



Join us for our Annual Conference
"What A Capital Idea"
March 3-5, 2016 at the Lansing Center
and Radisson Hotel, Lansing, MI



2016 Session Information

Friday, March 4, 2016

UPDATED 2-17-16

8:00 a.m. - 8:45 a.m. Sessions

SCECH Session

Michigan Mathematics/Science Centers Network Strand

Be Part of the Change: Developing Michigan Leadership in Science Education

Mary Starr, Executive Director, Michigan Mathematics & Science Center Network

Primary Subject: AS

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

Location: LC - 101

Michigan Science Education Leadership is a critical component of implementing changes in science teaching. Learn about each organization and how you can become part of the work!

SCECH Session

Educators Guide to Bloodstain Pattern Analysis: Real World Science!

Kathy Mirakovits, Portage Northern High School

Primary Subject: GS, PH

Interest Level: HS, CO

Location: LC - Banquet 2 & 4

Entice and engage students to use science and problem solve! Blood spatter analysis is a student favorite and it uses projectile motion concepts and mathematics - a win-win! Hands on activity!

SCECH Session

FREE teacher/student STEM labs and Career Exploration Labs

Robert Tonti, Macomb Community College

Primary Subject: IN, IS

Interest Level: MS

Location: R - Michigan 2

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.



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SCECH Session

How to Write a Scientific Paper

Ruthann Thorne, MI Society for Medical Research

Primary Subject: GS

Interest Level: HS

Location: R - Regency 1

I will explain the essay contest that our organization holds every year for ALL Michigan High School Students "Why Animals are Important in Biomedical Research" and walk teachers through a step by step process on writing the paper and gathering research!

Lessons Learned from a Decade of Extra-Curricular Partnerships

Ernest Delemeester, Jen Countegan, New Lothrop High School

Primary Subject: GS

Interest Level: MS, HS

Location: R - Regency 2

Teachers attending this session will gain familiarity with the value obtained by developing a wide variety of extra-curricular partnerships with both private and public agencies at local, state, and federal levels. The presentation will describe tips for initiating partnerships and the impact of these partnerships on students, the school district, and teaching philosophy.

SCECH Session

Making Grades More Meaningful

Brian Langley, Novi High School

Primary Subject: AS

Interest Level: MS, HS

Location: LC - 104

Participants will learn about one teacher's quest for more meaningful grading practices, gaining assessment strategies that can be immediately implemented in the classroom. This session is perfect for those eager for field-tested alternatives to common grading procedures.



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MSELA Strand

MSELA Spring Business Meeting

Jennifer Gottlieb, Troy School District

Sarah Coleman, Muskegon Area ISD

Primary Subject: AS

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

Location: LC - 102

Join the executive board in reviewing our work for 2015/2016 during our MSELA Annual Business Meeting.

SCECH Session

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

Rochelle Rubin

Joe Austin, Waterford School District

Primary Subject: AS, LT, IN

Interest Level: EE

Location: R - Capital 2

Oakland Schools ISD has revised its free K-3 science units to reflect the NRC Framework framework. As a bridge to the future, these new versions incorporate Three Dimensional Learning; embed NGSS Science and Engineering Practices, Crosscutting Concepts, Engineering Design and CCSS Writing while remaining targeted to the content of Michigan's science GLCEs and assessments. Sample products and curriculum adaptation strategies will be shared during this session.

SCECH Session

What Is the COLOR of Science? EXCITING!

David Mastie

Primary Subject: ES, GS

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

Location: R - Capital 4

How can we capture the imagination and curiosity of your students to hook them on science? See colorful and engaging hands-on activities that offer science excitement while delivering essential content.



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SCECH Session

Vendor Session

Why Not Salmon in Your Classroom - Part 1

Kevin Frailey, MI Dept. of Natural Resources

Primary Subject: BI, EN

Interest Level: LE, MS, HS

Location: LC - Governors

Nearly 200 Michigan schools are raising Chinook Salmon in the classroom and teaching across the curriculum. Michigan DNR staff will highlight the advantages and excitement that more than 15,000 students share as they raise, monitor, and release a live Michigan resource throughout the school year. This session will detail the demands of the program and how to apply for the fall of 2016. Don't miss Part Two where you will learn how to add a STEM engineering component to this popular program.

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

SCECH Session

Vendor Session

Cool Tools for Force and Motion

Donald Pata, Arbor Scientific

Primary Subject: PH

Interest Level: MS, HS, CO

Location: LC - 205

You'll be moved by these engaging demos presented by award-winning Teacher Don Pata. These classroom-ready activities include: the Monkey-Hunter, the vertical vs. horizontal acceleration demonstration, and the Human Dynamics Cart.



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CREATE for STEM Institute Strand

Healthy Choices: Using PBL and NGSS to Explore Gene-Environment Interactions

Jane Lee, Michigan State University

Deborah Peek-Brown, Renee Bayer, CREATE for STEM Institute

Primary Subject: BI, IN

Interest Level: MS

Location: LC - Banquet 7

Experience a project-based science curriculum that uses scientific practices, crosscutting concepts and core ideas to explain genetic and environmental factors that impact diabetes and the importance of healthy lifestyle choices.

How Can Methods Classes Engage Pre-Service Science Teachers with NGSS?

R. Charles Dershimer, U of M - School of Education

Primary Subject: IN

Interest Level: CO

Location: LC - Banquet 6

Science methods instructors are invited to a university panel (EMU, MSU, OU, U-M and WSU) that will present ideas for engaging pre-service teachers with the Next Generation Science Standards.

