Session Descriptions

Great Transitions: The Origin of Humans - Examining the Evidence and Claims
Mark Eberhard, St. Clair High School
David Kenyon, Paw Paw High School
Primary Subject: BI
Interest Level: HS, CO
Location: LC - 201

Using FREE resources from the HHMI Biointeractive, we will explore evidence and claims for the evolutionary story of our human origins. In this hands-on session, participants will work through three field tested student activities that incorporate the NGSS core ideas and science practices. HHMI Biointeractive resources are always 100% FREE and are based on the primary literature of actual research being conducted in the field! Resources will be available to all participants!

1:30 p.m. - 2:30 p.m. – Workshop

Chemical Batteries (Energy for Grade 6)
Bill Cline, LAB-AIDS
Primary Subject: GS
Interest Level: MS
Location: LC - Banquet 5

Although we live a battery-powered lifestyle, most of us (middle school and high school students included) have no idea how batteries actually work. Make a wet cell battery. Explore the effect of using different metal electrodes on battery output, and consider ways to reduce the number of discarded batteries in the waste system. You’ll engage in an activity from the SEPUP Science Grade 6 Program from LAB-AIDS that supports the new teacher/student talk ratios, and also has the literacy, notebooking, assessment strategies built in that makes it NGSS ready!

Coding for Kids Clubs: Engaging Students with Computer Programming at the Elementary Level
Kathy Surd, Mason-Lake Oceana Math/Science Center
Primary Subject: CO
Interest Level: EE
Location: R - Capital 4

Coding for Kids Clubs were established in elementary schools in Mason, Lake, and Oceana Counties using the code.org resources. (This program was developed under a grant awarded by the Michigan STEM Partnership in conjunction with the Mason-Lake Oceana Mathematics and Science Center.)

Differentiated Learning Through Stationed Activities
Cortney Ford, Mason High School
Primary Subject: BI
Interest Level: MS, HS
Location: LC - 203

Looking for lessons that get your students collaborating and thinking critically while they are actively engaged? Try using stations to reinforce old concepts and get your students thinking about new ideas.

Session Key:

Primary Subject Levels:
AS – Assessment/Curriculum
CH – Chemistry
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PH – Physics
AST – Astronomy

Interest Levels:
EE – Early Elementary
LE – Late Elementary
MS – Middle Level
HS – High School
CO – College
SCECH Session
Vendor Session

Location:
R – Radisson
LC – Lansing Center
Session Descriptions

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

**Engineering and Design Activities for Chemistry**
Laura Bell, Stockbridge High School

*Primary Subject: CH*
*Interest Level: HS*
*Location: LC - 104*

Chemistry can be a difficult subject to incorporate engineering skills into. I will present several ideas and activities which focus on design, optimization, and creative applications of chemistry concepts.

**Enhancing Classroom Learning Through Digital Dissection**
Samantha Suiter, PETA

*Primary Subject: BI*
*Interest Level: MS, HS, CO*
*Location: LC - 202*

This interactive session includes hands-on experience with dissection software programs, covering educational efficacy, economic benefits and current laws/policies regarding the use of animals in science. Participants are asked to bring a laptop.

**Green Chemistry Connections: Inspiring Students with Innovation**
Erika Fatura, Pentwater Public Schools
Jennifer Sherburn, Hesperia Public Schools

*Primary Subject: GS, EN*
*Interest Level: MS, HS, CO*
*Location: R - Capital 1*

Beyond Benign, Steelcase Inc., and a team of MI high school chemistry teachers have teamed up to create an interactive set of lessons that highlight green chemistry innovation. Are mushrooms the new plastic? What does the surface chemistry of shark scales have to do with bacteria? How can we create safer pigments and dyes? Learn the answers to these questions and more. Attendees with receive free samples and door prizes will also be available!

**Integrating Chromebook with Vernier Technology**
Patti Smith, Vernier Software & Technology

*Primary Subject: GS, CO*
*Interest Level: LE, MS, HS, CO*
*Location: LC - Banquet 6*

Collecting and analyzing data helps students learn critical science concepts that increase test scores and promote science inquiry. This hands-on workshop will address data collection with Chromebook and Vernier technology, including LabQuest Mini. Experiments, such as Boyle’s Law, Grip Strength Comparison, and Ball Toss, will be conducted.

**MSELA Strand**

**Processes for Collaborative Decision Making and Leveraging Different Perspectives-Take 2**
Mike Gallagher, Oakland Schools

*Primary Subject: AS*
*Interest Level: EE, LE, MS, HS, CO*
*Location: LC - 102*

It’s universal. Most science departments are comprised of people with varying beliefs about our aims, instructional practices and urgency for change. Join us again as we explore processes and communication norms so that the energy that comes from varying views can be harnessed in a productive way.

**Reading in Science—Make Your Students Better Readers**
Stephanie Niedermeyer, Joni Vancampenhout, Wayne Memorial High School

*Primary Subject: GS, BI*
*Interest Level: MS, HS*
*Location: R - Capital 2*

Get some great ideas on how to help your students to become better readers in science. Handouts and prizes will be given out!

**Referee? Not Me! Stop Refereeing and Start Teaching!**
Janet Jagitsch, Northwest Technical Institute

*Primary Subject: IN*
*Interest Level: EE, LE, MS, HS*
*Location: R - Michigan 2*

Reduce misbehavior without using gimmicks or bribing students. Win back more time to do what you love “teach” while empowering your students to make better choices and achieve success.

**STEM = STEAM Different Sides of the Equation**
David Larwa

*Primary Subject: GS*
*Interest Level: EE, LE, MS, HS, CO*
*Location: R - Michigan 3*

Artists and designers have given life and form to science. Join me for a new look at the technical and creative models of origami. Used today from auto design to heart operations, origami isn’t a child’s game.
Session Descriptions

Student Talk for Deeper Understanding - Discourse in Science
Patricia Richardson, Kristy Butler, Forest Hills Central High School
Primary Subject: BI, IN
Interest Level: MS, HS, CO
Location: LC - 204

Join us as we share ideas we have to get students talking to each other about content instead of listening to us talk to them. As students think with each other they build their content knowledge. We will share what discourse methods we use with our 9th grade through AP students. You will get to try some and handouts will be provided.

3:00 p.m. - 3:45 p.m. – Sessions

Atmospheric and Earth Observations with Kite-Borne Sensors
David Bydlowski, Andy Henry, Wayne RESA
Primary Subject: ES, EN
Interest Level: MS, HS
Location: R - Capital 4

You and your students can use and design sensors to collect, process, and share data about our Earth’s atmosphere, temperature, light, humidity and more.

Bacteria, Antibiotics and Antibiotic Resistance: What Your Students Need to Know
Elaine Bailey, MARR
Primary Subject: BI
Interest Level: LE, MS, HS
Location: LC - 203

This session will provide an overview of recent CDC report about antibiotic resistance threats in the U.S. and environmental impact and global concerns. Participants will also learn about a free two day high school biology/health, and a 2nd – 8th grade elementary curriculum. And much more!

Brilliant Biology
Joseph Spadafore, Kristy Butler, Forest Hills Central High School
Primary Subject: BI
Interest Level: HS
Location: LC - 204

Come and learn about new and engaging, inquiry-centered biology labs aligned to the NGSS. Handouts provided.

2:00 p.m. - 3:45 p.m. – Workshop

Nature Tales - Storybooks to Science
Claire Lannoye-Hall, Lisa Forzley, Detroit Zoological Society
Primary Subject: EN
Interest Level: EE, LE
Location: R - Capital 3

Engage your students in science through activities stemming from popular youth literature. We’ll share several storybooks with simple low- or no-cost authentic science activities you and your students will enjoy.

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Interest Levels:
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- SCECH Session
- Vendor Session

Location:
- R – Radisson
- LC – Lansing Center
Civics, Science, and Stewardship
Kevin Frailey, MI Dept. of Natural Resources
Primary Subject: GS, EN
Interest Level: LE, HS, CO
Location: LC - Governors
America’s model of wildlife conservation and the holding of these resources in the public trust is one of the greatest conservation achievements in history. Learn how you can relate these important themes into your science classes and demonstrate that America’s crucial natural resources belong to you and your students. Their future is dependent on the service and stewardship of future generations.

Michigan Mathematics/Science Centers Network Strand
Defining STEM
Kathy Agee, Regional M/S Center @ GVSU
Primary Subject: AS, IN, GS
Interest Level: EE, LE, MS, HS, CO
Location: LC - 101
Through examining current definitions of STEM education, active discussion, and reflection, develop your own working definition of STEM to share with parents and stakeholders and guide classroom instruction.

Documenting Student Growth through Interactive Notebooking
Sara Schymick, Sue Vitolins, Warren Woods Middle School
Primary Subject: AS, GS
Interest Level: LE, MS, HS
Location: R - Regency 2
Learn how to incorporate interactive science using the formative assessment process and standards-based grading. You will have access to tools that will allow students to goal set and assess their progress towards content specific targets.

Exploring Innovative Approaches to Blended STEM Instruction
Andrew VandenHeuvel, Michigan Virtual University
Primary Subject: CO, IN
Interest Level: HS, CO
Location: R - Michigan 2
Major movements in K-12 science education, including the NRC framework, blended learning, and STEM education are creating unique opportunities to break the traditional boundaries between academic programs and vocational training.

Fostering Three-Dimensional Learning: Curiosity in the Science Classroom
Wendy Johnson, MSU - Dept of Teacher Ed.
Primary Subject: GS, IN
Interest Level: MS, HS, CO
Location: LC - 202
This session presents results from classroom research demonstrating the importance of eliciting students’ ideas and scaffolding their scientific curiosity. I will share examples, resources, and strategies that teachers can implement immediately.

Great, Cheap, Easy Demonstrations for Matter and Energy
Andrew Frisch, Farwell Area Schools
Primary Subject: GS, IS
Interest Level: LE, MS, HS
Location: LC - 205
There will be several great demonstrations designed for upper elementary though introductory high school science courses. These demonstrations will focus on Laws of Conservation of Energy and Law of Conservation of Matter.

I-Engineering: Tools for Teaching and Learning Engineering Practices
Angela Calabrese Barton, MSU
Primary Subject: GS, PH
Interest Level: MS
Location: R - Michigan 1
I-Engineering provides tools to support middle school teaching and learning of engineering practices with a simultaneous focus on positive student identities in engineering (core ideas focus: energy systems).

Making Connections with the 7E Learning Cycle
Gary Curts, Ohio Education Association
Primary Subject: EG
Interest Level: HS
Location: R - Regency 1
Bring the 7E learning cycle (elicit, engage, explore, explain, elaborate, evaluate, extend) into your classroom and give your students the opportunity to connect Crosscutting Concepts, build Disciplinary Core Ideas from the ground up and use Science and Engineering Practices inside the classroom everyday.

POGIL Activities for AP Chemistry from Flinn Scientific
Jillian Saddler, Flinn Scientific
Primary Subject: CH, BI
Interest Level: HS
Location: LC - 104
Process Oriented Guided Inquiry Learning (POGIL) activities guide students. This workshop will present strategies for incorporating POGIL activities into your AP Chemistry course, and will provide free sample activities.
Session Descriptions

Putting the Practices into Practice
Holly McGoran, Jenison Junior High School
Primary Subject: GS
Interest Level: LE, MS
Location: R - Capital 1

Be ready to actively engage in the science and engineering practices as we look at examples of implementation at the upper elementary and middle school levels.

