good food web model? Identify larvae and safely remove larvae.

Use talk moves with class discussion to promote student thinking.

Topic: Biology, Environmental Education
Audience: MS, HS, Coll
Type: Educator Session

9:00 am - 9:45 am Regency 1

Classification Can Be Fun

Lu Anne Clark, Lansing Community College,
Hands on activities designed to walk through classification techniques and the pluses and minuses of different types of classification. Both physical and biological science related. Cheap materials involved.

Topic: Biology, Chemistry, Earth Science
Audience: MS, HS, Coll
Type: Educator Session

10:00 am - 10:45 am Meeting Room 101

Cementing Their Learning - Making it Stick!

Chris Blackstock, Delta Education,
This session will demonstrate how to use science notebooks to help cement new learning and connect prior knowledge so students at any ability level can succeed.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS
Type: Vendor Session

10:00 am - 10:45 am Meeting Room 102

Journaling in Science using Evidence Notebooks

Todd Koenig, Houghton Mifflin Harcourt,
Develop students into true observers, thinkers, and scientists using strategies from a veteran science teacher. Come learn how to deepen student learning and connection to content while improving writing skills!

Topic: General Session (not specific to any content area)
Audience: 3-5, MS, HS, Coll
Type: Vendor Session

SATURDAY, MARCH 3

10:00 am - 10:45 am Meeting Room 201

STEM Cells on Station

Peter Lawrie, Orion's Quest; Tom Drummond, Orion's Quest
Learn how your students can actively partner with ISS researchers to understand how stem cells and stem cell derived heart cells age and grow in microgravity to find treatments for heart disease, stroke, and potentially other regenerative medicine technologies.

Topic: Biology, Chemistry, Physics, Computer Science / Technology, Space Science
Audience: MS, HS
Type: Non-Profit Vendor

10:00 am - 10:45 am Meeting Room 203

Engaging All Learners in Meaningful Scientific Conversations

Heather Damick, Plainwell Middle School,
Struggling to engage all students in scientific discussions? Wishing more voices were heard during class? If so, join me as we explore strategies address these challenges and more!

Topic: General Session (not specific to any content area)
Audience: 3-5, MS
Type: Educator Session

10:00 am - 10:45 am Meeting Room 204

Citizen Scientists Needed! Students Collecting Data for the GLOBE Urban Heat Island Effect Campaign

Janet Struble, The University of Toledo/GLOBE Mission EARTH; David Bydlowski, AREN GLOBE
Dr. Czajkowski , lead scientist for this campaign, needs your students to collect surface temperature data and upload the data to the GLOBE. Start your training with the following GLOBE Protocols: Clouds and Surface and Air Temperature today. Handouts and Raffle.

Topic: Earth Science, Integrated Science
Audience: MS, HS
Type: Educator Session

10:00 am - 10:45 am Banquet 1

Beyond CER: Explanation and Argument - Distinctions & Implications for Instruction

Amy Deller-Antieau, Ann Arbor Public Schools; Darcy McMahon, Central Michigan Science Mathematics Technology Center
Join us for conversation around complexities surrounding two powerful practices for student sense-making: Argument and Explanation. Participants will engage in activity, dialogue and consider practical tools while they explore distinctions.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS, Coll
Type: Educator Session

10:00 am - 10:45 am Banquet 4

Using a Driving Question Board to Figure out Phenomena

Wendy Johnson, Kentwood Public Schools,
I will share pictures, videos, and activities from multiple units of my biology class to illustrate how a driving question board can be used daily to support students in explaining phenomena.

Topic: General Session (not specific to any content area), Biology
Audience: MS, HS
Type: Educator Session

10:00 am - 10:45 am Banquet 5

Interactions: A Free Three-dimensional Science Curriculum for 9th Grade Physical Science

Angela Kolonich, CREATE for STEM Institute
Explore how the emergent properties of atoms and molecules provide a foundation for explaining various scientific and everyday phenomena. Using the Interactions materials, students observe phenomena, engage in hands-on activities, and use online simulations to construct scientific explanations and build explanatory models. Participants will engage in activities and discussions that support the three-dimensional approach of the Interactions curriculum.

Topic: Chemistry, Physics, Integrated Science
Audience: HS
Type: Educator Session

10:00 am - 10:45 am Banquet 6

Supporting Student Science Talk in Kindergarten

Kirsten Edwards, Michigan State University; Amelia Gotwals, Michigan State University; Tanya Wright, Michigan State University
Kindergarten students are able to make sense of phenomena when given opportunities. Learn how to support student discourse in all parts of a science lesson.

Topic: General Session (not specific to any content area)
Audience: K-2
Type: Educator Session

10:00 am - 10:45 am Banquet 8

Natural Learning

Amy Greene, Detroit Zoological Society/ Belle Isle Nature Center
Take it outside! Outdoor learning cultivates opportunities to engage in inquiry, develops students' scientific practices and integrates crosscutting concepts - and it doesn't have to be complicated to be effective.

Topic: Environmental Education
Audience: K-2, 3-5, MS
Type: Non-Profit Vendor

10:00 am - 10:45 am Capitol 2

LITERARY SCIENCE: The Integration of ELA and Science at the Secondary Level to Promote Scientific Literacy

Hannah Homrich, Central Michigan University
This study explores the ways in which educational techniques typically used in Humanities settings can be modified and applied to promote active literacy within science subjects at the Secondary level.