SCECH Session

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: R - Capital 1

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



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Paper Mache Anatomy

Kerry Williams, Renaissance High School

Primary Subject: BI

Interest Level: MS, HS

Location: LC - 204

Come explore the modeling component of Next Generation of Science Standards (NGSS) through paper mache. We will each build a paper mache skull while discussing applications in anatomy and biology courses.

Using History to Integrate Nature of Science in the Classroom

Laura Tinigin

Peggy McNeal, Western Michigan University

Primary Subject: GS

Interest Level: LE, MS, HS

Location: R - Capital 3

In this interactive workshop, you will practice how to excite students with stories about scientists through history. You will receive a booklet of vignettes illustrating how the human endeavor propels discovery.

Wading into Ecology; Using Aquatic Invertebrates to Explore Stream Ecosystems

Keith Piccard, Allendale PS/Grand Valley State University

Peter Riemersma, GVSU - Geology Department

Stephen Rybczynski, GVSU – Biology Department

Primary Subject: BI, EN

Interest Level: MS, HS

Location: LC - 201

The mysterious world of stream macroinvertebrates is going to be brought to the classroom. Participants will identify and classify living organisms such as "shredders" and "scrappers" to show the interactions between these invertebrates and their stream habitat. We outline our 5E learning cycle approach to implement this award winning project a transformative NGSS ready application of the scientific method, as students ask meaningful questions, and collect, interpret and contribute real data.



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SCECH Session

MEECS Ecosystems and Biodiversity

Jessica Wagenmaker, Holton Middle School

Primary Subject: AS, EN

Interest Level: LE, MS

Location: LC - 103

This unit provides students with a better understanding of ecosystems by examining how organisms interact within their environment. An additional set of materials explores concepts related to biodiversity.

9:00 a.m. - 9:45 a.m. – Sessions

SCECH Session

Engaging Students and the Next Generation Science Standards through Recyclable 3-D Printing

Richard Eberly, New Buffalo High School

Primary Subject: GS, CO

Interest Level: MS, HS, CO

Location: R - Regency 2

Grant funded, student built, open source 3-D printing is an ideal approach for experiencing the Next Generation Science Standards and developing student peer scientists.

SCECH Session

Michigan Mathematics/Science Centers Network Strand

Increasing Science Discourse in Your Classroom

Sarah Coleman, Muskegon Regional M/S Center

Primary Subject: AS

Interest Level: EE, LE, MS

Location: LC - 101

Integrating ELA and Science can happen through science talks. Learn about and practice using science talk tools to increase discourse and align your science teaching with your ELA goals.



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SCECH Session

Meet the Biofuel Crops of the Future!

Joyce Parker, Jane Rice, Michigan State University

Primary Subject: BI, EN

Interest Level: MS, HS, CO

Location: R - Capital 4

Come interact with the biofuel crops of the future. Learn how they end up in your gas tank and how current research on them reflects multiple NGSS standards.

SCECH Session

Modeling, Explanations and Argument in Middle School Science

Debra Wilson, Grand Blanc Schools

Primary Subject: AS, GS

Interest Level: MS

Location: LC - 104

We will share our experience with work on modeling, constructing explanations and argument in the middle school classroom. We'll share what we have learned so far and how we have used these lessons. Handouts provided.

SCECH Session

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.



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SCECH Session

Vendor Session

Observe, Investigate and Enjoy: New Conservation Education Toolkit

Natalie Elkins, MI Department of Natural Resources

Primary Subject: EN

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

Location: LC - Governors

Take a tour through fun, relevant, life science, hands-on lessons, targeted for upper el through high school. These FREE online guides were developed through the Association of Fish and Wildlife Agencies as part of their Conservation Education Toolkit. These online guides give teachers tools they have asked for to illustrate to students real life applications of field investigations, observation skills, systems thinking and how to determine biodiversity--all using problem-based learning.

Vendor Session

Project-Based Inquiry Science

Carrie Anne Sherwood, It's About Time

Primary Subject: GS

Interest Level: MS

Location: R - Regency 1

Exemplifying the blending of science and engineering practices, core ideas, and cross-cutting concepts to support student learning.

Vendor Session

SCECH Session

Put Your Simpel Machine to Work to Better Learn STEM Concepts Using LEGO^R

Ivery Toussant, LEGO Education

Primary Subject: GS

Interest Level: EE, LE, MS, HS

Location: LC – 101

This hands-on solution allow students to predict, test, observe, measure, record, and present their findings. In this way, they work as young scientist, engineers, and designers, making their own discoveries along the way. Even the least science oriented educators will feel secure teaching these standards and concepts with LEGO^R.



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SCECH Session

Reconsidering the Scientific Method: Teaching the Connections between Science and Society

Prasad Venugopal, Mark Benvenuto, University of Detroit Mercy

Primary Subject: IN

Interest Level: HS

Location: R - Michigan 2

This session will present results from student responses in two introductory college science classes when a discussion of socio-political history was integrated with case studies of scientific discovery using the Scientific Method.

Vendor Session

Repressive Gene Expressions: Turning Students to Stone!

Bill Cline, LAB-AIDS

Primary Subject: BI

Interest Level: HS

Location: LC - Banquet 5

Students have trouble conceptualizing how gene expression works. We'll use manipulatives to model this concept and relate its connection to genetic engineering. During this activity we will model the programs philosophy, notebooking and discussion strategies that support the new teach/student talk ratios. Innovative activities are selected from the new Science and Global Issues: Biology program from SEPUP and LAB-AIDS.

