



MSTA 70TH ANNUAL CONFERENCE
EXPLORE MICHIGAN,
EXPLORE SCIENCE

MARCH 3-4, 2023 • LANSING, MI



CONFERENCE OPPORTUNITIES

MESTA ROCK SHOP

Need something to get your students excited about science? Come visit MESTA's fabulous Rock Shop! We have a variety of rocks, minerals, fossils and other oddities that will spark your student's curiosity. These purchases can be used as classroom showpieces and make great gifts. There is something for everybody. All proceeds go towards Earth Science educator scholarships and grants awarded through the Michigan Earth Science Teachers Association. Cash, check, and cards accepted.

Michigan Earth Science Teacher (MESTA) Rock Shop has a variety of Rocks, Minerals, and Fossils to spark student curiosity. Cash, check, and cards accepted. Proceeds fund: Stoney classroom grants, Cranson field scholarships.

The MESTA rock raffle is at 2:15pm.

MSTA GARAGE SALE

Help support the Michigan Science Teachers Association! Browse our selection of "gently used" science/ educational items. May include glassware, kits, textbooks etc. Items you need at prices you can afford. We accept cash and credit.

Visit the Exhibit Hall to check out the items:

Friday March 3 & Saturday, March 4 from 7:00am - 3:00pm

Items purchased need to be picked up no later than 3:00pm on Saturday, March 4.

Proceeds from the sale will be used to pay for teachers to attend the 2024 Annual MSTA Conference.

MSTA RAFFLE – ENTER TO WIN!

Participants can put their tickets in the raffle item buckets at the MSTA Store in the Exhibit Hall. See specific times and details below.

Raffle - Friday, March 3

Raffle tickets to be submitted between 11:30pm - 4:30pm. Drawing will happen on Friday, March 3 at 3:45pm. Prize pick up by 12:00 pm Saturday. **Presence not required to win**

Raffle - Saturday, March 4

Raffle tickets to be submitted between 7:00am - 3:45pm. Drawing will happen on Saturday, March 4th at 12:45 pm. **Presence required to win.**



WI-FI LOGIN INFORMATION

USERNAME: *msta*

PASSWORD: *70conference*

KEYNOTE HIGHLIGHTS



FRIDAY KEYNOTE

CINDY HASSELBRING, NASA OFFICE OF STEM ENGAGEMENT

Cindy Hasselbring currently serves as a K-12 Education Advisor at the Office of STEM Engagement for NASA Headquarters, was a Senior Policy Advisor for STEM Education at the White House Office of Science and Technology Policy and served as the Senior Director for the High School Aviation Initiative at Aircraft Owners and Pilots Association in Frederick, Maryland. Prior to these roles, Cindy served as Special Assistant to the State Superintendent of Schools at the Maryland State Department of Education and led STEM initiatives at the Department, including developing a statewide STEM education strategic plan, expansion of computer science, and construction of a youth apprenticeship program. Ms. Hasselbring was a 16-year veteran mathematics teacher at Milan

High School in Milan, Michigan. She was awarded the Presidential Award for Excellence in Mathematics and Science Teaching in 2005 and is a National Board Certified teacher. During the 2011-12 and 2012-13 school years, she served at the National Science Foundation as an Albert Einstein Distinguished Educator Fellow. During her tenure, she worked for the Assistant Director for Education and Human Resources at NSF where she assisted in the development of the federal STEM education strategic plan. In 2012, Cindy received the National Science Foundation's Director's Award for Collaborative Integration for her work with the NSF-Department of Education joint initiative on math education. Cindy served as a member of the National Council of Teachers of Mathematics Classroom Resource Committee. A three-time highly qualified applicant and interviewee for NASA's Astronaut Candidate program, Cindy was an active member of NASA's Network of Educator Astronaut Teachers (NEAT) for many years. Her pursuit of being an astronaut led her to taking language courses in Japanese and Russian, earning SCUBA certification, and achieving her private pilot's certificate. Each year, she helps lead a high school girls' aviation camp at the world's largest airshow, AirVenture, in Oshkosh, Wisconsin. She earned her Bachelor of Arts in Mathematics from Cedarville University (OH) and her Master of Arts in Secondary School Teaching from Eastern Michigan University.