Topic: Integrated Science
Audience: MS, HS
Type: Educator Session

10:00 am - 10:45 am Governor

Cars That Can't Crash - Fact or Fiction

Mark Davids, Retired Teacher; Dave Acton, The-Transformation-Network
Engage and inspire the next generation of scientists and engineers with our innovative materials and activities. This STEM unit will explore how technology is transforming transportation.

Topic: Physics, Computer Science / Technology, Integrated Science, engineering, CTE
Audience: MS, HS
Type: Educator Session

SATURDAY, MARCH 3

10:00 am - 10:45 am Michigan 1

How dense are my students?

Brian Welch, Fremont Middle School; Samantha Kempf, Fremont Middle School
A fun, inexpensive method of measuring the density of students by dunking them in a 55 gallon bucket of water.

Topic: General Session (not specific to any content area), Integrated Science
Audience: MS
Type: Educator Session

10:00 am - 10:45 am Michigan 2

Dig Deeper! Ways to Get More Meaningful Reflection and Talk

jaime Ratliff, Lapeer Community Schools; Patrick Lothrop, Lapeer Community Schools
Learn some easy to implement strategies that will help you get your students demonstrating deeper thinking. Take away handouts and other goodies that will help you (and students) track progress along the way.

Topic: General Session (not specific to any content area)
Audience: MS
Type: Educator Session

10:00 am - 10:45 am Michigan 3

From Storybook STEM to Beyond

Amanda Iocoangeli, Custer Elementary School; Danielle Jozwiak, Custer Elementary School
Are you looking to boost student engagement? Do your students struggle with the "Why" behind their learning? Come explore strategies that increase curiosity and accountability in your classroom using STEM.

Topic: General Session (not specific to any content area)
Audience: 3-5, MS
Type: Educator Session

10:00 am - 10:45 am Regency 1

Everything I needed to know about assessment I learned in marching band

Taylor Funk, Cedar Springs Public Schools,
I noticed strong parallels between best practice assessment methods and my father's successful band program. I've highlighted these to help you ignite learning in your setting with performance-driven instruction

Topic: General Session (not specific to any content area), Assessment
Audience: 3-5, MS, HS
Type: Educator Session

10:00 am - 11:45 am Meeting Room 104

Photosynthesis and Respiration Shuffle

Bill Cline, Lab-Aids; Shannon Mareski, Grand Blanc High School
Address your students' misconceptions about photosynthesis and cellular respiration. Using a computer simulation, a hands-on activity, and notebooking and discussion strategies, extend student thinking all from LAB-AIDS SGI Biology Program.

Topic: Biology
Audience: HS
Type: Vendor Session

10:00 am - 11:45 am Meeting Room 202

Tips You Can Use in Class Tomorrow: Building Community, Accountability, and Class Relevance

Mark Francek, Central Michigan University,
You need some teaching tips that you can implement right away. Receive a whirlwind tour of strategies improving classroom community, accountability, and content relevance. Handouts.

Topic: General Session (not specific to any content area), Earth Science, Integrated Science, Environmental Education, Assessment
Audience: 3-5, MS, HS, Coll
Type: Educator Session

10:00 am - 11:45 am Banquet 3

Man's Real BFF 2.0

Cheryl Hach, Kalamazoo Area Math &Science Center; Robby Cramer, MSTA
This session will highlight free web-based activities, developed under NIH collaboration, and the use of dogs as model organisms for the study of classical and molecular genetics/genomics, evolution, and disease

Topic: Biology
Audience: MS, HS, Coll
Type: Educator Session

10:00 am - 11:45 am Regency 2

Integrate Scientific Modeling, Climate Change, and Forest Ecology into your Middle School Classroom: Climate Change and Michigan Forests

Isabella Garramone, University of Michigan,
An interactive overview of Climate Change and Michigan Forests introduces students to plant growth and climate change concepts, current forest ecology research methods, and how climate change can impact forests.

Topic: Environmental Education, Life Science
Audience: MS
Type: Educator Session

11:00 am - 11:45 am Meeting Room 103

Project-Based Inquiry Science™ (PBIS): Creating "Coherence and Science Storylines" for Middle School

Mary Starr, Activate Learning,
STEM learning requires integration! Powerful questions and coherent storylines help solve the integration challenge. .

Topic: Integrated Science
Audience: MS
Type: Vendor Session

11:00 am - 11:45 am Meeting Room 203

Let's Have a Ball: Incorporating Movement Activities in Science

Patti Picard, Tawheed Center of Detroit School,
Learn how to use whole body movement and balls to model science systems in earth, life, and physical science. Students are guaranteed to have a ball.

Topic: General Session (not specific to any content area)
Audience: 3-5, MS
Type: Educator Session

SATURDAY, MARCH 3

11:00 am - 11:45 am Meeting Room 205

3 Dimensional Learning with Bring Science Alive!

Matt Moorman, TCI,
Join TCI and participate in 3 dimensional learning with the Bring Science Alive! program. Participants will experience a lesson from the student perspective as they carry out investigations, build models, and learn skills to analyze and interpret data, develop solutions, and communicate their methods just like professional scientists and engineers!