SCECH Session

Save the Egg! A Physics and Chemistry Integrated Engineering Project.

Kathy Mirakovits, Michelle Mason, Portage Northern High School

Primary Subject: CH, PH

Interest Level: HS

Location: LC - Banquet 2 \$ 4

Physics and chemistry students unite with the common goal to save the egg from certain peril! Join us as we present our integrated project, inspired by the NGSS and the science and engineering practices, and discuss its results.



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Vendor Session

Science Fusion

Tristan Fuerbacher, Houghton Mifflin Harcourt

Primary Subject: IS

Interest Level: LE

Location: LC - 203

Inquiry activities with handouts.

STEM in Forensics

Rachel Badanowski

Primary Subject: GS

Interest Level: LE, MS, HS

Location: LC - Banquet 8

Hands-on activities will mesh STEM and forensic science in an engaging, problem solving fashion. Handouts will be provided.

MSELA Strand

Supporting Science for the Progressive Administrator

Jennifer Gottlieb, Troy Public Schools

Sarah Coleman, Muskegon Area ISD

Primary Subject: AS

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

Location: LC - 102

Strong sustained commitment and strategic support from building and district leadership will be necessary in order to realize the vision of the new standards. Now is the time to shift instructional practice and for leaders to remove barriers to change by transforming current systems.



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SCECH Session

You Want To Do WHAT with Middle School Students Below a Super Fund Site?

Todd Starry, St. Louis Public Schools

Primary Subject: EN

Interest Level: MS

Location: R - Michigan 1

With a STEM grant from Alma College, funded by The Dow Foundation, I attended Alma College for six weeks of water quality training with one of my students.

Friday, March 4, 2016

9:00 a.m. - 10:45 a.m. – Workshops

SCECH Session

Vendor Session

Bring Science Alive! Discovering the Science Practices

Matt Moorman, TCI

Primary Subject: GS

Interest Level: EE, LE

Location: LC - 202

In this hands-on session, participants experience the NGSS Science Practices from a student's perspective through TCI's Bring Science Alive! Participants will experience a lesson built from the ground up to meet NGSS.

SCECH Session

Vendor Session

Cool Tools for Light & Color

Dale Freeland, Arbor Scientific

Primary Subject: PH

Interest Level: LE, MS, HS, CO

Location: R - Michigan 3

Mix primary colors to cast shadows in cyan and magenta, why it's perfectly acceptable to eat a black strawberry, compare yellow light from a lemon peel to yellow screen light.



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SCECH Session

Environmental Issues, PSAs, iPads, & NGSS!

Barbara Pepper, Ann Cole, Derby Middle School

Amy Cole, Derby Elementary School

Primary Subject: EN

Interest Level: LE, MS

Location: R - Michigan 1

Research! Create! Collaborate! Connect NGSS cross-cutting concepts with environmental issues. Preview samples, learn to create trailers. Bring a device with iMovie. Some iPads will be available to borrow. Handouts provided.

SCECH Session

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 - 205

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.

SCECH Session

Hands-on, Minds-on Science

Jennifer Billington, Jodie Lugar-McManus, Parchment High School

Primary Subject: AS, BI

Interest Level: MS, HS

Location: LC - 201

Modeling of different concepts and activities in biology will be demonstrated. The minds on part will be focused on bioethics. Real world topics in the classroom! Handouts and rubrics provided!



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I Quit Grading Homework (and Lived to Tell About It)

Alaina Sharp, Western High School

Primary Subject: IN

Interest Level: MS, HS

Location: R - Michigan 2

Do you sometimes feel like a "grade" doesn't really mean what it should? Learn how a modified form of standards-based grading revolutionized my teaching and saved my mental health.

Handouts provided.

Integrating Soil Ecology Into Your Classroom

Ashley Carroll, Gull Lake Middle School

Primary Subject: GS

Interest Level: MS, HS

Location: R - Regency 2

In this session, participants will learn how to utilize inquiry in the classroom when studying soil ecology. The presenter will share about her research experience for teachers (RET) at MSU's Kellogg Biological Station. Participants will engage in hands on activities and leave with handouts they may use in their classroom.

SCECH Session

Vendor Session

Invasive Monsters of the Deep

Kevin Frailey, Tori Frailey, MI Dept. of Natural Resources

Primary Subject: BI, EN

Interest Level: LE, MS, HS, CO

Location: LC - Governors

Long before there was an interest in the walking dead, Michigan was fending off an invasion of live, swimming, flesh-eating monsters, and still is. Come see one of the captured monsters and learn how it changed the Great Lakes ecosystem forever. Invasive species are one of the greatest threats to our state and need to be included in your science curriculum. There is no better critter to stir interest in invasive species than Michigan's Monster of the Deep, the sea lamprey.



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SCECH Session

NGSS (Michigan Science Standards) in the K-2 Classroom

Debra Wilson, Grand Blanc Schools

Primary Subject: AS, GS

Interest Level: EE, LE

Location: LC - 104

We will share our experiences exploring and implementing 3-dimensional learning and NGSS in the K-2 classroom. Lesson ideas, what worked, what didn't will be shared. Handouts will be available.

SCECH Session

NGSS Human Impacts - Water, energy, food and climate change

Jane Rice, Michigan State University

Primary Subject: ES, BI, EN

Interest Level: MS, HS

Location: R - Capital 4

Be an active participant in planning NGSS-aligned professional development and instructional materials for teaching current issues such as sustainable agriculture and energy, food and water quality, and climate change.