STEM Summer Camp
Emma Haygood, Amanda Barrett, Gervea Ornopia, Berrien Springs Middle School
Primary Subject: GS
Interest Level: EE, LE, MS
Location: R - Michigan 3

Does your district want to start their own STEM summer camp opportunity for students? We will share how our district engaged K-8 students with hands-on engineering and coding projects.

The Panel: Questions and Answers Regarding the Michigan Science Standards
MSTA Leadership
Primary Subject: AS, GS
Interest Level: EE, LE, MS, HS
Location: LC - Banquet 1 & 3
Panel: Stephen Best, MI Department of Education-School Reform

State and National Science leaders from Michigan will share perspectives, resources, and thoughts about next steps for work on the new Michigan Science Standards. Some time will be given for questions.

MSELA Strand
Using the Equip Rubric to Guide Materials Adoption
Jen Arnswald, Ionia Public Schools
Primary Subject: AS
Interest Level: EE, LE, MS, HS, CO
Location: LC - 102

Join us as we use the Equip Rubric to evaluate and examine curricular materials.

WhoInfectedWhom?(CellBiologyforGrade7)
Bill Cline, LAB-AIDS
Primary Subject: GS
Interest Level: MS
Location: LC - Banquet 5

In this activity from the SEPUP middle level life science series, participants use a chemical simulation for the transmission of infectious, communicable diseases. By keeping careful records of their interactions with other participants, they are able to track the progress of the contagion in a fictional school community. You’ll engage in an activity from the SEPUP Science grade 7 Program from LAB-AIDS that supports the new teacher/student talk ratios, and also has the literacy, notebooking, assessment strategies built in that makes it NGSS ready!

Beak of the Finch: Using Statistics in Biology
David Kenyon, Paw Paw High School
Mark Eberhard, St. Clair High School
Primary Subject: BI
Interest Level: HS, CO
Location: LC - 201

Using FREE resources from the HHMI Biointeractive, we will explore the use of mathematics and modeling in the biology classroom. In this hands-on session, participants will work through several field tested student activities based on Peter and Rosemary Grant’s groundbreaking work with the Galapagos finches. These activities will incorporate the NGSS core ideas and science practices. HHMI Biointeractive resources are always 100% FREE and are based on the primary literature of actual research being conducted in the field! Resources will be available to all participants!

Engaging Students in Scientific Argumentative Reading, Writing, and Thinking
Ellen Karel, Katie Parrish, Byron Center High School
Primary Subject: AS, LT
Interest Level: MS, HS
Location: LC – Banquet 8

How to change your instructional and assessment practices so that students can improve their ability to read, write, and think about real world, data rich, science concepts. This session will provide opportunities to see and try research based classroom strategies that work!

Fast, Fantastic Formative Assessment for the Science Classroom
Mark Francek, CMU - Geography
Primary Subject: AS, GS, IN
Interest Level: EE, LE, MS, HS, CO
Location: R - Capital 2

Receive hands on experience using fun, quick, and effective formative assessment techniques. Some of these resources are activities that can be implemented in seconds to using phone apps.

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Location:
R – Radisson
LC- Lansing Center
Session Descriptions

3:00 p.m. - 3:45 p.m. continued

Planning and Designing Safe and Sustainable Science Facilities for Project-Based/STEM Curriculum

LaMoine Motz
Primary Subject: GS
Interest Level: EE, LE, MS, HS
Location: LC - Banquet 6

Needing new science facilities? Does your curriculum define your science teaching facility? With more than 20 years of conducting visits and presentations of new/renovated school science facilities, the lead author of the NSTA GUIDE TO PLANNING SCHOOL SCIENCE FACILITIES, (2nd Ed.) will present “basics” of science facility planning for safe, ergonomically designed, and sustainable facilities.

CREATE for STEM Institute Strand
Resources Integrating NGSS and CCS with Project-Based Learning

Susan Codere Kelly, NGSS Michigan - CREATE for STEM
Joseph Krajcik, Deborah Peek-Brown, CREATE for STEM Institute
Mario Lemmons, Dezia Harper, Moria Custodio, Henry Ford Academy

Primary Subject: AS, IN
Interest Level: EE, LE
Location: LC - Banquet 7

Introducing the Multiple Literacies in Project-Based Learning Project:
- Bring science to life for young learners
- Experience 3-D Learning to meet NGSS, incorporate CCS
- Learn about free resources under development

3:00 p.m. - 5:00 p.m. – Workshop

MEECS Energy Resources

Jessica Wagenmaker, Holton Middle School

Primary Subject: AS, EN
Interest Level: LE, MS
Location: LC - 103

Investigate a broad array of topics such as electricity generation, renewable and nonrenewable energy resources, energy conservation and sustainability.

4:00 p.m. - 4:45 p.m. – Sessions

Active Physics/Active Chemistry: Inquiry Science That Engages Students

Gary Curts, It’s About Time

Primary Subject: C, PH
Interest Level: HS
Location: R - Regency 1

No matter their career path, our students will be surrounded by a world of science and technology. In our high school Active Physics and Active Chemistry programs, employing the same engineering practices that engineers use as they design and build models and systems, students develop through highly collaborative, hands-on, computer-rich, interactive learning environments. Also includes solutions to real world problems while improving conceptual understanding. Come see a true STEM approach to learning.

Carbon TIME: Free NGSS-Aligned Biology Curriculum and Professional Development Opportunities

Wendy Johnson, MSU - Dept of Teacher Ed.
Cheryl Hach, Kalamazoo Area Math/Science Center

Primary Subject: BI, EN
Interest Level: MS, HS
Location: LC - 202

The Carbon TIME (Transformations in Matter and Energy) curriculum includes six phenomena-based units tracing matter & energy through processes such as photosynthesis and respiration at different scales. Opportunities to join a professional learning network.

Cognitively Impaired Inclusion Classes in Biology, Chemistry, Physics, etc.?

Janis Buckingham, Jackson Northwest High School

Primary Subject: IN
Interest Level: MS, HS
Location: R - Capital 1

CI Inclusion Class? “I’m not trained!” Don’t panic. Practical “What to do’s,” suggestions, ideas and supplies for survival will be presented. Aides? Mentors? Processes for Success will be shared. You can do it! Some hands-on and handouts given.

Energy that Powers Michigan

Andrew Frisch, Farwell Area Schools

Primary Subject: GS, PH
Interest Level: LE, MS, HS
Location: LC - 205

The Law of Conservation of Energy rules our modern world. This session will explain how our natural resources are turned into electricity. Then it will expand on how these fuels are the cause of Global Climate change. It will demonstrate how leaving your lights on is causing the polar ice caps to melt.

Human Population: Past, Present and Future Carrying Capacity

Larry Feldpausch

Primary Subject: EN
Interest Level: MS, HS
Location: R - Regency 2

More than the demographic facts of life, the social, economic and environmental impact of a burgeoning population will also be explored. The approach to the issue is interdisciplinary. Lessons for teachers outside of science will be shared.
Session Descriptions

**Investigate Forensics with Flinn Scientific**

Meg Griffith, Flinn Scientific

Primary Subject: CH, BI  
Interest Level: HS  
Location: LC - 104

See demonstrations of a variety of products and activities that will get your students engaged in forensic science! Features professional grade products used by real CSI teams. From footwear impression castings to fingerprints there is always something left behind at a crime scene to be analyzed.

**MSELA Strand**

**Leading the Change Toward NGSS: Department Chair Round Table**

Wendi Vogel, Kent Intermediate School District  
Primary Subject: AS  
Interest Level: EE, LE, MS, HS, CO  
Location: LC - 102

Join department chairs, science coaches, and curriculum leaders in a round table discussion on leading the change to NGSS.

**Live Animals & Bio Facts – Natural Tools for Learning**

Dennis Laidler, Potter Park Zoo  
Primary Subject: EN  
Interest Level: EE, LE  
Location: LC – 203

Using live animals we will discuss strategies for keeping classroom animals, bringing in animal guest, and visiting zoos, nature centers and farms. Includes best practices pitfalls and how to maximize benefits.

**Making It Real... Cheap!**

Darrick Gregory, STARBASE- Battle Creek  
Jodi Heaney, Julie Hahn, Parchment School District  
Primary Subject: GS  
Interest Level: LE, MS  
Location: R - Michigan 3

This session will include a variety of examples involving “real-world” science that can be done for little or no cost. Presenters will incorporate technology to enhance ideas, and handouts will be provided.

**NASA's Soil Moisture Measurement Mission**

David Bydlowski, Andy Henry, Wayne RESA  
Primary Subject: ES, EN  
Interest Level: MS, HS  
Location: R - Capital 4

NASA's Soil Moisture Active Passive Mission (SMAP) measures soil moisture from space. Get involved by collecting GLOBE measurements for “ground-truthing.” You and your students can be part of GLOBE and NASA’s SMAP Mission.

**Scientific Models: Shifting Lessons in Modeling to Deepen Conceptual Understanding**

Adrienne Griffith, Diana Bowman, Armstrong Middle School  
Primary Subject: AS, IN  
Interest Level: LE, MS  
Location: R - Michigan 2

Explore one school’s journey in shifting lessons to effectively develop, use, and evaluate scientific models. View sample of student notebooks, modeling lessons, evaluation tools, and department discussion topics. Handouts provided.

**Talk Moves: Guiding Engaging Science Discussions**

Richard Bacolor, Pierce Middle School  
Primary Subject: GS  
Interest Level: EE, LE, MS, HS  
Location: R - Michigan 1

NGSS asks students to do the heavy lifting in developing a deep understanding of science concepts. This session gives teachers a framework for facilitating small and whole group discussions that help students go beyond “learn about” science, and “figure out” science for themselves.

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  - CO – College

- Location:  
  - R – Radisson  
  - LC – Lansing Center
Session Descriptions

Saturday, March 5, 2016

8:00 a.m. - 8:45 a.m. – Sessions

**Bridging Physical Education and Environmental Education at the Elementary Level**
Patricia McNinch, Mayville Elementary School
Primary Subject: EN
Interest Level: EE, LE
Location: R - Capital 1

Teaching Physical Education through experiences in Environmental Education gives opportunities for students to become physically fit and to encourage students to explore science in new ways.

**Elementary Strand**

**Catapult your Kids into an Elementary STEM Project!**
Crystal Brown, Parsons Elementary School
Primary Subject: GS, IN
Interest Level: EE, LE
Location: LC - 104

Elementary students thrive in STEM based projects! They want to create, build, tear apart and re-build. K-5 teachers will walk away with hands on experience and resources for a unit that is project-based and developed for students to explore, research and learn about the concepts of energy. They will then apply their understanding to build and redesign their best performing catapult model. Students are questioning, researching, analyzing, testing, and re-designing. Come see how a catapult unit can incorporate the cross-cutting concepts, disciplinary core ideas, and scientific and engineering practices in a meaningful way!