Topic: General Session (not specific to any content area)
Audience: MS
Type: Vendor Session

11:00 am - 11:45 am Banquet 1

KLEWS: Organizing Science Ideas & Building Literacy

Richard Bacolor, Michigan Math and Science Centers Network; Mary Starr, Michigan Math and Science Centers Network
We will offer K-8 teachers a tool to plan and carry out lessons aligned to the MSS that build toward science and literacy practices.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5
Type: Educator Session

11:00 am - 11:45 am Banquet 4

Investigating Ecological Relationships Using HHMI Biointeractive Resrources

Mark Eberhard, St. Clair High School ,
Participants will work with resources from HHMI Biointeractive to explore key ecological relationships. Integrating science practices, these NEW resources investigate niche partitioning using metabarcoding techniques. All resources are 100% FREE!

Topic: Biology, Environmental Education
Audience: MS, HS, Coll
Type: Educator Session

11:00 am - 11:45 am Banquet 6

Tools for Teaching Elementary Science

Marie Woodman, Morse Elementary Troy Schools
Making Science Work in the Elementary Classroom! Using KLEWS and Investigation Notebooks to promote student thinking and ownership of new standards. Shifting to NGSS in a manageable way!

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5
Type: Educator Session

11:00 am - 11:45 am Banquet 8

Elementary Inquiry and STEM Extravaganza

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

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5
Type: Educator Session

11:00 am - 11:45 am Capitol 1

Scaffolding 3-Dimensional Science Using (free) Carbon TIME Units

Christie Morrison Thomas, Michigan State University
Learning complex tasks (engaging in 3-dimensional NGSS learning) requires scaffolding. Connect with Carbon TIME's 6 phenomena-centered MS/HS units and use our toolkits to scaffold your students' reasoning and reflecting.

Topic: Biology, Earth Science
Audience: MS, HS
Type: Educator Session

11:00 am - 11:45 am Governor

Reflections from adding phenomenon

Kristin Mayer, East Kentwood High School
I will share the phenomenon used in my chemistry and physics classes this year; including how I used the phenomena and reflections about what worked and what I would change.

Topic: Biology, Physics
Audience: HS
Type: Educator Session

11:00 am - 11:45 am Michigan 2

TATTS MSS: Tips and Tricks to Survive MSS

April Holman, Central Montcalm High School,
The transition to the Michigan Science Standards takes a shift in thinking, both for teachers and students. This session will offer some ways to help manage that change.

Topic: General Session (not specific to any content area), Biology
Audience: MS, HS
Type: Educator Session

11:00 am - 11:45 am Michigan 3

Modeling and Experimental Design Using Isopods

Jennifer Beck, Perry High School,
Using a modeling approach, teach students experimental design using isopods. Kindergarten to AP, these crustaceans are low maintenance and adaptable to many different studies, from behavior to environmental preference.

Topic: Biology, Environmental Education
Audience: K-2, 3-5, MS, HS
Type: Educator Session

11:00 am - 11:45 am Regency 1

How to Develop an Instructional Storyline

Joe Austin, Waterford School Distric; Rochelle Rubin, Oakland Schools ISD
A process for moving from Performance Expectation standards to instruction and assessment will be shared. It will include how to develop a storyline and strategies for supporting and assessing conceptual development of targeted standards.

Topic: General Session (not specific to any content area), Assessment
Audience: K-2, 3-5, MS, HS
Type: Educator Session

SATURDAY, MARCH 3

11:00 am - 12:45 pm Banquet 2

Building Your NGSS Toolbox: Strategies for Implementing the Science and Engineering Practices and Crosscutting Concepts in a Student Led Classroom

Leigh Ann Roehm, Saline Middle School
Learn how the power of reflection and student ownership transformed a middle school classroom. Walk away with strategies for implementing the NGSS that can be applied in any lesson, regardless of topic or grade level.

Topic: General Session (not specific to any content area)
Audience: MS
Type: Educator Session

11:00 am - 12:45 pm Banquet 7

Mi-STAR Professional Learning Session II: Real World Science Investigations

Emily Gochis, Michigan Technological University/ Mi-STAR; Megan Coonan, Saginaw ISD; Stephanie Tebman, Michigan Technological University/ MI-STAR;
Experience a hands-on lesson that engages student to investigate scientific phenomena and address real-world community problems. Use a comprehensive instructional model designed for three-dimensional learning. Handouts Provided. (Attendance at all three in this series can qualify as Mi STAR Day One Training)

Topic: General Session (not specific to any content area), Integrated Science
Audience: MS
Type: Educator Session

11:00 am - 12:45 pm Meeting Room 101

Penny Ante Science: Activities in General Science, Earth Science, Life Science, and Physical Science.

Mitchell Klett, Northern Michigan University
Penny Ante Science shows hands-on science activities that use very inexpensive household materials. These activities are designed to be open ended; with the answers to the questions based on the data collected rather than a set of facts to be memorized.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS
Type: Educator Session

11:00 am - 12:45 pm Meeting Room 102

Conservation and You!

Claire Lannoye-Hall, Detroit Zoological Society; Sandy Ling, Detroit Zoological Society
Discover how conservation work the Detroit Zoo is doing locally and internationally can become a part of your classroom, empowering youth to make a difference while meeting state science standards.