SATURDAY KEYNOTE

KIM NOWACK, BRIDGE DIRECTOR, MACKINAC BRIDGE

Kim received her Civil Engineering degree from Michigan Technological University in 1985. She immediately started her career with the Michigan Department of Transportation. In 2002, Kim accepted the position of Chief Engineer for the Mackinac Bridge Authority where she was responsible for all engineering and maintenance oversight of the bridge. She worked in this position for 17 years and was the first woman to hold this position in the Bridge Authority's 60+ year history. Kim was appointed to the position of Executive Director of the Mackinac Bridge in 2019.

Kim is a member of the International Cable Supported Bridge Owners Association where she has authored and presented papers at international conferences, and she is a Transportation Research Board panel member tasked with revising the federal guidelines for inspections of suspension bridge main cable systems.

Kim is a member of MTU's Presidential Council of Alumnae, and a past member of their Civil and Environmental Engineering Advisory Committee and she was recently inducted into the MTU Academy of Civil and Environmental Engineers.



THURSDAY, MARCH 2, 2023

TIME	TRACK	SESSION	LOCATION
5:00 PM		Welcome Reception <i>Sponsored by Greater Lansing CVB</i>	R.E. Olds Transportation Museum

FRIDAY, MARCH 3, 2023

TIME	TRACK	SESSION	LOCATION
7:00 - 7:45 AM		Exhibitor Visits	Exhibit Hall A
7:00 - 8:00 AM		Registration Open	Main Concourse
8:00 - 9:00 AM	Keynote	Friday Keynote <i>Cindy Hasselbring, NASA Office of STEM Engagement</i>	Exhibit Hall C
9:00 - 9:30 AM		Networking & Exhibitor Visits	Exhibit Hall A
9:00 AM - 12:00 PM		Teacher Prep Programs - MDE	Radisson Hotel Capitol I & II
9:30 - 10:30 AM	Elementary, Middle School	Magnetic Forces Discoveries for Elementary Students	Ballroom 1
9:30 - 10:30 AM	Elementary, Middle School, High School, Higher Ed	Autonomous Robotics Education Through Competition	Ballroom 2
9:30 - 10:30 AM	Elementary	Making Teaching Science Manageable!	Ballroom 3
9:30 - 10:30 AM	Middle School, High School	Using Phenomena in 3D Science to Engage Students and Make Learning Relevant	Ballroom 4
9:30 - 10:30 AM	Middle School	Engaging Students in Outdoor Education Throughout Multiple Subjects	Ballroom 5
9:30 - 10:30 AM	High School	Does Wood Melt?	Ballroom 6
9:30 - 10:30 AM	Elementary, Middle School, High School, Higher Ed	Science Literacy Integration Collaboration	Ballroom 7
9:30 - 10:30 AM	Middle School, Higher Ed, Informal Ed	What is Community Resilience Education and Why Should We Do It? - Part 1	Ballroom 8
9:30 - 10:30 AM	Elementary, Middle School, Informal Ed	Hands-On Data Activity - Mowing for Monarchs	Room 101
9:30 - 10:30 AM	Middle School, Higher Ed	3D Modeling in Science Education	Room 102
9:30 - 10:30 AM	Elementary, Middle School, Informal Ed	Collections to Classrooms: Citizen Science Bird Studies and How to Use Them in Schools - Part 1	Room 103
9:30 - 10:30 AM	Middle School, Informal Ed	PONDering in the Classroom	Room 104
9:30 - 10:30 AM	Elementary, Middle School, High School	Grant Writing 101: Find the Fund\$ for STEM	Room 201