SCECH Session

Michigan Mathematics/Science Centers Network Strand

NSTA Learning Center as Part of Professional Learning Communities

Melissa Hayes, COOR ISD

Primary Subject: AS, IN

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

Location: LC - 101

Through presentation and activities, learn more about the NSTA Learning Center and how the Mathematics and Science Centers Network is supporting Michigan teachers using the resources in professional learning.



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SCECH Session

Solutions for Delivering Engineering Design into the Science Classroom

Jason Albert Rossner, BES Solutions

Primary Subject: AS, IN

Interest Level: LE, MS, HS

Location: R - Capital 2

Our active-learner digital program teaches standards-based math, science, engineering, and English language skills to elementary, middle and high school children. The online digital curriculum is designed to meet the Next Generation Science Standards and aligns with a range of state standards. Students and teachers will want to spend time in our STEM labs. Our comprehensive library contains over 1,000 STEM lessons, which are available anytime, anywhere online.

SCECH Session

STEM...(again) FOR THE YOUNGER SET

Diana Matthews, Lisa Morgan, Detroit Country Day Lower School

Primary Subject: GS

Interest Level: EE

Location: R - Capital 3

STEM with young children is doable and FUN! Learn new ideas that work for the classroom and the school community. Engage your youngest learners in STEM activities that encourage minds-on, hands-on learning.

MSELA Strand

Supporting State and National Assessment from the Science Classroom

Sarah Coleman, Muskegon Area ISD

Jennifer Gottlieb, Troy School District

Primary Subject: AS

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

Location: LC - 102

It's not about test, prep, drill - it's about engaging classrooms and reflective practice. Join us we examine sample district assessment plans that support state and national assessments.



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Vendor Session

Understand Photosynthesis and Cellular Respiration

Bill Cline, LAB-AIDS

Primary Subject: BI

Interest Level: HS

Location: LC - Banquet 5

Students have misconceptions about photosynthesis and cellular respiration but this content is essential for understanding how matter and energy flow, both at the micro (cellular) and macro (ecosystem) levels. You will use a computer simulation, hands-on activity, engage in notebooking, and, model strategies that support new teacher/student discussion ratios all from SEPU's new Science and Global Issues: Biology program from LAB-AIDS.

SCECH Session

Useful Manufacturing: Unleashing the Untapped MacGyver in Your Students

Elizabeth Rice, Most Holy Trinity Schools

Primary Subject: GS, EN

Interest Level: EE, LE, MS, HS

Location: R - Regency 1

Participants invent/create a useful product for the classroom-using the materials at hand. Materials are common recyclable products. This is engineering as imagination that meets practical manufacturing.

SCECH Session

Using NASA Data to Conduct Authentic Research with Students

Cris DeWolf, Chippewa Hills High School

Primary Subject: AST

Interest Level: HS, CO

Location: LC - 204

Learn about the Heliophysics CoP, NGSS, and the research project a group of teachers and their students are doing with SOHO, THEMIS, and ACE data. Details at www.mestarocks.org.



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SCECH Session

Utilizing Science and Engineering Practices in Biology and Chemistry

Michelle Mason, Donna Hertel, Portage Northern High School

Primary Subject: CH, BI

Interest Level: HS

Location: LC - Banquet 2 & 4

Looking for some ideas to integrate SEP's into your teaching? We'll show you our ideas to start moving toward an NGSS style classroom.

Friday, March 4, 2016

10:00 a.m. - 11:45 a.m. – Workshops

Examples of How Higher Education is Supporting Teachers with NGSS

R. Charles Dershimer, U of M - School of Education

Deborah Peek-Brown, CREATE for STEM Institute

Brenda Bergman, Michigan Tech University

Susan Ipri Brown, Eric Mann, Hope College

Jeff Conn, Wayne State University

Primary Subject: GS, IN

Interest Level: CO

Location: LC - Banquet 6

This panel will present examples of several higher education professional development projects that engage STEM teachers with learning more about NGSS. Discussion will include lessons learned and funding ideas.



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SCECH Session

CREATE for STEM Institute Strand

Supporting Students' Modeling Practice Using Computer-based Dynamic Systems

Modeling Tool

Tom Bielek, Joseph Krajcik, CREATE for STEM Institute

Primary Subject: GS, CO

Interest Level: MS, HS

Location: LC - Banquet 1 & 3

Modeling is a core practice emphasized in the NGSS. We've developed a computer-based tool for supporting secondary school students in constructing and revising their models and learning dynamic systems thinking.

SCECH Session

CREATE for STEM Institute Strand

Interactions: A curriculum based on the Framework for Science Education

Kristin Mayer, Michigan State University

Jane Lee, Joseph Krajcik, CREATE for STEM Institute

Primary Subject: AS, IN

Interest Level: MS, HS

Location: LC - Banquet 8

In this hands-on workshop, experience a FREE online curriculum on intermolecular forces based on the Framework and NGSS. Explore lessons and find out how to access for use in classroom.

SCECH Session

CREATE for STEM Institute Strand

NGSS Meets the Outdoors: Teaching Elementary Science Outside

Renee Bayer, Michigan State Univ - College of Education

Kara Haas, MSU - Kellogg Bio Station

Primary Subject: EN, IN

Interest Level: EE, LE

Location: LC - Banquet 7

In outdoor classrooms, students can explore and investigate natural phenomena supporting science teaching aligned with NGSS. Dress appropriately to go outside and learn techniques and lesson examples from MSU's Teaching Science Outdoors PD. This is a hands-on activities, any handouts will be web-based, links to resources will be emailed to participants.