**Chemistry Teacher Meeting**
Mary Jordan McMaster, Allen Park High School
Primary Subject: CH
Interest Level: HS
Location: R - Regency 1

Join other high school chemistry teachers to discuss recent developments and opportunities pertaining to teaching Chemistry.

**Get a Sneak Peek at the BCAMSC MSS Aligned Units**
Nancy Karre, Battle Creek Area Math/Science Center
Primary Subject: AS, IN
Interest Level: EE, LE, MS
Location: LC - Banquet 8

This session will give current and interested participants in the BCAMSC Science unit program a glimpse into the BCAMSC alignment process, progress, and how districts and teachers can prepare for MSS in the classroom.

**Great, Cheap, Easy Demonstrations for Matter and Energy**
Andrew Frisch, Farwell Area Schools
Primary Subject: GS, IS
Interest Level: LE, MS, HS
Location: LC - 203

There will be several great demonstrations designed for upper elementary though introductory high school science courses. These demonstrations will focus on Laws of Conservation of Energy and Law of Conservation of Matter.

**Human Population: Past, Present and Future Carrying Capacity**
Larry Feldpausch
Primary Subject: EN
Interest Level: MS, HS
Location: LC - 102

More than the demographic facts of life, the social, economic and environmental impact of a burgeoning population will also be explored. The approach to the issue is interdisciplinary. Lessons for teachers outside of science will be shared.

**MSS & STEM can be FUN!!**
Lu Anne Clark
Primary Subject: ES, PH
Interest Level: EE, LE
Location: R - Michigan 3

A fun, hands-on and interactive presentation of several Michigan science standard STEM earth and physical science related activities for children that are cheap and supply friendly. Handouts will be available.

**Muffins for Members**
Robby Cramer, MSTA Executive Director
Jen Arnswald, MSTA President Elect
Paul Drummond, MSTA Membership Chair
Primary Subject: IS, AS
Interest Level: EE, LE, MS, HS, CO, Administrators
Location: LC – 101

Consider the next steps needed regarding the new Science standards. What do you need from your professional organization? Meet MSTA teacher early adopters! Learn more about the current work of MSTA leaders to help Michigan teachers transition to the new Michigan Science Standards. Share your needs!

**Next Steps Planning for Curriculum and Instruction**
Megan Schrauben, Tamara Smolek, MDE - John Hannah Bldg.
Primary Subject: GS
Interest Level: EE, LE, MS, HS, CO
Location: LC - 104

MDE has grant opportunities and standards updates to share. We hope to show how the different initiatives support each other and answer any questions that you may have for us.
Session Descriptions

8:00 a.m. - 9:45 a.m. – Workshops

**Energizing Lessons Learned from a Chemistry Teacher & Industry Partnership**
R. Charles Dershimer, U of M - School of Education
Vicki Behe
Rebecca Talik, Carrollton High School
Mary Hillebrand, Calvary Baptist Academy
Scott Harrison, Freeland Middle School

Primary Subject: CH
Interest Level: MS, HS
Location: LC - Banquet 6

Learn about engaging chemistry lessons developed through a partnership with the American Association of Chemistry Teachers and Dow Chemical Company. Handouts for lessons and information on ACS Science Coaches provided.

**Investigate Photosynthesis and Cellular Respiration Using Algae Beads!**
Tamica Stubbs, Bio-Rad Laboratories

Primary Subject: CH, BI
Interest Level: MS, HS
Location: LC - Banquet 2

In this hands-on workshop, learn how algae beads can be used in inquiry investigations to study photosynthesis and cellular respiration in a calorimetric assay that examines CO2 consumption and release.

**NASA STEM: The Scoop on Soils (Grades K-9)**
Susan Kohler, NASA Glenn Research Center

Primary Subject: ES, IN
Interest Level: EE, LE, MS
Location: LC - 202

Experience water studies with the NASA GLOBE resources including teacher guides, ELA storybooks and related STEM activities designed for grades K-6. The activities promote problem solving, and communication skills.

**Physics Make and Take**
Steve Dickie, Divine Child High School
James Gell, Plymouth High School

Primary Subject: PH
Interest Level: MS, HS
Location: R - Capital 3

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

**Playing with Underwater Gliders and Exploring Engineering Design Process**
Nina Mahmoudian, Donna Ziaee Fard, Michigan Tech

Primary Subject: AS, EN, IN
Interest Level: MS, HS
Location: LC - 205

A hands-on activity for exploring engineering design process inspired by underwater gliders exploring ocean environment will be presented. The activity is inexpensive and can be easily adopted in classrooms.

**Project-based Learning - Using Video-enhanced Lessons**
Mike Heithaus, Houghton Mifflin Harcourt

Primary Subject: BI
Interest Level: MS, HS
Location: LC - 204

Project-based Learning - Using Video-enhanced Lessons to Bring Students Into the Field.

**Shish-Kebab Planet: (This is not a cooking class)**
David Mastie

Primary Subject: ES, GS
Interest Level: LE, MS
Location: R - Michigan 2

Participants will: Skewer an Earth model, Illustrate Earth’s tilt, model latitude and longitude, discover year, seasons, time zones and satellite orbits. Build a magnetometer to find Earth’s magnetism and poles, and use sky calendars.

**Stability and Change in Michigan Ecosystems: An Example Mi-STAR Unit**
Robin Allen, Barbara McIntyre, Midland Public Schools

Primary Subject: AS, GS
Interest Level: MS
Location: R - Capital 2

Mi-STAR is developing an integrated science curriculum for Michigan that aligns with NGSS. Participate in hands-on activities from a classroom-tested unit on health and disturbance of Michigan ecosystems. Handouts provided.

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Locations:
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- LC – Lansing Center
Session Descriptions

8:00 a.m. - 9:45 a.m. continued

The Physiological Impact of Poverty on Behavior and Academic Performance
Audrey Richardson, Detroit Public Schools
Primary Subject: GS, IN
Interest Level: EE, LE, MS, HS, CO
Location: LC - Governors
Examine how acute and chronic stressors impact low socioeconomic students’ behavior and academic performance. Demonstrate and discuss effective strategies to reduce the impact of poverty on behavior and academic performance. This includes a “hands-on” activities. Handouts will be provided.

What’s in Your Walls? Teaching Sustainability through NGSS
Gwen Windiate, Sheri Turner, Emily Gochis
Primary Subject: CH, ES
Interest Level: MS, HS
Location: LC - 201
Mi-STAR is developing an integrated science curriculum for Michigan that aligns with NGSS. Participate in activities from a classroom-tested unit on the life cycles of building materials. Handouts provided.

8:30 a.m. - 10:30 a.m. – Workshop

MEECS Climate Change
Janet Vail, Grand Valley State University
Primary Subject: AS, EN
Interest Level: MS, HS
Location: LC - 103
Learn about climate and weather, the energy balance, the carbon cycle, and the Greenhouse effect. Students will observe change in the Earth’s cycles and climate.

9:00 a.m. - 9:45 a.m. – Sessions

Elementary Inquiry Extravaganza!
Tim Larrabee and Betty Crowder, Oakland University
Primary Subject: GS
Interest Level: EE, LE, MS, HS
Location: LC - Banquet 1
Join the fun as Oakland University pre-service teachers provide you with a wealth of inquiry and engineering activities that will engage your students and their inquisitive minds. This hands-on session targets elementary science and engineering, but many of the activities could be adjusted for younger or older students.

Saturday

Energy that Powers Michigan
Andrew Frisch, Farwell Area Schools
Primary Subject: GS, PH
Interest Level: LE, MS, HS
Location: LC - 203
The Law of Conservation of Energy rules our modern world. This session will explain how our natural resources are turned into electricity. Then it will expand into how these fuels are the cause of Global Climate change. It will demonstrate how leaving your lights on is causing the polar ice caps to melt.

Engaging Science for English Language Learners (ELLs)
Puja Mullins, Brick Elementary School
Amanda Pringle, Lincoln Consolidated Schools
Primary Subject: AS, IN
Interest Level: EE, LE, MS, HS
Location: R - Michigan 3
Children learn language and science in much the same way through authentic, meaningful experiences. Learn strategies for ELLs and struggling readers in your science class. Participate in activities that target language and literacy goals through science content.

Facilitating Students’ Understanding of the Structure and Properties of Matter
David Doherty, BitWixt Software Systems
Primary Subject: CH, CO
Interest Level: MS, HS
Location: LC - Banquet 4
From middle to high school, students’ understanding of the structure/properties of matter increases in complexity. We demonstrate 3D atomic and molecular models, for laptops/Chromebooks and iPads, to facilitate this growth in understanding.

Global Change in the Classroom: Creating Stewards of the Earth
Zakiya Jackson, Detroit Public Schools
Diana Koss, Ralph J. Bunche Pre K-8 School
Primary Subject: EN
Interest Level: LE, MS
Location:
Make environmental science come alive for all students through interactive and engaging hands-on projects. Global change topics including stewardship, outdoor education, and environmental appreciation and literacy will be addressed. For general Ed, and special Ed. teachers alike.
Session Descriptions

**Elementary Strand**

**How to Deliver a Dynamic Elementary Science Lesson with Rigor**

Derek Sale, Gompers Elementary/Middle School

*Primary Subject: GS, IN*
*Interest Level: EE, LE, MS*
*Location: LC - 101*

This session will provide several strategies to transform your everyday elementary science lesson plan into a dynamic learning moment for your students.

**Science and the MDE Early Literacy and Numeracy Initiative**

Megan Schrauben, Tamara Smolek, MDE - John Hannah Bldg.

*Primary Subject: LT, IN*
*Interest Level: EE, LE*
*Location: LC - 104*

You may have heard about the Governor’s Third-Grade Literacy Workgroup Report and how additional funds are moving into classrooms to support this work—come find out how science directly relates to this work, the supports and initiatives that MDE is working on, and how your students will greatly benefit.

**Teacher Professional Development without the Loss of Instructional Time with Students**

Michelle Cline, Hope for K-8 Education

*Primary Subject: IS*
*Interest Level: EE, LE, MS*
*Location: LC - 102*

Does your district struggle with finding substitutes? Are you tired of leaving plans that are not taught by the sub while you attend PD? We have the solution for you!

**The Art of Chemistry**

Jelane Richardson, Allen Park High School

*Primary Subject: CH*
*Interest Level: HS*
*Location: R - Regency 1*

Come see how Art and Chemistry blend to make great hands-on experiences for Chemistry.

**The Chemistry of Color: Getting Students on the Right Frequency**

Bill Cline, LAB-AIDS

*Primary Subject: CH*
*Interest Level: HS*
*Location: LC - Banquet 5*

Would you use a spectrophotometer in your high school chemistry classes if it were inexpensive, reliable, and easy for students to use? Since this powerful tool is a common feature in modern chemical analysis - of course you would! Join us for hands-on activities using RGB spectrophotometers to explore simple serial dilutions and core applications of the technology. From a **Natural Approach to Chemistry** from LAB-AIDS.


Amelia Miller, Michigan Farm Bureau

*Primary Subject: BI, EN*
*Interest Level: MS*
*Location: LC - Banquet 7*

Investigate differences between roots and tubers in this plant science and nutrition lesson. Meeting 7-9 grade science and main standards.