Topic: Informal Science (museums, nature centers, etc.), Environmental Education
Audience: MS, HS
Type: Non-Profit Vendor

11:00 am - 12:45 pm Meeting Room 201

STEAM: If We Can Do It, You Can Do It!

Natalie D'Amico, Saline Area Schools ; Stephanie D'Huyvetter, St. Thomas Aquinas School
Do you want to implement STEAM but don't know where to start? Look no further! Participants will engage in hands-on activities & be provided with access to helpful resources at the session.

Topic: STEAM
Audience: K-2, 3-5, MS
Type: Educator Session

11:00 am - 12:45 pm Meeting Room 204

Exponential inquiry- merging math and biotech to amplify learning

Mindy Lee-Olsen, MiniOne Systems; Richard Chan, MiniOne Systems
Learn to combine PCR DNA amplification and mathematical modeling in this hands-on lab. You get to learn how our step-by-step scaffolding approach will make modeling PCR with math less daunting.

Topic: Biology, Integrated Science
Audience: HS, Coll
Type: Vendor Session

11:00 am - 12:45 pm Banquet 5

Using Three-Dimensional Rubrics in Formative Assessments to Figure out Phenomena

Phyllis Haugabook Pennock, CREATE for STEM/Michigan State University; Samuel Severance, CREATE for STEM/Michigan State University; Joseph Krajcik, CREATE for STEM/Michigan State University
Use three-dimensional rubrics to guide students into figuring out phenomena in the life and physical sciences! This session will include assessment and rubric examples on a technology platform. Handouts provided!

Topic: Biology, Chemistry, Assessment
Audience: MS
Type: Educator Session

11:00 am - 12:45 pm Capitol 2

Blinded by the Light

Sebastian Jolta, Arbor Scientific
Strap-in for amazing light and color demos. These classroom-ready activities include mixing primary colors to cast shadows in cyan and Magenta.

Topic: Physics
Audience: MS, HS
Type: Vendor Session

11:00 am - 12:45 pm Capitol 4

Safer Chemistry: STEM Connection and Green Chemistry Replacement Labs

Kathe Blue Hetter, Skyline High School; Jon Baek, Honey Creek
What if we could grow our own packaging? How does the surface chemistry of shark scales prevent bacteria growth? Can we manufacture fabrics without using harmful chemicals in the process? Interested in teaching core chemistry concepts with safer materials? Come learn how at this workshop

Topic: Chemistry
Audience: HS
Type: Educator Session

SATURDAY, MARCH 3

12:00 pm - 12:45 pm Banquet 8

STEM is about more than Rockets and Robots

Thom OBrien, Explore Learning
Science –Complex science into your classroom? Technology – How to use all this technology? Engineering – Can we make engineering ENGAGING? Mathematics – All connects with math! Engage your students with GIZMOS!

Topic: Chemistry, Physics, Computer Science / Technology
Audience: 3-5, MS
Type: Vendor Session

12:00 pm - 1:45 pm Meeting Room 104

Weather and Climate

Bill Cline, LAB-AIDS; Lisa Kelp, LAB-AIDS
Participants examine a climate map along with photos and descriptions of different climates. They identify their local climate as well as the climate for three different regions based on the climate graphs.

Topic: Earth Science
Audience: MS
Type: Vendor Session

12:00 pm - 1:45 pm Capitol 3

Claim-Evidence-Reasoning: The Value of Scientific Explanations in STEM

Karen Kudla, STEMscopes; Ken Wester, STEMscopes
CER is a way for students to explain observed phenomenon by connecting data to science knowledge. Change how lab investigations are conducted by making them meaningful for students.

Topic: General Session (not specific to any content area), Integrated Science, Assessment
Audience: 3-5, MS, HS
Type: Vendor Session

12:00 pm - 1:45 pm Michigan 1

Cookbook Conversions

Nancy Lareau, U of M Flint; Courtney Ruggles, University of Michigan Flint; Madeline Wohlfeil, University of Michigan-Flint; Daniela Goetz, University of Michigan-Flint; Katherine Eaton, University of Michigan-Flint
Using NGSS practices to transform high school science cookbook lessons into student centered inquiry.

Topic: Integrated Science
Audience: HS
Type: Educator Session

12:00 pm - 12:45 pm Meeting Room 103

Making STEM a Reality with Real Data

Robert Ause, Greenhills School,
Data on solar power, wind power and weather help us integrate the four STEM strands. Learn how you too can use these data to enhance your STEM curriculum.

Topic: Integrated Science, STEM
Audience: MS, HS
Type: Educator Session

12:00 pm - 12:45 pm Meeting Room 202

Mythology and Science

Michelle Lane, The Roeper School,
An interdisciplinary unit exploring mythology and science. In ancient times humans came up with interesting and creative ways to explain the things they observed around them. With modern science we know so much more about natural phenomena. We are also living in a time where the line between science and myth has once again become blurred. This unit involves science, language arts, social studies and critical thinking in an interdisciplinary theme that is very engaging. Most suitable for upper elementary-middle school.

Topic: General Session (not specific to any content area), Earth Science, Integrated Science, Interdisciplinary
Audience: 3-5
Type: Educator Session

12:00 pm - 12:45 pm Meeting Room 203

Writing in Science

Rachel Rysdyk, Ludington High School,
Ten lessons that help a student develop the skills to write a paper in the science classroom.