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SCECH Session

Vendor Session

Project-based Learning - Using Video-enhanced Lessons

Mike Heithaus, Houghton Mifflin Harcourt

Primary Subject: BI

Interest Level: MS, HS

Location: LC - 203

Project-based Learning - Using video-enhanced lessons to bring students into the field.

Friday, March 4, 2016

10:30 a.m. - 12:30 p.m. - Workshop

SCECH Session

MEECS Water Quality

Joan Chadde, W UP Cntr-Sci/M & Envir. Ed.

Primary Subject: AS, EN

Interest Level: LE, MS

Location: LC - 103

Discover the essential role that water plays in Michigan's economy and in everyone's lives. Students calculate how much water they use, investigate the link between land uses and water quality, and find out how water is monitored and standards are set.

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

SCECH Session

A Collection of Chemistry

Tracy Haroff, Marshall High School

Melyssa Lenon, Chesaning Schools

Primary Subject: CH

Interest Level: HS

Location: LC - 201

This hands-on session will highlight a variety of activities and inquiry labs that keep students engaged while learning chemistry concepts. Handouts will be provided.



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Vendor Session

Biomes and Invasive Species

Bill Cline, LAB-AIDS

Primary Subject: BI

Interest Level: HS

Location: LC - Banquet 5

How do the characteristics of a biome determine the plant and animal life found there? How do non-native species survive to become invasive species? In this activity from Science and Global Issues: Biology Program, students match a set of organism cards to proper climate/biome cards, then use literacy strategies to consider the impact of invasive species. You'll receive a full set of kit and printed materials for later use with your students, complements of LAB-AIDS.

SCECH Session

Cars That Cannot Crash! (V2X - vehicle to vehicle computer communication)

Dale Freeland, Portage Central High School

Primary Subject: CO, PH

Interest Level: HS

Location: R - Michigan 3

Students have been developing working on vehicle to vehicle and vehicle to infrastructure computer communication. The Raspberry Pi computer has been used on scale model vehicles to detect distances, to determine position and to compute speeds. This information has been communicated wirelessly to other mobile computer platforms. The shared information is used to promote safer vehicle travel. This session will highlight details of our journey into the V2X world and successes and challenges that we yet face. Students are learning about aspects of self-driving vehicles which will be in their future. Engineering aspects abound in this study. We will show some custom parts that students have designed and 3D printed which are utilized in the study.



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2016 Session Information

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SCECH Session

Vendor Session

Chemical Education Foundation -Educational Programs

Kathleen O'Conner, Chemical Educational Foundation

Primary Subject: CH

Interest Level: EE, LE, MS

Location: R - Regency 1

In this session, I will introduce the Chemical Education Foundations educational resources. This includes hands-on activities for K-8 classrooms and highlight the 'You Be The Chemist Program'. Participants will be given handouts and Flash drives containing all 'Chemical Education Foundation Educational Resources'. Two hand-on activities will be done during the workshop. All materials will be provided.

SCECH Session

Climate Literacy - Climate Solutions

June Teisan, NOAA

Primary Subject: GS

Interest Level: LE, MS, HS

Location: LC - 204

Want to teach climate literacy but don't know where to start? The National Oceanic and Atmospheric Administration (NOAA) offers a spectrum of online lesson plans, videos, data sets, webinars, and more that can inform and inspire students to engineer solutions to climate concerns.

SCECH Session

Collaborating Classrooms: Connecting Year Round

Norm Lownds, Michigan State University

Primary Subject: IS

Interest Level: LE, MS, HS

Location: R - Michigan 2

Explore how to connect your classroom to the 4-H Children's Gardens and scientists at MSU throughout the year. Customize your collaborations to best enhance and expand your students' STEM learning. Handouts provided.



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SCECH Session

Michigan Mathematics/Science Centers Network Strand

Engaging Elementary and Middle School Students in Modeling

James Emmerling, Genesee ISD

Primary Subject: AS, LT, IN

Interest Level: LE, MS

Location: LC - 101

Modeling is critical in elementary and middle school science learning. Through investigation, discussion and collaboration, learn about and then develop models that can be used in your own science teaching.

SCECH Session

Formative Assessments

Tammy Daenzer, Birch Run Area Schools

Primary Subject: AS

Interest Level: MS

Location: R - Capital 1

Formative Assessments used before, during and after teaching enables effective learning. This lesson provides a variety of formative assessments tools.

SCECH Session

Future Sustainability Center: Education, Partnerships & STEM

Christine Kelly, Allendale Middle School

Primary Subject: EN, IN

Interest Level: LE, MS, HS

Location: R - Capital 2

Description of Session: Challenge students to create a "Sustainability Center!" Teams apply environmental concepts, put them into action, and partner with community organizations. Teams design and build solutions to identified problems; students and community members evaluate and judge solutions. [I will provide handouts and digital forms. Teachers will participate in some of the action steps that their students will take in this process.]



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SCECH Session

Green Chemistry Experiments for Grades 8-12

Larry Kolopajlo, EMU - Chemistry Department

Primary Subject: CH, GS

Interest Level: MS, HS, CO

Location: LC - 104

The twelve principles of Green Chemistry will be presented in several novel experiments and worksheets involving physical/chemical changes, calorimetry, and stoichiometry. Designed for the grades 8-12. Handouts provided.