9:00 a.m. - 10:45 a.m. – Workshops

**Eco Impact: How Our Choice Affect the Earth and Its Inhabitants**

Lisa Forzley, Detroit Zoological Society

*Primary Subject: EN*
*Interest Level: EE, LE, MS, HS, CO*
*Location: R - Capital 4*

Participate in hands-on activities/discussions that will connect our daily choices with the impact they have on the planet. Walk away with lessons that you can immediately implement in your classroom.

**Session Key:**

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MSTA 63rd Annual Conference • March 4-5, 2016 • Radisson Hotel & Lansing Center, Lansing, MI
Session Descriptions

9:00 a.m. - 10:45 a.m. continued

Engineering the Future - Exploring Engineering Design in the NGSS
Dr. Eric Mann, Hope College - Dept of Math/Phy/Eng.
Susan Ipri-Brown, Lindsey Grymniewics, Sherah Head, Alex Klunder, Hope College

Primary Subject: EN
Interest Level: EE
Location: LC - Banquet 3

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

Framing Your Lessons in Phenomena
Nancy Karre, Battle Creek Area Math/Science Center

Primary Subject: IN
Interest Level: EE, LE, MS
Location: LC - Banquet 8

Make the shift from inquiry-based lessons to a lessons framed in relevant phenomena. Learn how to frame lessons in phenomena that is applicable and significant to student learning and aligned with MSS.

9:00 a.m. – Noon – Workshop

The Modeling Method in Electricity and Magnetism
Donald Pata, Grosse Pointe North HS
Laura Ritter, Troy High School

Primary Subject: PH
Interest Level: EE, LE, MS, HS
Location: R - Regency 2

Participants will create and apply models in electrostatics, circuits and magnetism. They will be introduced to the Modeling Method for teaching physics through hands on activities designed to engage and enlighten.

10:00 a.m. - 10:45 a.m. – Sessions

An Integrated Approach to Teaching Metamorphic Rocks of Michigan
Sarah Van Goor, GVSU

Primary Subject: ES
Interest Level: MS, HS
Location: R - Capital 1

Participants will explore a new, integrated approach to teaching about the metamorphic rocks and history of Michigan using hand samples, Google Earth, and geologic maps.

Bacteria, Antibiotics and Antibiotic Resistance: What Your Students Need to Know
Elaine Bailey, MARR

Primary Subject: BI
Interest Level: LE, MS, HS
Location: LC - 204

This session will provide an overview of recent CDC report about antibiotic resistance threats in the U.S. and environmental impact and global concerns. Participants will also learn about a free two-day high school biology/health, and a 2nd – 8th grade elementary curriculum. And much more!

Bridging the STEM Gap with Science Olympiad
Michele Svoboda

Primary Subject: AS
Interest Level: EE, LE, MS, HS
Location: R - Regency 1

Learn about the Science Olympiad program and how many of the events will translate into STEM lessons that support NGSS. Lesson ideas will be shared in a handout.

Co-Robots Can Serve as Co-Educators for Students
Nina Mahmoudian, Michigan Tech

Primary Subject: AS, CO, IN
Interest Level: MS, HS, CO
Location: LC - 205

This session introduces two of Michigan Tech robots (GUPPIE and Neu-pulator) that enable students to learn how robots can help to explore the environment and augment human capabilities.

Continuing the Journey into Technology; Building a Curriculum
Carl Van Faasen, Holland High School

Primary Subject: CH
Interest Level: HS
Location: LC – 104

I will share the curriculum I built that is available to all online. We will discuss the advantages and disadvantages of 1:1 technology in the classroom as we prepare for the future of education.

Fingerprint of an Atom
Bill Cline, LAB-AIDS

Primary Subject: CH
Interest Level: HS
Location: LC - Banquet 5

Students have trouble relating electron orbitals and spectra lines. Join us for a unique and fun atom building model experience. After modeling electron configurations, we will explore how color is used to identify elements using a unique deck of spectrum cards to take home. In fact, we will send you home with 58 engaging chemistry labs from A Natural Approach to Chemistry from LAB-AIDS that support the new teacher/student talk ratio.
Session Descriptions Saturday

FREE teacher/student STEM labs and Career Exploration Labs
Robert Tonti, Macomb Community College
Primary Subject: IN, IS
Interest Level: MS
Location: LC - 102

FREE Teacher/Student STEM labs taught in your classroom for Macomb, Oakland and Wayne County schools. Learn how to bring the STEM Outreach program to your school or community group.

Elementary Strand
Integrate Literacy & Writing into Elementary Science by Using Interactive Notebooks
Carolyn Mammen, Hart Middle School
Brian Peterson, Musson Elementary School
Betty Crowder, Oakland University
Primary Subject: GS
Interest Level: EE, LE, MS
Location: LC - 101

Don’t skip science in your elementary classroom - use it to strengthen your students’ expository writing and reading by integrating science notebooks into your instruction and make science fun!

Michigan Environmental Literacy Plan Update
Elaine Kampmueller, MAEOE
Tom Occhipinti, DEQ
Megan Schrauben, MDE
Pan Bunch, STEM Learning Connections
Primary Subject: EN
Interest Level: EE, LE, MS, HS, CO
Location: LC - Banquet 7

A summary of the MI ELP will be presented by members of the MI ELP task force. Attendees will be able to ask questions, make suggestions, and give feedback on this plan.

Michigan’s Magnetic Secrets
Eric Engel, South Lyon East High School
Primary Subject: ES
Interest Level: HS
Location: LC - 202

See how Michigan Technological University’s Research Experience for Teachers in Paleomagnetism can be used to help students get over their misconceptions about the Earth’s magnetic field.

Modeling Dynamic Equilibrium Activity
Scott Milam, Plymouth Canton Community Schools
Primary Subject: CH
Interest Level: MS, HS, CO
Location: R - Capital 3

A hands on activity for representing dynamic equilibrium. Models will be constructed for concentration and rate. The activity can be used for AP chemistry or for physical equilibrium situations.

Science in the Making: 3-D Printing
Christie Gayheart, Jefferson Middle School
Primary Subject: GS
Interest Level: MS, HS
Location: LC - 203

Real-world engineering design and modeling. The fun begins by building 2-liter bottle rockets, and ends with a challenge between classes of redesigned bottle rockets with 3-D printed fins.

Simple and Effective Ways to Bring Inquiry Into Your Classroom
Jaime Ratliff, Patrick Lothrop, Lapeer Community Schools
Primary Subject: GS
Interest Level: LE, MS
Location: LC - Governors

Leary of inquiry? Let us help you bring inquiry to your classroom. We have assembled an easy to follow plan to help you scaffold and get started right away! Handouts provided.

Small Eruptions with Big Impacts: An Eyjafjallajokull-like eruption in U.S.?
Brooke Ramsey
Steve Mattox, GVSU
Primary Subject: ES
Interest Level: MS, HS
Location: R - Michigan 2

Participants predict movement of the Eyjafjallajökull ash cloud and the economic and political impacts. Then apply a model of an ash cloud from Redoubt over America and evaluate the impacts.

“Spring” into Hands-on Learning
Krystle St. John, Nah Tah Wahsh PSA
Emily Gochis, Michigan Tech University
Primary Subject: ES, PH
Interest Level: MS, HS
Location: LC - 201

Engage students by connecting unique natural sites to scientific phenomena. In this NGSS hands-on lesson, students apply basic principles of energy to investigate the source of Michigan’s largest spring.

Session Key:

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Interest Levels:
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MS – Middle Level
HS – High School
CO – College
SCECH – SCECH Session
Vendor – Vendor Session

Location:
R – Radisson
LC – Lansing Center
Session Descriptions

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

**Standards-Based Grading in the Next Generation**

Phil King, Erik Johnson, Lakeview Middle School  
Primary Subject: AS, IN  
Interest Level: LE, MS, HS  
Location: LC - Banquet 4

Learn a practical set of steps to make the shift to a standards-based grading system. Promote student proficiency on learning targets, streamline your interventions, and foster student ownership and reflection.

**Teach Students How to Write a Story Using LEGO®**

Ivery Toussant, LEGO Education  
Primary Subject: GS  
Interest Level: EE, LE, MS, HS  
Location: LC – Banquet 1

Is there a student on Earth who doesn’t love LEGO? StoryStarter, from LEGO Education, taps into that enthusiasm with a language and literacy product that combines an inviting tub of LEGO's with thoughtful lessons on user-friendly writing and comic software while addressing core standards. Hands-on Elementary.

**Three-Dimensional Learning in Your Classroom: Applying NGSS through Michigan Themes**

Jennifer Grivins, Eaton Rapids High School  
Brenda Bergman, Michigan Tech University  
Primary Subject: AS, GS  
Interest Level: LE, MS, HS, CO  
Location: R - Capital 2

Unpack the three dimensions of NGSS and identify ways to engage Michigan students in NGSS through 21st-century applications, real-world data, and significant places related to Michigan. Hands-on and handouts provided.

10:00 a.m. - 11:45 a.m. – Workshops

**Creative Engineering in STEM Using Design Thinking for Problem Solving**

R. Charles Dershimer, U of M - School of Education  
Christopher Patten, Henry Ford Learning Institute  
Primary Subject: IN  
Interest Level: MS, HS  
Location: LC - Banquet 6

Participate in this hands-on design challenge where you use design thinking to creatively solve a problem that meets human needs. A great way to introduce engineering to your students.

11:00 a.m. - 11:45 a.m. – Sessions

**Institute of Food Technologists - Middle and High School Outreach Program**

Gene Maly, Institute of Food Technologists  
Primary Subject: AS, IN  
Interest Level: MS, HS  
Location: R - Michigan 3

IFT is an international professional association composed of chemists, microbiologists, nutritionists, and food scientists. IFT is dedicated to providing nutritious foods to the world. We will detail the teaching resources IFT has to assist middle and HS teachers to teach the basics of the chemistry of food.

**Science Saturdays—Detroit Public Schools’ Monthly Hands-On Science PLCs**

Amy Lazarowicz, Neinas Elementary School  
Alica Brown, Detroit Public Schools  
Donna Holtz  
Primary Subject: AS, IN  
Interest Level: LE  
Location: LC - Banquet 2

Participate in a condensed version of Science Saturdays Workshops. District Teacher Leaders plan and facilitate grade level PLCs using hands-on activities for the current curriculum and science concepts. GRADES 3-5.

10:00 a.m. - 10:45 a.m.

**An Integrated to Teaching the Geology of the Cascade Volcanoes**

Claire Sobolak, Grand Valley State University  
Primary Subject: ES  
Interest Level: HS, CO  
Location: R - Michigan 2

Participants will explore a new integrated approach to teaching igneous petrology and volcanology of the Cascade Range using hand samples, Google Earth, and geologic maps.

**Bull’s Eye Lab for Different Levels of Physics**

Amy Stone, Jason Colegrove, Forest Hills Central HS  
Primary Subject: PH  
Interest Level: HS  
Location: LC - 205

Explore two dimensional projectile motion where students are required to predict where to place a target to be hit with a projectile. Hands on lab. Handouts are provided.