Topic: General Session (not specific to any content area)
Audience: HS
Type: Educator Session

12:00 pm - 12:45 pm Meeting Room 205

Bringing Mindfulness to the Science Classroom

Amy Williams, Grand Blanc West Middle School,
A beginner's approach to introducing mindfulness to your students. Hear how you can integrate mindfulness to improve your students' abilities to observe, question, & collaborate.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS
Type: Educator Session

12:00 pm - 12:45 pm Banquet 1

Deriving the Law of Conservation of Matter through Student Models

Anne LaSovage, Southfield Public Schools,
Experience NGSS-rich postlab activities for the burning magesium lab. See how students can use data, models and engaged discourse to determine that their product is MgO and that mass is conserved.

Topic: Chemistry
Audience: HS
Type: Educator Session

12:00 pm - 12:45 pm Banquet 3

From Traditional Teaching to 3-D Learning: How to Breathe New Life into A Biology Curriculum

Michelle Vanhala, Tecumseh High School; Paula Gentile, Tecumseh High School
This session overviews a model for transitioning from traditional science courses to those that foster 3-D learning using NGSS-aligned curricula (including resources from CarbonTIME and Next Generation Science Storylines).

Topic: General Session (not specific to any content area), Biology
Audience: HS
Type: Educator Session

SATURDAY, MARCH 3

12:00 pm - 12:45 pm Banquet 4

Implementing NGSS into Biology/ Acc Bio

Greg Cooper, John Glenn High School,
Our team has implemented a new aligned curriculum using the NGSS standards and a cart of Chrome Books to incorporate as many aligned TED Talks, You Tube videos to connect with students.

Topic: Biology
Audience: HS
Type: Educator Session

12:00 pm - 12:45 pm Banquet 6

Building Artful Structures

Angie Herek, Williamston Community Schools
Using STEAM concepts and standards, come see how this Art Teacher used grant funding for a unit on Architecture with students in kindergarten through 5th grade.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5
Type: Educator Session

12:00 pm - 12:45 pm Capitol 1

STEAMing Up Our Science Programs

Lloyd Hilger, Hanover Horton Schools
During the last few years I have been teaching STEAM for students from young 5's, kindergarten through high school, I will be sharing insights and activities that I have gained from these opportunities. We will also be doing a 3rd grade activity in which we will making complete circuits with LED lights and drawings.

Topic: General Session (not specific to any content area), Computer Science / Technology
Audience: K-2, 3-5, MS, HS, Coll
Type: Educator Session

12:00 pm - 12:45 pm Gov

Teaching Physics with ROV's

Kyle Ondersma, Ionia Public Schools
I would like to share a project based learning activity that uses remotely operated submersible vehicles (ROV's) to teach students content from a physics class or physical science course. This is based on the SeaPerch project and uses materials from that program.

Topic: Physics
Audience: MS, HS
Type: Educator Session

12:00 pm - 12:45 pm Michigan 2

GRACE project update

Russell Columbus, Monroe Public Schools,
Learn how you can become involved with GRACE project, which has already provided GIS training to hundreds of Michigan teachers and thousands of Michigan students.

Topic: Computer Science / Technology
Audience: HS
Type: Educator Session

12:00 pm - 12:45 pm Michigan 3

Using Texts to Engage Students in Three-Dimensional Science

Kirsten Edwards, Michigan State University,
Find out how to use readings to support student engagement in science practices and student understanding of the nature of science. Free Carbon TIME readings to use with your students.

Topic: Biology, Environmental Education
Audience: MS, HS
Type: Educator Session

12:00 pm - 12:45 pm Regency 1

Michigan Chemistry Teachers Meeting

Mary McMaster, Allen Park High School; Michelle Mason, Portage Northern HS
The MCTA is interested in creating opportunities for teachers to connect beyond the MSTA conference. Join us as we discuss the needs of Chemistry teachers in Michigan.

Topic: Chemistry
Audience: HS
Type: Educator Session

12:00 pm - 12:45 pm Regency 2

National Geographic Educator Certification Workshop

Susan Tate, Whitehall Middle School,
Do you believe in the power of science, exploration, education, and storytelling to change the world? Learn about the benefits and the process of becoming a National Geographic Certified Educator.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS
Type: Educator Session

1:00 pm - 1:45 pm Meeting Room 101

Turning Chemistry Labs into STEM Labs

Robert Ause, Greenhills School,
Traditional chemistry labs can be turned into "STEM" labs. When students design their own set-up, statistically analyze their data and retry revised procedures, chem labs become STEM labs.

Topic: Chemistry
Audience: HS
Type: Educator Session

1:00 pm - 1:45 pm Meeting Room 102

Learning by doing: Practical applications online

Samantha du Preez, EVERFI,
Learn how to bring STEM concepts to life for 4?12 grade students through EVERFI's online, interactive modules, available at no cost to educators thanks to public and private sponsorships.

Topic: Computer Science / Technology, Integrated Science
Audience: MS, HS
Type: Vendor Session

SATURDAY, MARCH 3

1:00 pm - 1:45 pm Meeting Room 201

Online Resources for the Science Classroom

Christine Schneider, Library of Michigan/MDE,
Did you know you have FREE access to over $3 million worth of online subscription databases? We will explore what science resources are available from the Michigan eLibrary (MeL.org) and how to access them.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS
Type: Non-Profit Vendor

1:00 pm - 1:45 pm Meeting Room 202

Kepler Made Me Do It

John Dumar, Lutheran North High School,
Collecting data from 450 million miles away, how cool is that?! Come learn how your students can verify Kepler's third law of planetary motion using simple astronomy equipment.