Immerse Your Students in NGSS Practices with NexGen Inquiry

Bill Dinkelmann, Van Andel Education Institute Sci Academy

Primary Subject: GS, IN

Interest Level: LE, MS, HS, CO

Location: LC - 202

NexGen Inquiry's web-based student journal and teacher classroom tools are built to support implementation of inquiry-based curriculums. Bring your technology device to create an account and get started.

SCECH Session

Vendor Session

INTENSIFY Your Students Observation Skills - SETON WATCHING - A Capital Idea!

Wil Reding, Rent a Rambling Naturalist

Primary Subject: GS, EN

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

Location: R - Capital 3

A simple, yet truly effective way to help your students enhance their ABILITY to observe through the use of their senses in an outdoor or indoor setting. (possibly going outdoors) This is a "hands-on activity and I will provide handouts!



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Physics, Algebra II, STEM OH MY!!!

Nickie Clark, Freeland High School

Primary Subject: PH

Interest Level: HS

Location: LC - 205

We are NOT in Kansas anymore!!! We will share with you our experience in teaching PBL, STEM, Physics and Algebra II all in one course. Information will include specific projects that we developed. We will outline our approach to covering the power standards in a co-teaching environment.

SCECH Session

Vendor Session

STEM from Salmon Part II

Josh Nichols, Heritage Elementary School

Primary Subject: GS, CO, EN

Interest Level: LE, MS, HS

Location: LC - Governors

The most exciting feature of the Salmon in the Classroom program is it's hands-on capability and the creativity of students. Come find out how you can add an engineering component to this program when your students build Remote Operational Vehicles (ROVs) to release the salmon in the river next spring. Measure water quality? - Video invasive species? There is no end to the extensions you can add to this program with an engineering component.

SCECH Session

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: R - Michigan 1

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!



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SCECH Session

Totality is Coming in 2017!

Kevin Dehne, Delta Community College/MESTA

Primary Subject: ES, AST

Interest Level: MS, HS, CO

Location: R - Capital 4

Total Solar Eclipse across the USA in 2017! Participants will learn about totality during a solar eclipse. Details on how to observe, locations and time across the United States will be discussed. Student eclipse activity will be presented and a chance to win a door prize!

Use Science Olympiad Events to Jazz Up Your STEM Curriculum

Marty Buehler, Hastings Area Schools

Scot Conant, WMU College of Eng/Applied Science

Primary Subject: AS, GS

Interest Level: LE, MS, HS

Location: R - Regency 2

Science Olympiad provides many hands on STEM events that fit well into multiple subjects, grade or ability levels and can be used collaboratively to connect your content, kids and department to the new Michigan NGSS expectations. Handouts provided.

1:00 p.m. - 1:45 p.m. – Sessions

SCECH Session

Vendor Session

A "Simple" WALK will HEIGHTEN Your Students Enthusiasm for Learning!

Wil Reding, Rent a Rambling Naturalist

Primary Subject: GS, EN

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

Location: R - Capital 3

A truly effective way to help your students eagerness to learn! Come WALK the Capital area to learn techniques you can use to increase their WISH to learn. This is a "hands-on" activity and I will provide handouts.



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SCECH Session

Avida-ED: Evolution You Can See

Rick Schultz, St. Johns Public Schools

Fred Hingst, DeWitt High School

Primary Subject: BI, CO

Interest Level: MS, HS, CO

Location: LC - 202

This session will introduce the Avida-ED program to both middle school and high teachers. Included in the program will be everything from how to download the program to how to use in open inquiry. Teachers will receive access to the accompanying user manual and lesson plans.

Can Challenge - Building A Better Insulator

Gabriel Knowles, Whitehall District Schools

Primary Subject: GS

Interest Level: LE

Location: R - Michigan 1

In this session we will use inquiry-based learning to design insulators to keep things warm or cold for as long as possible.

SCECH Session

Choosing the Best EdTech for Michigan's New Science Standards

Emily Pohlonski, Novi Community Schools

Primary Subject: AS, CO

Interest Level: EE, LE, MS, HS

Location: R - Regency 1

Despite fancy NGSS labels, not all tech tools have kept up with this major shift in science education. Participants will use the NGSS app (BYOD) to determine which EdTech supports this new vision for science education. (Handouts Provided)



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Vendor Session

Classifying Space Objects (Exploring the Solar System for Grade 5)

Bill Cline, LAB-AIDS

Primary Subject: GS

Interest Level: MS

Location: LC - Banquet 5

In this initial activity from the space science unit of SEPUP's middle level earth science program, participants classify 24 space object cards using criteria of their own choosing. They then reclassify the cards using criteria used by modern astronomers. Participants then use clues on the cards to try to identify these objects to determine where they might be in the solar system - and beyond. You'll engage in an activity from the SEPUP Science Grade 5 Program from LAB-AIDS that support the new teacher/student talk ratios, and also has the literacy, notebooking, assessment strategies built in that make it NGSS ready!

SCECH Session

Vendor Session

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

Michelle Mitchell, Michelle StepekConsumers Energy

Primary Subject: ES, EN

Interest Level: LE, MS, HS

Location: LC - 204

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.

Environmental Educator's Certification Introduction

Cindy Fitzwilliams-Heck, Ferris State University

Primary Subject: EN

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

Location: LC - Governors

This session will introduce the basic requirements for earning the Environmental Educator's Certification (EEC) credential. The EEC is a new offering by the Michigan Alliance for Environmental and Outdoor Education (MAEOE), unique to the field of environmental



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education in Michigan, and pivotal for our profession

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MSELA Strand

Facilitating and Sustaining Change in Your School or District

Julia Alder, Birmingham Public Schools

Primary Subject: AS

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

Location: LC - 102

Learn from our elementary and middle school math, science, and technology integration program development initiative. Strengths, pitfalls, and current program state will be shared. See examples of process, protocols, and products from our multi-year technology integration for science and mathematics classrooms.