FRIDAY, MARCH 3, 2023

TIME	TRACK	SESSION	LOCATION
9:30 - 10:30 AM	Elementary, Middle School, High School	Everyone Needs a Coach: The Power of Instructional Coaching in Science	Room 202
9:30 - 10:30 AM	High School	Monitoring Local Watersheds with MiWaterNet Sensors - Creating Citizen Scientists and Freshwater Stewards	Room 203
9:30 - 10:30 AM	Middle School, High School, Higher Ed	6 Teaching Skills You Didn't Learn in College	Room 204
9:30 - 10:30 AM	Elementary, Middle School, High School, Informal Ed	Virtual Learning is Teacher-Friendly with GLLee!	Room 205
9:30 - 10:30 AM	Middle School, High School	How Successful Science Teachers Teach (Am I Doing It?)	Governor's Room
10:30 - 11:00 AM		Networking & Exhibitor Visits	Exhibit Hall A
11:00 AM - 12:00 PM	Middle School	Getting Students to Ask Better Questions	Room 101
11:00 AM - 12:00 PM	Higher Ed	Catalytic Conversations: Facilitated Dialogue Between High School Science Teachers in Higher Ed Science Faculty	Governor's Room
11:00 AM - 12:00 PM	Elementary, Middle School, Informal Ed	Invasive Species: Boring! Tips and Tricks to Keep Your Audience Engaged	Ballroom 2
11:00 AM - 12:00 PM	High School	Now We're Cooking! With NGSS Aligned Science!	Ballroom 3
11:00 AM - 12:00 PM	Middle School, High School, Higher Ed	Changing Climate and Food Production - How Can We Sequester Carbon and Feed Our Growing Population?	Ballroom 4
11:00 AM - 12:00 PM	Middle School, High School, Informal Ed	Michigan Environmental Education Curriculum Support (MEECS) Reimagined: Water Quality	Ballroom 5
11:00 AM - 12:00 PM	Elementary, Middle School	Comics and Science "Say What?"	Ballroom 6
11:00 AM - 12:00 PM	Middle School, Higher Ed, Informal Ed	What is Community Resilience Education and Why Should We Do It? - Part 2	Ballroom 8
11:00 AM - 12:00 PM	Elementary	Kids Ask the Darndest Things: The Science of Questioning in Early Elementary Classrooms	Ballroom 7
11:00 AM - 12:00 PM	High School, Higher Ed	Demos on the Practical Applications of Light Polarization	Room 102
11:00 AM - 12:00 PM	Elementary, Middle School, Informal Ed	Collections to Classrooms: Citizen Science Bird Studies and How to Use Them in Schools - Part 2	Room 103
11:00 AM - 12:00 PM	Middle School, High School, Higher Ed	The Case of Experiential Learning with the Zoo	Room 104
11:00 AM - 12:00 PM	High School, Higher Ed	Can Eyjafjallajökull Happen Here? Modeling Volcanic Ash Clouds Over the U.S.	Room 201

FRIDAY, MARCH 3, 2023

TIME	TRACK	SESSION	LOCATION
11:00 AM - 12:00 PM	Elementary, Middle School	Designing District Systems and Professional Learning Communities to Support K-12 Science	Room 202
11:00 AM - 12:00 PM	Middle School, Higher Ed	Medical Laboratory Science - Shining a Spotlight on a "Behind the Scenes" Profession	Room 203
11:00 AM - 12:00 PM	Elementary	Using Modeling to Strengthen Literacy Strategies in the Elementary Classroom	Room 204
11:00 AM - 12:00 PM	Elementary, Middle School, High School, Informal Ed	The Carp Conundrum and Other Tails	Room 205
11:00 AM - 12:00 PM	Middle School	Try It Out! Scientific Sensemaking with Mi-STAR Simulations	Ballroom 1
12:00 - 1:00 PM		Lunch & Exhibitor Visits	Exhibit Hall C
1:00 - 2:30 PM	Field Trip	Tour the Facility for Rare Isotope Beams (FRIB) at Michigan State University	Michigan State University
1:00 - 2:30 PM	Field Trip	Fenner Nature Center	Fenner Nature Center
1:00 - 4:00 PM		Teacher Prep Programs - MDE	Radisson Hotel Capitol I & II
1:00 - 2:00 PM	Elementary, Middle School	Engineering Opportunities to Enhance Science Learning and Develop Problem Solvers for PK-8 Learners	Governor's Room
1:00 - 2:00 PM	Middle School, High School	Where Do I Get More NGSS Aligned Videos for My Elementary Students? High School Students to the Rescue!	Room 103
1:00 - 2:00 PM	High School	Take the Mess and Stress Out of Bacterial Transformation	Ballroom 2
1:00 - 2:00 PM	Elementary, Middle School, High School	"I have heard about it, but...": Exploring Project-based Learning, Equity, and Social Justice Science Teaching	Ballroom 3
1:00 - 2:00 PM	Middle School, High School, Higher Ed	Biology's Best 2023 - Interactive Session Where Veteran Teacher Shares Lab Ideas, Engagement Strategies and Inquiry Based Lessons & Units	Ballroom 4
1:00 - 2:00 PM	Middle School, High School, Informal Ed	Michigan Environmental Education Curriculum Support (MEECS) Reimagined: Ecosystems & Biodiversity	Ballroom 5
1:00 - 2:00 PM	Middle School, Informal Ed	Taxonomy Talk	Ballroom 6
1:00 - 2:00 PM	Elementary, Middle School, High School	Bringing OER Science Materials to Your District!	Ballroom 8
1:00 - 2:00 PM	Elementary, Middle School	Elementary/Middle Extravaganza	Room 201
1:00 - 2:00 PM	Middle School	The OpenSciEd Instructional Model: Routines for Advancing Students Through a Storyline	Room 102