**Challenge Your Students to Make Waves**

Michael Suckley, Paul Klozik  
Primary Subject: GS, IN, PH  
Interest Level: LE, MS, HS, CO  
Location: LC - 201

Sound is the sensation perceived by the ear caused by the vibration of some medium. This workshop will explore sound through the use of the “Sound Portal” which provides access to thirty
Session Descriptions

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differentiated learning through stationed activities

Cortney Ford, Mason High School

*Primary Subject: BI
*Interest Level: MS, HS
*Location: LC - 204

Looking for lessons that get your students collaborating and thinking critically while they are actively engaged? Try using stations to reinforce old concepts and get your students thinking about new ideas.

Do It Outdoors - MSS/ GLCE's, ELA, Math, and More!

Jody Harrington

*Primary Subject: AS, EN
*Interest Level: EE, LE
*Location: R - Regency 1

Combine science with reading, writing, and math in an active outdoor garden setting. Get students “doing science” using the latest Michigan Science Standards (or GLCE’s), Science Practices, and Crosscutting Concepts. Participants will be presented with MSS Performance Expectations aligned to each grade level with the best Environmental Education activities.

Enhancing Classroom Learning Through Digital Dissection

Samantha Suiter, PETA

*Primary Subject: BI
*Interest Level: MS, HS, CO
*Location: LC - 202

This interactive session includes hands-on experience with dissection software programs, covering educational efficacy, economic benefits and current laws/policies regarding the use of animals in science. Participants are asked to bring a laptop.

Exploring the Science Explanation Framework through What’s Your Evidence?

Jan Douglas, Pioneer Middle School

Donna Pahl, Carrie McManus, Plymouth-Canton Community Schools

*Primary Subject: IN
*Interest Level: EE, LE
*Location: LC - 102

A district science instructional coach and two elementary teachers will share their experience of transforming their teaching from “hands-on” to “minds-on” through a study of What’s Your Evidence? Handouts provided.

Family Engineering Night: A Night for the Whole Family!

Kristie Massey, Allen Academy

*Primary Subject: GS
*Interest Level: EE, LE
*Location: R - Capital 3

Want to get families involved and you’re not sure how? Host a Family Engineering Night! Learn how with hands on activities. Hand outs will be provided.

Interactive (and effective!) Formative Assessment for your Science Classroom

Shawn McNamara, Grosse Pointe Public Schools

*Primary Subject: AS, ES
*Interest Level: EE, LE, MS, HS
*Location: R - Capital 1

Looking for quick and effective ways to assess your students’ progress? Experience first-hand how to use a variety of high-tech and low-tech tools for measuring student learning.

Michigan’s New Science Standards - Next Steps

Stephen Best, MI Department of Education-School Reform

*Primary Subject: AS, GS
*Interest Level: EE, LE, MS, HS
*Location: LC - 101

Michigan has (finally) adopted new Science Standards for K-12 Students. So, now what do we do? This session will look at strategies that the Michigan Department of Education is moving on to implement the standards, and will look at a variety of considerations for schools and educators in what next to consider. Issues will include assessments, instructional practices, curriculum development and alignment, teacher certification, educator evaluation, and other issues impacted by the new standards.

Session Key:

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- CO – College
- SCECH Session
- Vendor Session

**Location:**
- R – Radisson
- LC – Lansing Center
Session Descriptions

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

**NGSS, CCSS, and 21st Century Skills Oh MI!**

Katie Stevenson, Fisher Elementary
Richard Bacolor, Pierce Middle School

*Primary Subject: AS, IN*
*Interest Level: EE, LE, MS*
*Location: R - Capital 2*

Overwhelmed with all of the standards you have to teach? Trying to get students college and career ready? Leave with strategies that address CCSS and NGSS while preparing students for the 21st century. Handouts provided.

**Supporting English Learners in the Science Classroom**

Wendi Vogel, Kent Intermediate School District
Sanela Sprecic, Kentwood Public Schools

*Primary Subject: IN*
*Interest Level: EE, LE*
*Location: LC - Banquet 8*

Join an EL teacher and a science teacher walk through some research-based ways to assist these learners in your science classroom, while still honoring their culture.

**Powerful Science Notebooks**

Joanne Rowe, Birmingham Public Schools
Michelle Ladd, West Maple Elementary School

*Primary Subject: GS, IN*
*Interest Level: EE, LE*
*Location: LC - 203*

Learn how to leverage science notebooks using the NGSS Science and Engineering Practices. Templates, journal entry types, student examples, implementation strategies, assessments, rubrics will be shared. Electronic handouts provided.

**The Kirtland’s Warbler: A New Vision for Endangered Species Conservation**

Abigail Ertel, Kirtland’s Warbler Alliance

*Primary Subject: BI, EN*
*Interest Level: EE, LE, MS, HS*
*Location: LC - Banquet 3*

As birds go, the Kirtland’s Warbler is a rock star. People come from all over the world to see it in its northern Michigan summer home. They are attracted to it because it is so rare (only about 4,000 birds in the total population) and because it has a fascinating story. That story may soon be changing: There are signs that the Kirtland’s Warbler may soon be coming off the Endangered Species List. That change would present several challenges because the species is conservation reliant -- it depends upon continuing intervention by humans for its survival. So, what happens if the species is removed from the ESA and conservation efforts are withdrawn? The presentation will include an overview of the bird’s biology, causes of its near extinction, efforts that have been made to bring it back from the brink, and a look at a new vision for conservation that relies on public-private partnerships. I will provide handouts.

**Reorganizing Biology Content - A Bottom Up Approach**

Julie Alexander, Erin Marsh, Grand Ledge High School

*Primary Subject: BI*
*Interest Level: HS*
*Location: LC - Banquet 1*

Join us on a journey through the biology content that begins in the cell and ends with ecology. Attendees will participate in several hands-on activities. Handouts will be provided.

**Simple, Authentic Inquiry**

Claire Lannoye-Hall, Detroit Zoological Society

*Primary Subject: IN*
*Interest Level: EE, LE, MS, HS*
*Location: R - Capital 4*

This hands-on workshop will provide attendees with examples of simple ways to incorporate authentic inquiry in the classroom. Successes and challenges will be openly shared and discussed.

**Transform your Science Fair into a STEM Challenge Fair!**

Crystal Brown, Parsons Elementary School

*Primary Subject: GS, IN*
*Interest Level: EE, LE*
*Location: LC - 104*

If you’ve been doing the same old Science Fair, come learn about the amazing opportunities for a STEM Challenge Fair! You will see your students able to design their own models, analyze their own results, and use their data to re-develop a better model.

**Using Climate Proxies to Learn About Earth’s Climate History**

Bill Cline, LAB-AIDS

*Primary Subject: ES*
*Interest Level: MS, HS*
*Location: LC - Banquet 5*

How can scientists tell what Earth’s climate was like thousands of years before human measurements? This activity simulates the use of fossil ocean foraminifera, tiny organisms whose growth patterns...
Session Descriptions

are different in warm and cold water. Your students will analyze and graph samples of replicas of these organisms, and use this information to determine relative warm and cold periods in the past 200,000 years. This activity is from EDC Earth Science, and new NSF-sponsored earth system program that uses an active, BIG DATA approach from LAB-AIDS that supports the new teacher/student talk ratio, and also has the literacy, notebooking, assessment strategies built in that make it NGSS ready!

**Introduction to MEECS On-line Learning Portal**
Susan Loughrin, Kevin Holohan, Amanda Syers, Grand Valley State University

*Primary Subject: EN*  
*Interest Level: LE, MS*  
*Location: LC - 103*

MEECS Online! MEECS workshops have been offered to Michigan Educators since 2006. MEECS is now adding online course to supplement the workshop training.

12:00 p.m. - 12:45 p.m. – **Session**

**The Panel: Questions and Answers Regarding the Michigan Science Standards**

**MSTA Leadership**

*Primary Subject: AS, GS*  
*Interest Level: EE, LE, MS, HS*  
*Location: LC - 101*

Panel: Stephen Best, MI Department of Education – School Reform

State and National Science Teachers from Michigan will share perspectives, resources, and thoughts about next steps for work on the new Michigan Science Standards. Some time will be given for questions.

1:00 p.m. - 1:45 p.m. – **Sessions**

**Bring Out the “T” in STEM with Special Education Students**

Jennifer Wickersham, Peck Elementary School  
Deb Stephan, Rockwell Junior High School

*Primary Subject: CO*  
*Interest Level: LE, MS*  
*Location: R - Capital 4*

Technology does not have to be overwhelming. Lessons that incorporate the use of technology by special education students will inspire you to remember that there are no limits to what students can do!

**Design A Sustainable Future**

Joan Chadde, W UP Cntr-Sci/M & Envir. Ed.  
Lauri Davis, Houghton High School

*Primary Subject: EN*  
*Interest Level: LE, MS, HS*  
*Location: R – Michigan 3*

Students are confronted by many challenging issues in today’s world, from climate change to pollution, overpopulation, and more. This session will present a positive counter-balance. There is a lot happening to support sustainability and today’s youth need to hear about it so they can aspire to sustainable career paths and feel positive about the future. Students will investigate building design, renewable energy sources, product life cycles, transportation, vehicle design, sustainable forestry, and food systems.

**Energizing Education-A Complete and Free Energy Unit for Michigan Students**

Michelle Mitchell, Michelle Stepek, Consumers Energy

*Primary Subject: ES, EN*  
*Interest Level: LE, MS, HS*  
*Location: LC - 205*

Consumers Energy will showcase our new Energy Unit targeted at middle and high school students and demonstrate several hands-on activities from the unit. Attendees receive a copy of the unit containing 12 energy lessons covering a range of energy topics.

**Great Adaptations: Teaching Practices That Support Diverse Learners**

Julia Maceri, Cheryl Czarnik, Davis Jr. High School

*Primary Subject: GS, IN*  
*Interest Level: EE, LE, MS*  
*Location: R - Regency 2*

The power of a learning community builds strong relationships, resulting in adaptations of teaching practices. The outcome is highly engaging science for students with diverse needs.

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- **Location:**  
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Integrating Effective Leadership, Science Literacy, and Technology into Science Instruction
Tooba Mansoor, Dearborn Center for M/S/Tech
Primary Subject: GS
Interest Level: MS, HS
Location: R - Capital 3
Experience hands-on activities to incorporate literacy and technology in your science classroom. In addition, learn leadership skills to assist students to become better leaders. Handouts will be provided.

Interdisciplinary Learning for a Changing Planet
Holly Schaeffer, Potterville Public Schools
Primary Subject: BI, EN
Interest Level: MS, HS
Location: LC - 202
Participate in hands-on activities that apply math and science skills to tackle major global challenges, including human population pressures, finite natural resources and climate change. Receive a CD of lesson plans.

MCSS Strand
Letting Swift River Go
Carol Bacak – Egbo, Oakland University
Primary Subject: LT, EN
Interest Level: EE, LE
Location: LC – Banquet 7
Learn how to use picture books focusing on human/environment interaction to engage students in inquiry and connect science, social studies, and literacy.

Physics of Atomic Nuclei - Learn About MSU Cylotron and FRIB
Caleb Miller, Richard Lund, St. Johns Public High School
Primary Subject: CH, PH, AST
Interest Level: MS, HS
Location: R - Capital 1
Learn about the research being done at the MSU Cylotron and FRIB facility including summer workshops for teachers, students and field trips. Door prizes, hand-outs and hands on activities related to star life cycles, rare isotopes, and astro-physics for all ages!