Topic: Physics, Earth Science, Astronomy
Audience: MS, HS
Type: Educator Session

1:00 pm - 1:45 pm Meeting Room 203

Influence of research experiences on science teacher knowledge and practice

Amy Lark, Michigan Technological University; Abbi Halkola, Michigan Technological University
We share insights from our study of Michigan science teachers on how their experiences with scientific research have influenced their thinking about the nature and practices of science and their teaching practice.

Topic: General Session (not specific to any content area), Teacher Education
Audience: Coll
Type: Educator Session

1:00 pm - 1:45 pm Meeting Room 205

Living Coral Reef in the Classroom

Kirbay Preuss, Preuss Pets,
Explore science through a reef aquarium! Open the door to learning concepts such as symbiotic relationships, ocean acidification, biodiversity, taxonomy, and water chemistry, all the while fostering a desire to protect the natural world.

Topic: Biology, Chemistry, Environmental Education
Audience: K-2, 3-5, MS, HS
Type: Vendor Session

1:00 pm - 1:45 pm Banquet 1

Making Use of Student Thinking

Mark Olson, Oakland University,
Strategies for effectively using student thinking to inform science instruction will be shared. The presenters, student-teachers from Oakland University, will share mini-cases from their teaching that illustrate effective teaching practices.

Topic: General Session (not specific to any content area), Biology
Audience: HS
Type: Educator Session

1:00 pm - 1:45 pm Banquet 2

Using Children's Literature to Guide Science Inquiry K-5

Kim Stilwell, NSTA - National Science Teachers Association,
Need ideas to connect literacy and science? Join us to explore how resources such as Picture-Perfect Science can help engage elementary teachers and students in STEM and reading.

Topic: General Session (not specific to any content area), Integrated Science, science and literacy
Audience: K-2, 3-5
Type: Non-Profit Vendor

1:00 pm - 1:45 pm Banquet 3

Evo-Ed Cases: Connecting Biology Across the Curriculum

Alexa Warwick, Michigan State University; Clinton Bartholomew, Jackson Preparatory & Early College
Evo-Ed cases track the evolution of traits from the molecular to population level. This session introduces the cases and an example implementation of case-based, spiral curriculum for 9th grade biology.

Topic: Biology
Audience: HS, Coll
Type: Educator Session

1:00 pm - 1:45 pm Banquet 4

Opioids, Flu, Zoonoses, Obesity: Oh My!

Richard Blauvelt, Harper Woods High School,
Join a CDC Science Ambassador fellow to find out how this program can benefit you. Learn about available lesson plans that teach epidemiology to secondary students and how you can become a CDC Science Ambassador.

Topic: General Session (not specific to any content area), Biology
Audience: MS, HS
Type: Educator Session

1:00 pm - 1:45 pm Banquet 5

The Lecture Is Dead: Using Alternative Classroom Models to Enhance Student Learning

Vanessa Logan, Avondale High School
This presentations focuses on how science teachers can use flipped learning, choice based learning and flexible seating to enhance the education experience of their students. Attendees will learn about how teachers can create this classrooms to improve differentiation, use of class time and interest of students.

Topic: General Session (not specific to any content area)
Audience: MS, HS, Coll
Type: Educator Session

1:00 pm - 1:45 pm Banquet 6

Fusing Art in Science from an Elementary Art Room

Angie Herek, Williamston Community Schools
Come and see how one elementary Art teacher has fused together the Science standards with the world of visual arts to help students reinforce science concepts and ideas.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5
Type: Educator Session

SATURDAY, MARCH 3

1:00 pm - 1:45 pm Banquet 8

How Much and How Often

Samantha Cree, Lawrence Jr./Sr. High School; Cynthia Duncan, Father Gabriel Richard High School
Students test different dosing devices to determine which is most accurate for measuring liquid medicine. They also use a model to illustrate the effects of taking medicine more frequently than recommended.

Topic: Biology, Chemistry
Audience: MS, HS
Type: Educator Session

1:00 pm - 1:45 pm Capitol 2

City Critters: Connecting Science and Empathy

Lisa Forzley, Detroit Zoological Society
The Detroit Zoological Society integrates science and empathy in City Critters, a program designed to teach about animals while simultaneously fostering reverence. Discover how to incorporate these connections in your curriculum.

Topic: Informal Science (museums, nature centers, etc.), Life Science
Audience: K-2, 3-5
Type: Non-Profit Vendor

1:00 pm - 1:45 pm Capitol 4

Chemistry of International Cuisine

Scott Milam, Plymouth High School
I will be sharing my experience cooking various international dishes with my students' families and then modifying recipes to explore a chemistry topic.

Topic: Chemistry
Audience: HS
Type: Educator Session

1:00 pm - 1:45 pm Gov

Make a mini-motor, mini-generator and a speaker

Timothy Hall, Francis Reh Academy
Guest will make a mini-motor using magnet, magnet wire, paperclips and 6v Battery. They will then use the magnet wire are create electrical current using magnets and multi-meter. Lastly, they will make a speaker out of cardboard, styrofoam-plate and magnet wire.