SCECH Session

Hominin Phylogeny Construction Using Skulls - Students Using NGSS & The Past

Heather Peterson, William Hodges, Holt High School

Primary Subject: BI

Interest Level: MS, HS, CO

Location: LC - 203

Observe and measure skulls to create phylogenetic trees and the evolution of primates and hominins. Michigan teachers with support from the MSU Museum and BEACON will share hands-on & virtual labs that guide students through the dimensions of NGSS.

SCECH Session

Integrating iPad® 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 iPads and Vernier technology, including our new Go Wireless Link, and experiments, including Boyle's Law and Grip Strength Comparison, will be conducted.



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SCECH Session

Vendor Session

Making Use of Conceptual Mapping in the Classroom

Shannon Long, Lansing Community College

Primary Subject: IN

Interest Level: MS, HS, CO

Location: R - Michigan 2

Learn about various concept mapping techniques and how to adapt them to your classroom. Student co-presenters will be speaking on the impact of concept mapping on student learning and understanding.

SCECH Session

Vendor Session

Neuroscience: Low-fi Development of High-tech hands-on teaching Labs

Gregory Gage, Backyard Brains

Primary Subject: GS

Interest Level: MS, HS, CO

Location: LC - Banquet 7

Our organization (Backyard Brains) develops open-source DIY neuroscience tools which are appropriate for the benchtop of both research and instructional teaching labs. Our focus is on hands-on experiments and electrophysiology. This lecture will provide an overview of our mission to re-engineer research-grade lab equipment using first principles and will highlight basic principles of neuroscience in a "DIY" fashion: neurophysiology, functional electrical stimulation, micro-stimulation effect on animal behavior, neuropharmacology, even neuroprosthesis and optogenetics!



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SCECH Session

Michigan Mathematics/Science Centers Network Strand

NGSX: One Pathway for Professional Learning

Melissa Hayes, COOR ISD

Primary Subject: AS, IN

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

Location: LC - 101

NGSX is a national program for science professional learning. Become familiar with NGSX through an activity and learn about additional opportunities to become part of the NGSX team in Michigan.

Ok2Say – Student Safety Program

Mary Drew, Attorney General's Office

Primary Subject: AS, CO

Interest Level: EE, LE, MS, HS

Location: R – Michigan 3

OK2SAY encourages Michigan students to submit confidential tips on potential harm or criminal activities directed at students, school employees, and schools. Tips may be submitted 24/7 by phone, text, email, mobile app, or via the OK2SAY website. Learn more about how OK2SAY can be implemented in your school and how to host a free seminar.

SCECH Session

Phenomenal Science Units

Darcy McMahon, SMTM/Central Michigan University

Primary Subject: AS, GS

Interest Level: EE, LE

Location: R - Capital 1

Come experience Phenomenal Science! Our collaborative team has developed a complete three-dimensional elementary curriculum for the new MSS. It's highly engaging and includes blended learning freely available by 2017. Handouts, opportunities to review and pilot units provided.



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SCECH Session

Science and Rigor... Music to my Ears!

Teneshia Moore, Eric Steele, Detroit Public Schools

Primary Subject: AS, CH

Interest Level: MS, HS, CO

Location: LC - 104

Participants will explore cognitive demand and the role it plays in informing lesson planning, instruction and assessment in the science classroom.

SCECH Session

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: R - Regency 2

Leary of query? 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.

SCECH Session

KEYNOTE SESSION

What Do the New Michigan Science Standards Mean for Instruction and Assessment in your Classroom?

Joseph Krajcik, CREATE for STEM Institute

Primary Subject: IN

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

Location: LC - Banquet 1 & 3

The New Michigan Standards shift the focus from science classrooms as places where students learn about science ideas to environments where students use disciplinary core ideas, scientific and engineering practices and crosscutting concepts to explore, examine and use science ideas to explain how and why phenomena occur or to find solutions to problems. To succeed, assessments, both summative and formative, will also need to shift to provide opportunities where students apply their knowledge to explain phenomena or design solutions to problems. In this session, Professor Krajcik will discuss the major shifts in New Standards and what they mean for classroom instruction and assessment.



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2016 Session Information

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SCECH Session

Writing in Science -- How To Make It Meaningful

Kimberly Sharplin, Joni VanCampenhout, Wayne Memorial High School

Primary Subject: GS

Interest Level: MS, HS

Location: R - Capital 2

Come get some great ideas to have your students write in science. Handouts and prizes available!

Friday, March 4, 2016

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

Vendor Session

Cool Tools for Electricity & Magnetism

Donald Pata, Arbor Scientific

Primary Subject: PH

Interest Level: LE, MS, HS, CO

Location: LC - 205

Make a light bulb dance 60 times a second. See why the hand-crank Van De Graaff is better than the electric version. Presented by award winning Physics teacher Don Pata.

CREATE for STEM Institute Strand

SCECH Session

Developing NGSS Assessments for 3D Learning

Jane Lee, Michigan State University

Phyllis Haugabook Pennock, Deborah Peek-Brown, Krista Damery, CREATE for STEM Institute

Primary Subject: AS

Interest Level: MS

Location: LC - Banquet 8

Your classroom assessments can integrate core ideas, scientific practices, and crosscutting concepts. Find out how! Explore examples of items, student responses, and ways to use them in your instruction.