Promoting Collaborative Learning and Productive Interactions in the Science Classroom
Paula Gentile, Jennifer Garland, Belleville High School
Primary Subject: GS, BI
Interest Level: HS
Location: R - Regency 1
This session focuses on strategies to support science students in collaborating on task-based initiatives, critiquing the work of their peers, and productively interacting with one another throughout the learning process.

Science Saturdays—Detroit Public Schools’ Monthly Hands-On Science PLCs
Jennifer Edwards, Ronald Brown Academy
Constance Elliott, Detroit Public Schools
Rosemarie Gurin
Primary Subject: AS, IN
Interest Level: EE
Location: LC - Banquet 4
Participate in a condensed version of Science Saturdays Workshops. District Teacher Leaders plan and facilitate grade level PC’s using hands-on activities for the current curriculum and science GLCEs. (First Grade).

STEM = STEAM Different sides of the Equation
David Larwa
Primary Subject: GS
Interest Level: EE, LE, MS, HS, CO
Location: LC - Governors
Artists and designers have given life and form to science. Join me for a new look at the technical and creative models of origami. Used today from auto design to heart operations, origami isn’t a child’s game.

Elementary Strand
STEM for All Elementary Students!
Crystal Brown, Parsons Elementary School
Primary Subject: GS
Interest Level: EE, LE
Location: LC - 103
Providing incorporated Science, Technology, Engineering, and Mathematical experiences for ALL elementary students can be daunting. Come to gather ideas for STEM projects designed for each grade level, using materials readily available or inexpensive. I will provide resources teachers can use/adapt to teach any STEM project and we will complete one STEM project that could be adapted to be used K-5. Tap into your students’ natural curiosity and desire to build and problem solve with a STEM project!

Contagion! Track the Progress of Dangerous Viruses throughout the Country
Tamica Stubbs, Bio-Rad Laboratories
Primary Subject: CH, BI
Interest Level: MS, HS
Location: LC – Banquet 1
Disease can spread like wildfire through populations. Become an epidemiologist in this hands-on workshop and track diseases like the fictional Zombie Virus. See if you can track down patient zero!
Session Descriptions

Super Science from the Smithsonian
Laura Trombley, Shields Elementary School
Mary Jo Griffin, Adams Elementary School
Primary Subject: ES, BI, CO
Interest Level: EE, LE
Location: LC - 102
Looking for new ways to strengthen the science curriculum in your classroom? Why not look to the most notable science institution in the world? Join members from the 2014 and 2015 Smithsonian Science Education Academies for Teachers (SSEATS) as they share many of the amazing activities and FREE resources offered by the Smithsonian.

Talk Moves: Guiding Engaging Science Discussions
Richard Bacolor, Pierce Middle School
Primary Subject: GS
Interest Level: EE, LE, MS, HS
Location: R - Michigan 1
NGSS asks students to do the heavy lifting developing a deep understanding of science concepts. This session gives teachers a framework for facilitating small and whole group discussions that help students go beyond “learn about” science, and “figure out” science for themselves.

Teaching Evolution: A Conversation About Misconceptions and Models
Kara Haas, MSU - Kellogg Bird Sanctuary
Jamie Bowman, Thornapple Kellogg Schools
Primary Subject: BI
Interest Level: MS, HS
Location: LC - 204
Hands-on models and discussion tips for Teaching Evolution (TE). The TE project brought together students, mentor teachers and MSU faculty/educators to learn about evolution and methods to engage students in the classroom.

Thermochemistry and LOL Diagrams for All Levels
Peg Convery, Farmington High School
Primary Subject: CH
Interest Level: MS, HS
Location: R - Capital 2
Use modeling techniques to teach thermochemistry conceptually through the use of energy exchange diagrams, affectionately called LOL diagrams.

Tools for Helping Teach Meiosis
Arthur Wohlwill, Lansing Community College
Primary Subject: BI
Interest Level: HS, CO
Location: LC - Banquet 6
In order to help students understand meiosis I have developed several hands-on activities including a cooperative game that links genetics and meiosis.

Update on Credit-by-Exam at Michigan High Schools for University Physical Geology
Christina Sobolak, Steven Mattox, Grand Valley State University
Primary Subject: AS, ES
Interest Level: HS, CO
Location: R - Michigan 2
The number of students taking and passing the exam for college credit continues to grow. We share and discuss challenges, support, and opportunities for your students to succeed in geology.

Elementary Strand
Using Outstanding Science Trade Books
Conni Crittenden, Williamston Schools
Primary Subject: GS
Interest Level: EE, LE
Location: LC - 101
Connecting science with great trade books. List from the Children’s Book Council/NSTA Outstanding Science Trade Book Awards and activities to use with the books provided.

1:00 p.m. - 2:45 p.m. – Workshops

Asking Questions About Our Changing Climate: An Example Mi-STAR Unit
Stephanie Tubman, Michigan Tech University
Primary Subject: AS, GS
Interest Level: MS
Location: LC - Banquet 2
Mi-STAR is developing an integrated science curriculum for Michigan that aligns with NGSS. Participate in hands-on activities from a classroom-tested unit on climate change causes and mitigation. Handouts provided.

Session Key:
Primary Subject Levels:
AS – Assessment/Curriculum
CH – Chemistry
ES – Earth Science
GS – General Science
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CO – Computer/Technology
EN – Environmental Education
IN – Instruction/Pedagogy
PH – Physics
AST – Astronomy
Interest Levels:
EE – Early Elementary
LE – Late Elementary
MS – Middle Level
HS – High School
CO – College
SCECH Session
Vendor Session
Location:
R – Radisson
LC – Lansing Center

CANCELED
Session Descriptions

1:00 p.m. - 2:45 p.m. continued

Implementing Low Cost Engineering Projects for the MS/ HS Classroom

Yonee’ Bryant-Kuiphoff, Linden Grove Middle School
Chery Hach, Kalamazoo Area M/S Center

Primary Subject: GS, IN
Interest Level: MS, HS
Location: LC - 203

Are you experiencing anxiety with Engineering Practices? Let us help you discover low cost projects to take back to your classroom. Hands-on experience.

Lloyd’s Toolbox of Engineering Ideas & Activities

Lloyd Hilger, Jonesville Middle/High School
Judy Warner, Williams Elementary School

Primary Subject: GS
Interest Level: LE, MS, HS, CO
Location: LC - 104

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.

The Arts in ENGINEERING

Kimberlee Quinn, Miller Elementary School
Michael Quinn, Centerline Public Schools

Primary Subject: GS, IN
Interest Level: EE, LE, MS
Location: LC - 201

Come experience one the many authentic and engaging Engineering Design Challenges that can be created by YOU! Gain a new perspective on every day materials and how to integrate multiple content areas into a single challenge. This is sure to get your students thinking critically and creatively.

2:00 p.m. - 2:45 p.m. – Sessions

A Climate Change in Your Classroom!

Mary Ann DeVries

Primary Subject: IN
Interest Level: EE, LE, MS, HS
Location: LC - Banquet 8

Science Education is extremely important! To be successful, effective management is essential. Join this session and leave with tools that will create a positive climate change in your classroom!

Advancements in Science and Medicine - History of Laboratory Animal Use

Robert Sigler, Unit for Laboratory Animal Medicine

Primary Subject: BI
Interest Level: MS, HS
Location: LC - 202

Examples of scientific and medical advancements with emphasis on Michigan contributions. The history and role of lab animals in these discoveries and regulatory oversight of animal use will be discussed.

Amazing Productive Discussion in the Science Classroom

James DeHaan, De La Salle Collegiate
Don Pata, Grosse Pointe High School

Primary Subject: IN
Interest Level: EE, LE, MS, HS, CO
Location: LC - 162

Through an immersion in the techniques and strategies that maximize dialogue, teachers will learn the tools that help initiate and sustain productive student discussions in science classrooms.

Creating and Programming Apps at the Elementary Level

Maggie Thelen, Carly Pomarius, Michele Bates, Kat Humphreys, Rockford Public Schools

Primary Subject: CO
Interest Level: LE
Location: LC - 103

Though a STEM grant from the state of Michigan, all upper elementary students have an opportunity to learn how to create a mobile app. We will be using the MAD-Learn site and curriculum along with learning HTML to create the apps.

Daytime Astronomy

Sherry Claflin, Hesperia High School

Primary Subject: ES, AST
Interest Level: MS, HS
Location: LC - 205

You can teach Astronomy in the daytime! Find out how to use real data to meet your STEM objectives. Hands-on activities with hand outs and resources provided.

Elementary Strand

Integrating Science in Social Studies

Brian Peterson, Musson Elementary School

Primary Subject: GS
Interest Level: EE, LE
Location: LC - 101

We have all heard of Aristotle, Galileo, Edison, and Newton. But do you know how Alf Adams impacted the world of science every time you go shopping? In this session we will help integrate the world of science with your social studies lessons.
Session Descriptions

Minecraft in the Classroom: Incorporating Video Games into Core Instruction
Melissa Gosbee, Carson City Crystal Upper Elementary School
Primary Subject: GS, CO
Interest Level: LE, MS, HS
Location: R - Michigan 3

Video games are a passion of many students. Bring their passion into the classroom by exploring what Minecraft truly involves and how to use it across the science curriculum. Handouts provided.

Science Saturdays—Detroit Public Schools’ Monthly Hands-On Science PLCs
Kathryn Sergeant, Ronald Brown Academy
Deidre Davis, Detroit Public Schools
Primary Subject: AS, IN
Interest Level: EE
Location: LC - Banquet 4

Participate in a condensed version of Science Saturdays Workshops. District Teacher Leaders plan and facilitate grade level PLCs using hands-on activities for the current curriculum and science GLCEs. (Second Grade).

Speed-Reading and Other Time Saving Teaching Techniques
Laura Harris, Davenport University
Primary Subject: BI, IN
Interest Level: MS, HS, CO
Location: R - Regency 1

Instructors can more efficiently use their time if they could read and grade faster. This hands-on presentation with handouts teaches Evelyn Wood speed-reading techniques and ways to grade faster.

Using Authentic Environmental Research to Engage High School Biology Students
Lauri Davis, Houghton High School
Primary Subject: BI, EN
Interest Level: MS, HS
Location: LC - 204

Learn how you can engage your students in real-world, authentic environmental research. All you need is a few simple supplies, an outdoor area, and some students! Informational handouts provided.

Using Particle Diagrams to Increase Student Learning in Chemistry
Michelle Tindall, Birmingham Public Schools
Primary Subject: CH, IN
Interest Level: HS
Location: R - Capital 2

Drawing particle diagrams can be used in chemistry classes to promote discussions, explain laboratory observations, and assess student understanding. Examples of these particle diagram activities using whiteboards will be discussed.

MCSS Strand
What Does This Graphic Say? Learning From Graphs or Maps
Phil Gersmehl, Michigan Geographic Alliance
Primary Subject: EN, IN
Interest Level: LE, MS, HS
Location: LC – Banquet 7

Brain research identifies multiple parallel “pathways” for processing visual input. These underlie individual differences in “reading” visual aids. The optimum window for developing graph-reading skill is earlier than formerly thought.