Topic: Physics
Audience: MS
Type: Educator Session

1:00 pm - 1:45 pm Michigan 3

Digital Microscopy for $40

Robert Myers, West Ottawa High School,
Use of cheap easily obtained USB microscopes that can be attached to any standard microscope, allowing digital capturing of images by any USB capable device (including chromebooks). Allows students to capture image and do annotations to show that they can identify cellular features. Video can also be captured.

Topic: Biology, Computer Science / Technology, Environmental Education, Assessment
Audience: MS, HS, Coll
Type: Educator Session

1:00 pm - 1:45 pm Regency 1

"Mr. Mastie, I Can Still Remember When We...."

David Mastie, Ann Arbor Public Schools,
These are often the first words I hear upon meeting students from years ago. Today I will share some of these activities with you. Each is simple, inexpensive, and powerful.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS, Coll
Type: Educator Session

1:00 pm - 1:45 pm Regency 2

Reflecting on Learning with Google Drive

Danielle Aguilar, Lee M Thurston High School,
A fresh take on how to use technology to elicit student reflection. You will leave with classroom- tested templates that engage students in reflection (without taking an entire class period)!

Topic: General Session (not specific to any content area), Computer Science / Technology
Audience: MS, HS
Type: Educator Session

1:00 pm - 2:45 pm Meeting Room 103

Dark & Light: Nature Writing & Observation

Brandon Groff, Greenhills School; Monica Lewis, Greenhills School
In an ongoing effort for interdisciplinary learning, we designed a class project that would sharpen students' abilities to observe the natural world, and strengthen technical and creative writing skills.

Topic: Biology, Environmental Education, English
Audience: HS
Type: Educator Session

1:00 pm - 2:45 pm Banquet 7

Mi-STAR Professional Learning Session III: Addressing 21st Century Challenges

Emily Gochis, Michigan Technological University / Mi-STAR; Megan Coonan, Saginaw ISD; Stephanie Tubman, Michigan Technological University/ Mi-STAR;
Participate in activities from a middle school integrated STEM unit to learn how students use science and engineering to model and address 21st century topics. Handouts Provided. (Attendance at all three in this series can qualify as Mi STAR Day One Training)

Topic: General Session (not specific to any content area), Integrated Science
Audience: MS
Type: Educator Session

1:00 pm - 2:45 pm Capitol 1

Diggin' Outdoor Education

Nancy Berg, Clarkston Family Farm; Chelsea Obrien, Founder-Clarkston Family Farm
Hands -on outdoor environmental ecological experiences, lesson plans, and explorations used at the Clarkston Family Farm, an educational non-profit organization in Clarkston Michigan will be shared with science teachers K- 5 .

Topic: Earth Science, Environmental Education
Audience: K-2, 3-5
Type: Educator Session

SATURDAY, MARCH 3

1:00 pm - 2:45 pm Michigan 2

Discrepant Events Abound

Rachel Badanowski, Wayne State University,
Discrepant events can involve students in the processes of science, particularly discussion. Resources will be supplied.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS, HS, Coll
Type: Educator Session

2:00 pm - 2:45 pm Meeting Room 101

Productive Talk in the Science Class

Chris Blackstock, Delta Education,
Go through an activity to see how creating a culture of productive talk can really promote higher level thinking as well as support student respect and positive interactions.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5, MS
Type: Vendor Session

2:00 pm - 2:45 pm Meeting Room 104

Challenge Your Students to Make a Dozen Classroom Motors

Michael Suckley, MCC,
Fundamental concepts of magnetic and electromagnetic fields and their interaction will be demonstrated and applied to building twelve different classroom motors. The first twenty-five participants will receive a teaching unit including materials, step by step instructions, explanations of each motors operation and hands-on experience building them.

Topic: General Session (not specific to any content area), Physics, Integrated Science
Audience: MS, HS, Coll
Type: Educator Session

2:00 pm - 2:45 pm Meeting Room 202

Questioning Our World- An introduction to Plate Tectonics

Lynette Wehner, Plymouth-Canton Community Schools,
Put students in the driver's seat in this introductory lesson on plate tectonics. Using colorful geological maps, students work together to ask questions and form ideas about what they observe.

Topic: Earth Science
Audience: MS
Type: Educator Session

2:00 pm - 2:45 pm Meeting Room 203

Genetics Lessons You Can Use Tomorrow!

Karen Garland, Holy Family Catholic School,
Make the topic of DNA and Mendelian genetics engaging and memorable with these middle school classroom-tested songs and activities that will activate the creativity of your students. Please be prepared to share your successful ideas as well.

Topic: Biology
Audience: MS, HS
Type: Educator Session

2:00 pm - 2:45 pm Meeting Room 204

Blended Science Teaching for the Modern Kid

Maria Gonzalez, Holy Family School,
Looking to blend teacher/student friendly technology without losing the hands-on aspects for NGSS? Come try out some classroom tested, student-approved tools you can meld into your own great lessons.