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SCECH Session

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!

Friday, March 4, 2016

1:30 p.m. - 2:30 p.m. – Workshop

SCECH Session

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.



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2:00 p.m. - 2:45 p.m. – Sessions

SCECH Session

Academy of Natural Resources: Summer Professional Development for Educators

Becky Durling, Discovery Elementary School

Jon Gray, Waldon Middle School

Primary Subject: GS

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

Location: LC - Governors

The Academy of Natural Resources is a fun, engaging, week-long camp for all educators! Come learn about the sessions offered this year, SCECH, graduate credit and more!

SCECH Session

Vendor Session

Carbon TIME Teaching Networks: Curriculum, Coordinating PD, and Professional Support

Christie Morrison Thomas, Carbon TIME

Jennifer Wilkening, Ann Arbor Huron High School

Primary Subject: AS, BI

Interest Level: MS, HS

Location: R - Regency 1

MS/HS science teachers: learn about the Carbon TIME (Transformations In Matter and Energy) teaching networks, which include NGSS-aligned curriculum, online assessments, materials, professional development, and (yes!) stipends.

Vendor Session

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!



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SCECH Session

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.)

SCECH Session

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.

SCECH Session

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.



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SCECH Session

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.

SCECH Session

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 will receive free samples and door prizes will also be available!

Vendor Session

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.



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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, CO

Location: LC - Banquet 1 & 3

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.

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.

SCECH Session

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!



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SCECH Session

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.

SCECH Session

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.

SCECH Session

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.



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SCECH Session

Teachers2Teachers International

Tom Wessels, TBA ISD

Chadd McGlone, Teacher 2 Teachers International

Primary Subject: GS

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

Location: R - Michigan 1

T2T-I is a group of US-based educators who support science and mathematics teachers in schools around the world. Hear about a recent trip to a middle school in the rainforests of Ecuador.

SCECH Session

Using Forensic Science to Teach Scientific Inquiry

Lindsey Patt, Forest Hills Central High School

Primary Subject: GS

Interest Level: HS

Location: R - Regency 2

Explore several inquiry-based forensic science activities that I use to incorporate the Next Generation Science Standards. Activities can easily be adapted to any science content area. Handouts will be provided.

SCECH Session

Michigan Mathematics/Science Centers Network Strand

What is the Michigan Mathematics and Science Centers Network?

Amy Oliver, Allegan/Van Buren M/S Center

Primary Subject: AS

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

Location: LC - 101

The MMSCN is a resource for ALL Michigan science teachers. Each of the 33 Centers runs professional learning and student programs. Learn about our work and what's happening at your Center.



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2016 Session Information

Friday, March 4, 2016

2:00 p.m. - 3:45 p.m. – Workshop

SCECH Session

Vendor Session

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!

Friday, March 4, 2016

3:00 p.m. - 3:45 p.m. – Sessions

SCECH Session

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.

SCECH Session

Vendor Session

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!



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2016 Session Information

Continued – Friday, March 4, 2016
3:00 p.m. - 3:45 p.m. – Sessions

SCECH Session

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.

SCECH Session

Vendor Session

Civics, Science, and Stewardship

Kevin Frailey, MI Dept. of Natural Resources

Primary Subject: GS, EN

Interest Level: LE, MS, 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.

SCECH Session

Michigan Mathematics/Science Centers Network Strand

Defining STEM

Karen Meyers, 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.



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2016 Session Information

Continued – Friday, March 4, 2016
3:00 p.m. - 3:45 p.m. – Sessions

SCECH Session

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.

SCECH Session

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.

SCECH Session

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.



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2016 Session Information

Continued – Friday, March 4, 2016
3:00 p.m. - 3:45 p.m. – Sessions

SCECH Session

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 through 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).

Vendor Session

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.



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2016 Session Information

Continued – Friday, March 4, 2016
3:00 p.m. - 3:45 p.m. – Sessions

Vendor Session

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.

SCECH Session

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.

SCECH Session

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.



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2016 Session Information

Continued – Friday, March 4, 2016
3:00 p.m. - 3:45 p.m. – Sessions

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 Arnsward, 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.

Vendor Session

Who Infected Whom? (Cell biology for Grade 7)

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!



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2016 Session Information

Friday, March 4, 2016

3:00 a.m. - 4:45 p.m. – Workshops

SCECH Session

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!

SCECH Session

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!

SCECH Session

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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2016 Session Information

Continued - Friday, March 4, 2016
3:00 a.m. - 4:45 p.m. – Workshops

SCECH Session

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.

SCECH Session

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



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2016 Session Information

Continued - Friday, March 4, 2016

3:00 p.m. - 5:00 p.m. - Workshop

SCECH Session

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.

Friday, March 4, 2016

4:00 p.m. - 4:45 p.m. – Sessions

Vendor Session

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.



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2016 Session Information

Continued - Friday, March 4, 2016
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SCECH Session

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.

SCECH Session

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.

SCECH Session

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.



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SCECH Session

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.

Vendor Session

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.



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SCECH Session

Vendor Session

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.

SCECH Session

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.

SCECH Session

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.



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SCECH Session

Scientific Models: Shifting Lessons in Modeling to Deepen Conceptual Understanding

Adrienne Griffith, Diana Bowman, Armstrong Middle School

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.

SCECH Session

Standards-Based Grading in the Next Generation

Phil King, Lakeview Eric Johnson, Middle School

Primary Subject: AS, IN

Interest Level: LE, MS, HS

Location: LC - 204

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.

SCECH Session

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.