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*What a Capital Idea!*
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- What a Capital Idea!
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What is the COLOR of Science? EXCITING!_28
What is the Michigan Mathematics and Science Centers Network?_9,43
What's YOUR Element?

Book a field trip with 100+ students and receive 10% OFF A TRAVELING SCIENCE PROGRAM!

Does not apply to Sciencepalooza. Field trip must be booked before 2/29/2016 and take place within the 2015-2016 school year.

www.Mi-Sci.org

The Michigan Science Center is a 501(c)(3) Nonprofit organization.
MTSA Region Directors

Region 1 Director - Donna Hertel
Portage Northern High School
1000 Idaho
Portage, MI 49024
dhertel@portageps.org

Region 2 Director - Rachel Badanowski
47818 West Huron River Dr.
Belleville, MI 48111
ae5379@wayne.edu

Region 3 Director - Derek Sale
12930 Brixham
Warren, MI 48088
derek_sale@yahoo.com

Region 4 Director - Susan Tate
5122 Lakeview Street
Montague, MI 49437
susantate@whitehallschools.net

Region 5 Director - Conni Crittenden
603 Ardson Road
East Lansing, MI 48823
crittec@gmail.com

Region 6 Director - Brian Peterson
200 River Place, Unit 35
Detroit, MI 48207
bpetersen@rochester.k12.mi.us

Region 7 Director - Pete Peterson
4645 Seymour Road
New Era, MI 49446
mr.science_guy@yahoo.com

Region 8 Director - David Brown
Bullock Creek Middle School
644 S. Badour Road
Midland, MI 48640
brownd@bcreek.org

Region 9 Director - Jennifer Richmond
5772 Wildcat Road
Crosewell, MI 48422
jlrichmond@gmail.com

Region 10 Director - Carolyn Mammen
10878 Woodview Ter
Traverse City, MI 49686
cmammen@charter.net

Region 11 Director
Position currently vacant

Region 12 Director - Jackie Huntoon
MI Technological University
503 A. Admin. Bldg., 1400 Townsend Drive
Houghton, MI 49931
jeh@mtu.edu

Region 13 Director - Carolyn Lowe
530 Old Co. Road 553
Gwinn, MI 49841
clowe@nmu.edu

Region 14 Director - Lynn Thomas
8949 Stagecoach Q.S Ave.
Gladstone, MI 49837
lynnthomas@eskymos.com
# Award Winners

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

## 2013
- **Elementary Science Teacher of the Year**: Diane Krzyaniak
- **Middle School Science Teacher of the Year**: Monica Harvey
- **High School Science Teacher of the Year**: Erika Fature
- **College Science Teacher of the Year**: Dr. James McDonald
- **Informal Science Educator**: Gerald Pahl
- **Distinguished Service Award**: Roberta Cramer
- **Dan Wolz Clean Water Education Grant**: Dave Chapman

## 2014
- **Elementary Science Teacher of the Year**: Julee Cowher
- **Middle School Science Teacher of the Year**: Mark Koschmann
- **High School Science Teacher of the Year**: Richard Eberly
- **College Science Teacher of the Year**: Dr. Mary Brown
- **Informal Science Educator**: Paula Gangopadhyay
- **Distinguished Service Award**: David McCloy
- **Distinguished Service Award**: Mike Klein
- **The George G. Mallinson Award**: Joseph Krajcik
- **Dan Wolz Clean Water Education Grant**: Donald Hammond/Tammy Coleman

## 2015
- **Teacher of Promise**: Ashley Meyer
- **Elementary Science Teacher of the Year**: Patricia McNinch
- **Middle School Science Teacher of the Year**: Holly McGoran
- **High School Science Teacher of the Year**: Deanna Cullens
- **College Science Teacher of the Year**: Dr. Bradley Ambrose
- **Administrator of the Year**: Greg Johnson
- **Informal Science Educator**: Stephen Stewart
- **Distinguished Service Award**: Betty Crowder
- **The George G. Mallinson Award**: David Bydlowski
- **Dan Wolz Clean Water Education Grant**: John Travis/Josh Nichols

## 2016
- **Teacher of Promise**: Dakota Bahlau
- **Teacher of Promise**: Paula Gentile
- **Elementary Science Teacher of the Year**: Sherri Hane
- **Middle School Science Teacher of the Year**: Colleen Polydoras
- **High School Science Teacher of the Year**: Joshua Barclay
- **College Science Teacher of the Year**: Dr. Mark Francek
- **Informal Science Educator**: Janet Vail
- **MSTA Special Award**: Stephen Best
- **Distinguished Service Award**: Cheryl Hach
What a Capital Idea!

TT 45 — AWWA/MWEA – Youth Education Committee
PO Box 397
Bath, MI  48808
AAWA and MWEA members are dedicated to improving, preserving, restoring, and enhancing Michigan’s water and water supply as well as educating others to do the same.

211 — The Arts in Engineering - 2 Perspectives
3946 N. Shore Drive NE
Kalkaska, MI  49646
313-590-4000
The Arts in Engineering brings an accessible and affordable set of constructs and processes to the K-5 and 6-8 classrooms with aligned and integrated instructional practices.

111 – miniPCR
1770 Massachusetts Ave., Suite 167
Cambridge, MA  02140
888-317-0512
The miniPCR DNA Discovery SystemTM, is the complete bitechology lab for K-College educators. miniPCR machine, blueGelTM electrophoresis, and a micropipette all for under $1,000. Engage students in real-world hands-on inquiry with DNA!

105 — Activate Learning
134 6th Ave.
LaGrange, IL   60525
708-205-5691
Activate Learning offers the best inquiry-based/3-deminsional learning curriculum programs for K-8. Active Science and IQWST motivates students to learn while building literacy skills coherently and adhering to all 8 NGSS scientific practices.

123 — Ann Arbor Hands-On Museum
220 East Ann Street
Ann Arbor, MI   48104
734-995-5439
Ann Arbor Hands-On Museum delivers educational programs to students at the museum, at your site, and virtually. All programs align with Michigan Science GLCEs, NGSS, and Common Core.

208, 210 — Arbor Scientific
PO Box 2750
Ann Arbor, MI  48106
734-477-9370
For nearly 30 years, Arbor Scientific has worked with teachers to develop educational science supplies, instruments, and lab equipment that makes learning fun for students.
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<th>TT 8 — Arts &amp; Scraps: Education Reimagined</th>
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<tr>
<td>16135 Harper</td>
</tr>
<tr>
<td>Detroit, MI 48224</td>
</tr>
<tr>
<td>313-640-441</td>
</tr>
<tr>
<td>Arts &amp; Scraps, a Detroit, nonprofit, makes classroom packs from recycled industrial materials. Students THINK about topics and BUILD their ideas to solve challenges.</td>
</tr>
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<tr>
<th>TT 7 — Battle Creek Area Mathematics &amp; Science Center</th>
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<tr>
<td>171 W. Michigan Ave.</td>
</tr>
<tr>
<td>Battle Creek, MI 49017</td>
</tr>
<tr>
<td>269-213-3905</td>
</tr>
<tr>
<td>BCAMSC/Cereal City Science program, provides science units for K-MS. The program is aligning with NGSS (MSS) with focus on science and engineering.</td>
</tr>
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<th>TT 25 — Battle Creek Outdoor Education Center - Clear Lake Camp</th>
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<tr>
<td>10160 South M 37 Hwy</td>
</tr>
<tr>
<td>Dowling, MI 49050</td>
</tr>
<tr>
<td>269-721-8161</td>
</tr>
<tr>
<td>Battle Creek Outdoor Education Center provides both residential and day programs for schools across the state.</td>
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<th>TT 47 — Bay Sail Appledore Tallships</th>
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<tr>
<td>107 Fifth Street</td>
</tr>
<tr>
<td>Bay City, MI 48708</td>
</tr>
<tr>
<td>989-895-5193</td>
</tr>
<tr>
<td>BaySail delivers a hands-on, STEM-based environmental education program called &quot;Science Under Sail&quot;, aboard the Schooners Appledore IV &amp; Appledore V.</td>
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<th>TT 17 — Camp Invention - Invent Now</th>
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<tr>
<td>3701 Highland Park NW</td>
</tr>
<tr>
<td>North Canton, OH 44720</td>
</tr>
<tr>
<td>330-849-6969</td>
</tr>
<tr>
<td>Camp Invention is the only nationally recognized, nonprofit elementary enrichment program backed by the National Inventors Hall of Fame.</td>
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<th>TT 19 — Carbon TIME (Transformations In Matter &amp; Energy)</th>
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<tr>
<td>620 Farm Lane - 244 Erickson Hall</td>
</tr>
<tr>
<td>East Lansing, MI 48824</td>
</tr>
<tr>
<td>517-432-9620</td>
</tr>
<tr>
<td>Carbon TIME (Transformations In Matter &amp; Energy) is a program providing MS/HS curricular units, coordinated teacher professional development, and teacher networks, from Michigan State University.</td>
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<th>224, 226 — Carolina Biological Supply Company</th>
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<tr>
<td>2700 York Road</td>
</tr>
<tr>
<td>Burlington, NC 27215</td>
</tr>
<tr>
<td>800-227-1150 x5262</td>
</tr>
<tr>
<td>For 80+ years Carolina has been a family owned company founded by Dr. Powell, a devoted science professor at Elon University in North Carolina who recognized that students learn best by “doing”. Over 25 years ago, Carolina entered into a partnership with the Smithsonian Science Education Center to create and publish instructional units that have been integrated into school district curriculum documents to provide “active learning and instruction” in science and STEM education. The result has demonstrated statistically significant advancements in student achievement that show improvements in diverse populations including female, urban, rural, and ELL students across the nation.</td>
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<th>201, 203 — Benz Microscope Optics Center, Inc.</th>
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<td>3980 Varsity Drive</td>
</tr>
<tr>
<td>Ann Arbor, MI 48108</td>
</tr>
<tr>
<td>734-994-3880</td>
</tr>
<tr>
<td>Sale and service for microscopes and science supplies.</td>
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<th>207 — Bio-Rad Laboratories</th>
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<tr>
<td>6000 James Watson Drive</td>
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<tr>
<td>Hercules, CA 94547</td>
</tr>
<tr>
<td>Bio-Rad provides high quality, real world, hands-on life science products and customizable professional development.</td>
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<th>306 — BitWixt Software Systems</th>
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<td>PO Box 1144</td>
</tr>
<tr>
<td>Minnetonka, MN 55345</td>
</tr>
<tr>
<td>612-387-5787</td>
</tr>
<tr>
<td>Bitwixt develops AtomsmithR interactive, 3D chemistry software and supporting curriculum. Atomsmith models help students to “see” the otherwise useable world of atoms and molecules and to connect the three levels of chemistry: particulate (sub-microscopic), symbolic, and macroscopic.</td>
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<tr>
<td>2400 Weiss Street</td>
</tr>
<tr>
<td>Saginaw, MI 48602</td>
</tr>
<tr>
<td>989-791-5960</td>
</tr>
<tr>
<td>Consumers Energy is committed to educating Michigan students about energy safety.</td>
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<th>305 — Drug &amp; Laboratory Disposal, Inc.</th>
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<tbody>
<tr>
<td>331 Broad Street</td>
</tr>
<tr>
<td>Plainwell, MI 49080</td>
</tr>
<tr>
<td>269-685-9824</td>
</tr>
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Exhibitor Information

**TT 42 — EcoWorks Youth Energy Squad (YES)**
4835 Michigan Ave.
Detroit, MI 48210
313-815-3609
The Youth Energy Squad (YES), grows the next generation of green leaders in hands-on education and science learning projects that make schools, homes, and communities more environmentally sustainable.