Topic: Earth Science, Computer Science / Technology, Integrated Science
Audience: 3-5, MS
Type: Educator Session

2:00 pm - 2:45 pm Banquet 1

Five Phenomenon to Get you Started in NGSS

Andrew Frisch, Farwell High School; Duncan Gervin, Farwell High School
Phenomenon is a new concept to the Science teaching pedagogy and it is the driving force for lesson plan design. What are phenomenon and how do they get incorporated into lesson planning? There will be (at least) five specific phenomena provided from various science topics and expatiation of how the phenomena lead a lesson and ultimately the lesson planning.

Topic: General Session (not specific to any content area), Biology, Chemistry, Physics
Audience: MS, HS
Type: Educator Session

2:00 pm - 2:45 pm Banquet 2

Vernal Pool Patrol: Citizen Science and Place-Based Education to Promote Science Learning and Stewardship

Yu Man Lee, Michigan Natural Features Inventory; Daria Hyde, Michigan Natural Features Inventory; Phyllis Higman, Michigan Natural Features Inventory; Peter Badra, Michigan Natural Features Inventory
The Vernal Pool Patrol is a citizen science- and place-based program for educators and students to get involved with monitoring and conservation of vernal pools in Michigan.

Topic: Biology, Environmental Education
Audience: MS, HS
Type: Educator Session

2:00 pm - 2:45 pm Banquet 3

Hollistic Instruction (Biology Focus)

Lyndi Wolfinger, Homer H.S.
Learning to integrate the important steps of building your classroom community while simultaneously delivering curriculum can be difficult. This ongoing approach will help to build relationships that will enhance learning.

Topic: General Session (not specific to any content area)
Audience: HS
Type: Educator Session

SATURDAY, MARCH 3

2:00 pm - 2:45 pm Banquet 4

"Starting From Scratch"

Katelyn Rozema, Lee M. Thurston High School
What do you do when you can't find an appropriate curriculum for your course? Learn how to use Case Studies and the New Standards to create your own curriculum!

Topic: General Session (not specific to any content area), Biology, Curriculum Design
Audience: MS, HS
Type: Educator Session

2:00 pm - 2:45 pm Banquet 6

Circuit Bugs

Jennifer Edwards, Ronald Brown Academy, DPSCD; Cindy Hill, Ronald Brown Academy, DPSCD
Make circuits fun with bug creations! Use your knowledge of electricity to create your own "circuit bug" with light-up eyes.

Topic: Physics, Physical Science
Audience: 3-5, MS
Type: Educator Session

2:00 pm - 2:45 pm Banquet 8

Do Bees Get a Bad Rap?

Polly Cheney, author Sip, Pick, and Pack...How Pollinators Help Plants Make Seeds
A rhyme to help Junior Master Gardeners learn about seed formation morphed into a book "Sip, Pick and Pack…How Pollinators Help Plants Make Seeds" and native and non-native pollinators stole the show.

Topic: Environmental Education
Audience: 3-5
Type: Vendor Session

2:00 pm - 2:45 pm Capitol 2

NGSS Yourself

Walter Charuba, Grosse Pointe Public Schools
Tweak old lessons to the 3D NGSS format. There will be five transformed astronomy lessons examples from my curriculum to be handed out at the workshop.

Topic: General Session (not specific to any content area), Earth Science
Audience: 3-5, MS
Type: Educator Session

2:00 pm - 2:45 pm Capitol 3

Justify Your Energy-Based Claims

James Gell, Plymouth High School; Nicole Murawski, Royal Oak High School
Having students justify their claims provides immediate feedback that can produce the change that is learning. We will focus on the interdisciplinary topic of energy to develop examples.

Topic: General Session (not specific to any content area)
Audience: 3-5, MS, HS, Coll
Type: Educator Session

2:00 pm - 2:45 pm Capitol 4

AP Chem Labs with Minimal Prep

Jamie Benigna, The Roeper School; Alice Putti, Jenison High School
This session will focus on labs aligned to the AP Chemistry Curriculum with easy setups, including management tips for both prescribed and guided-inquiry approaches. Lab handouts will be supplied.

Topic: Chemistry
Audience: HS, Coll
Type: Educator Session

2:00 pm - 2:45 pm Governor

Ideas for Ecosystems in the Elementary Classroom

Nicole Jakubowski, Detroit Country Day School ; Marlenn Maicki, Detroit Country Day School; Meghan Kurleto, Detroit Country Day School;
Invigorate your student's study of ecosystems with a variety of activities. STEAM activities, research project ideas, simulation games, NSTA recommended trade books, and hands-on activities that you can use tomorrow.

Topic: General Session (not specific to any content area)
Audience: K-2, 3-5
Type: Educator Session

2:00 pm - 2:45 pm Michigan 3

Assessing with Share Posters

Carrie Hoffman, Certified Elem/MS Teacher,
Share posters are concrete examples of abstract ideas, in visual form. Experience making one, and learn how it enhances a higher-thinking, differentiated, student-focused classroom!

Topic: General Session (not specific to any content area), Assessment
Audience: 3-5, MS, HS
Type: Educator Session

2:00 pm - 2:45 pm Regency 1

Cosmetic Experiments for Grades 8-12

Larry Kolopajlo, Eastern Michigan University,
A former cosmetics chemist describes experiments to prepare, lotions, hand and face creams, lipstick, blush, lip balm, shampoo, and perfume. The experiments are suitable for middle or high school chemistry students.

Topic: Chemistry, Integrated Science
Audience: MS, HS, Coll
Type: Educator Session