**TT 43 — GLS Institute of Food Technologists**
7575 Fulton Road
Ada, MI 49335
616-787-5350
IFT is an international professional association compiled of chemists, microbiologists, nutritionist, engineers, and food scientist dedicated to providing safe and nutritious food to the world.

**TT 30 — XploreLearning**
110 Avon Street, Suite 330
Charlottesville, VA 22902
ExploreLearning develops online solutions to improve learning in math and science including: Gizmos - online simulations for grades 3-12; and Reflex - a math fact fluency solution.

**TT 309, 311 — Flinn Scientific, Inc.**
PO Box 219
Batavia, IL 60510
630-879-6900
Flinn Scientific is the leader of Science and laboratory chemical safety, offering a full line of chemistry, biology, physics, life science, earth science, physical science, and safety products.

**TT 40 — Food & Drug Administration - Detroit District**
300 River Place, Suite 5900
Detroit, MI 48207
313-393-8196
FDA's responsible for protecting the public health by assuring the safety, efficiency, and security of human and veterinary drugs, food, medical devices, biological products, cosmetics, and products that emit radiation.

**TT 41 — It’s About Time Publishers**
333 North Bedford Road
Mt. Kisco, NY 10549
It’s About Time is the global leader in research-based Science, Technology, Engineering, and Mathematics (STEM) curricula for 5 - 12 and college students. Modeled on the way practicing scientists, engineers and mathematicians work, the IT’S ABOUT TIME project-driven STEM solutions give educators tools to create a meaningful and joyful learning environment that deepens student engagement and problem-solving skills.

**TT 44 — Kellogg Biological Station – MSU**
3700 East Gull Lake Drive
Hickory Corners, MI 49060
Kellogg Biological Station is Michigan State University’s largest off-campus sites. Scientist with local teachers, share today's science- ecology, climate change, evolution, and sustainable agriculture.

**TT 29 — Lawrence Technological University**
21000 West 10 Mile Road
Southfield, MI 48075
248-204-3160
Lawrence Technological University offers over 80 academic programs through colleges of Architecture and Design, Arts and Science, Engineering and Management.

**Lab-Aids Inc.**
Location: LC - Banquet Room 5
1487 Gerrard Ave.
Columbus, OH 43212
Lab-AIDS, a catalyst for learning. Our focus is hands-on, research-based, and field-tested programs that build a strong and lasting foundation of knowledge allowing students to take ownership of their learning while supporting teachers in every possible way.

**TT 18 — Inland Seas Education Association**
PO Box 218
Suttons Bay, MI 49682
231-271-3077
Inland Sea is a nonprofit organization dedicated to helping people of all ages experience the Great Lakes through hands-on, experiential learning activities aboard a tall ship Schooner.

**TT 400, 402 — LEGO® Education**
20355 Danbury Lane
Harper Woods, MI 48225
313-647-0043
LEGO Education combines the unique excitement of LEGO bricks with hands-on classroom solutions.
Exhibitor Information

**TT 4 — Michigan Alliance of Environmental & Outdoor Education - MAEOE**
PO Box 271
Birmingham, MI  48009
248-646-6142
The Michigan Alliance for Environmental and Outdoor Education’s (MAEOE) goal is to promote environmental literacy through education and give educators and the public a knowledge of ecological awareness and sustainability.

**TT 11 — Michigan Department of Environmental Quality**
525 West Allegan Street
Lansing, MI  48933
517-284-6867
To promote wise management of Michigan’s air, land, and water resources. To support a sustainable environment, healthy communities, and a vibrant economy.

**TT 2, TT 3 — MI Dept. of Natural Resources**
530 West Allegan - DNR Mason Bldg.
Lansing, MI  48933
517-373-7306
The Michigan Department of Natural Resources (DNR) offers materials and opportunities for Michigan education and students K-12.

**TT 20 — Michigan Agriculture in the Classroom - MI Farm Bureau**
7373 W. Saginaw Hwy.
Lansing, MI  48909
517-323-7000 x3213
Michigan Ag in the classroom provides agriculture-themed lessons for teachers and students across all grade levels and subject areas.

**TT 5 – Great Lakes Renewable Energy**
PO Box 534
Rockford, MI  49341
616-813-2384
501(c)3 with mission to educate, advocate, and promote Renewable Energy. Website has details on heating up STEM solar cooking contest. glrea.org

**TT 28 — MI Antibiotic Resistance Reduction (MARR) Coalition**
6152 E. Longview Drive
East Lansing, MI  48823
The MARR Coalition seeks to improve antibiotic stewardship through education about the appropriate use of antibiotics and reduce antimicrobial resistance rates in communities throughout Michigan, nationally, and internationally.

**TT 24 — Michigan Sea Grant**
520 E. Liberty St., Suite 310
Ann Arbor, MI  48104
734-647-0767
Michigan Sea Grant supports research, education, and outreach efforts designed to foster science-based decisions about the use and conservation of Great Lakes resources.

**TT 30 — Metropolitan Detroit Science Teachers Association**
21610 Kenosha Street
Oak Park, MI  48237

**TT 21 — Michigan Science Center**
5020 John R Street
Detroit, MI  48202
313-577-8400

**TT 46 — Michigan eLibrary/Library of Michigan**
702 West Kalamazoo
Lansing, MI  48915
The Michigan eLibrary (MeL.org) is our state’s digital library providing access to amazing set of FREE resources for teacher, students, and all Michigan residents!

**TT 121 — MEEMIC Insurance Company**
1685 N. Opdyke Road
Auburn Hills, MI  48326
248-373-5700 x31669
MEEMIC exclusively supports the educational community with auto, home, boat, and umbrella insurance products through MEEMIC Insurance Company and grant opportunities through the MEEMIC foundation.

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**TT 11 — Michigan Department of Environmental Quality**
525 West Allegan Street
Lansing, MI  48933
517-284-6867
To promote wise management of Michigan’s air, land, and water resources. To support a sustainable environment, healthy communities, and a vibrant economy.
Michigan Tech offers a master's degree in Applied Science Education and summer professional development courses for science and mathematics teachers.

TRACKS magazine focuses on Michigan animals and is a great way to introduce students to science. It's filled with facts, posters, and wildlife information.

Nancy Larson Science provides a complete hands-on elementary science curriculum that integrates science and literacy and is easy for teachers to use.

Nasco specializes in elementary and secondary science materials, kits, live and preserved biologicals, and lab equipment. We focus on quality products and budget-sensitive prices. Please visit us at www.eNasco.com or call 800-558-9595.

National Energy Foundation is a non-profit educational organization dedicated to energy efficiency and resource conservation outreach. We provide programs sponsored by utility companies in Michigan.

PETA is the largest animal rights organization in the world, with more than 3 million members and supporters.

Potter Park Zoo is an escape to nature in the heart of Michigan’s capital city. Open year round and home to over 500 animals!

Embark on a journey through Natural Wonders, exploring natural science and history. Learn to live in harmony with the earth and its diverse ecosystems!
Exhibitor Information

209 — Scholastic Library Publishing
35460 Heritage Lane
Farmington, MI  48335
248-474-6527
Scholastic Library Publishing is a publisher of science nonfiction, digital resources for K-12, including Science FLIY, True FLIY, and Grollier on-line.

TT 38, TT 39 — Square One Education Network
670 Hillcliff Drive
Waterford, MI  48328
248-736-7537
The Square One Education Network is a nonprofit educational organization. Our purpose is to create and fund powerful, relevant experiences for K-12 teachers and students that creatively integrate science, technology, engineering and mathematics (STEM) using best practices supported instruction through unique project designs.

300, 302 — Teachers’ Curriculum Institute - TCI
2440 W El Camino -Suite 400
Mountain View, CA  94040
800-497-6138
TCI is a K-12 publishing company created by teachers, for teachers. We believe the best teaching marries great content, meaningful technology, and classroom experiences.

TT 1 — Teachers2Teachers International
1920 S. Lakeshore Drive
Chapel Hill, NC  27514
919-619-5723
Teachers2Teachers International is a 501(c)(3) organization that provides culturally sensitive professional development for teachers worldwide.

TT 9 — The Air Zoo
6151 Portage Road
Portage, MI  49002
269-382-6555
The Air Zoo is one of the nation’s premiere hands-on, indoor aerospace and science education centers.

318 — The INQUISITIVE PIONEER
7430 Plainfield
Dearborn Heights, MI  48127
313-561-5261
The INQUISITIVE PIONEER by Bryan Purcell - the book series of at-home basic-material science activities focused on Data Analysis solving with a slide rule.

TT 12 — The Mallinson Institute for Science Education
193 W. Michigan Ave.
Kalamazoo, MI  49008
269-387-5398
Complete your MA in Science Education online with nationally recognized faculty.  www.wmich.edu/science

204 — The MarkerBoard People
1611 North Grand River
Lansing, MI  48906
800-379-3727
Dry Erase Boards, marker, erasers and accessories. Perfect for Science, Graphing and MORE!!!

TT 27 — Van Andel Education Institute
333 Bostwick Ave. NE
Grand Rapids, MI  48838
616-234-5484
NexGen Inquiry is web-based instructional software for teachers to engage students in science and engineering practices to support the implementation of Michigan Science Standards.

119 — Vernier Software & Technology
13979 SW Millikan Way
Beaverton, OR  97005
503-277-2299
Vernier creates easy-to-use and affordable science interfaces, sensors, and graphing/analysis software. Vernier's technology-based solutions enhance STEM education, increase learning, and build students’ critical thinking skills.

125, 127 — Wayne State University - College of Education - College of Liberal Arts & Sciences
4841 Cass Ave.
Detroit, MI  48201
313-577-9563
Wayne State University - The College of Liberal Arts and Sciences, and the College of Education, will advertise their programs for K-12 science teachers and school administrators.

TT 10 — YMCA Hayo-Went-Ha Camps
919 N. East Torch Lake Drive
Central Lake, MI  49622
231-709-0865
YMCA Hayo-Went-Ha Camps offers experiential environmental education programs to students of all ages. Nestled among the beauty of Northern Michigan.
Radisson Hotel Map

Lansing Center Map
School Field Trips and Overnight Camps
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- Skits, Gaga Ball, and Other Traditional Camp Activities
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1005 Triangle Lake Road, Howell, MI 48843 (517) 546-0249 howellnaturecenter.org

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- Urban Education
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- Additional endorsement to teaching certificates.
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There’s unrivaled opportunity in the heart of Detroit, a city whose history, culture and economic resurgence make it one of the most fascinating places in the world. Join us at Wayne State University and take part in the reinvention of a great American city.

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