FRIDAY, MARCH 3, 2023

TIME	TRACK	SESSION	LOCATION
1:00 - 2:00 PM	Elementary, Middle School	District Evaluation: NGSS Expectations in the Classroom for Teachers and Principals	Room 104
1:00 - 2:00 PM	High School	NGSS Conceptual Chemistry Tips and Tricks	Room 101
1:00 - 2:00 PM		Science Teachers Educator Round Table	Room 202
1:00 - 2:00 PM	Middle School	3E Evolution: The Full Course: Modeling Antibiotic Resistance	Room 204
1:00 - 2:00 PM	Middle School	MothEd - Research Investigations of Moth Biodiversity	Room 203
1:00 - 2:00 PM	Elementary	OpenSciEd Elementary Development: Supporting Meaningful Three-Dimensional Science and Literacy for K-5 Classrooms	Room 205
2:00 - 2:30 PM		Networking & Exhibitor Visits	Exhibit Hall A
2:30 - 3:30 PM	Elementary, Middle School, High School, Informal Ed	3P Learning: More Than Buzzwords	Room 205
2:30 - 3:30 PM	Elementary	Making an Engineer	Governor's Room
2:30 - 3:30 PM	Middle School	How Does a Comic Book Embedded in a Curriculum Make Science More Engaging?	Ballroom 2
2:30 - 3:30 PM	Middle School, High School, Higher Ed	Teacher in Residence: Translating Scientific Research into Lesson Plans	Ballroom 3
2:30 - 3:30 PM	Elementary	Assessments for Our Youngest Learners	Ballroom 4
2:30 - 3:30 PM	Middle School, High School	No Forest? No Problem! Conduct Outdoor Investigations with Your Students Anywhere!	Ballroom 5
2:30 - 3:30 PM	Middle School	Providing Student Choice Through Science Electives	Ballroom 6
2:30 - 3:30 PM	Elementary, Middle School	Integrating Science and Social Studies: Building on Connections - Part 1	Ballroom 7
2:30 - 3:30 PM	Middle School, High School	A Protocol for Students to Provide a Long-Term Solution to Local Restoration Monitoring	Ballroom 8
2:30 - 3:30 PM	Middle School	What Evidence Do you Have to Support Your Claim?	Room 101
2:30 - 3:30 PM	High School, Higher Ed, Informal Ed	Use Molecular Tools to Find Antibiotic Resistance Genes in Environmental DNA	Room 102
2:30 - 3:30 PM	Elementary	Phenomenal Hands-On STEM Experiences	Room 103
2:30 - 3:30 PM	Middle School	Frog Wars Extended: Using Frogs (both Origami and Live) to Teach Natural Selection and Food Webs	Room 104
2:30 - 3:30 PM	Middle School, High School, Higher Ed	Explore Astronomy: Planetariums and Observatories of Michigan; Options for Educators	Room 201
2:30 - 3:30 PM	Middle School, High School	Student Scientists and Stewards	Room 202

FRIDAY, MARCH 3, 2023

TIME	TRACK	SESSION	LOCATION
2:30 - 3:30 PM	Elementary, Middle School, High School	Powerful Partnerships for PBL2: Informal Institutions + Classroom Educators = Project and Place-Based Learning Success!	Room 203
2:30 - 3:30 PM	Middle School	Develop Junior Engineers in Middle School with Phenomenal	Room 204
2:30 - 3:30 PM	Middle School	Mi-STAR's Literacy Initiative: Integrating Reading in the Science Classroom	Ballroom 1
3:00 - 4:00 PM		Networking & Exhibitor Visits	Exhibit Hall A
4:00 - 5:00 PM	Elementary, Middle School, High School, Informal Ed	Qualifying Observations - Turning Student Observations into Data Using Maps, Images, and Outdoor Field Experiences	Room 205
4:00 - 5:00 PM	Elementary, Middle School	Super Spheros: A Simple Way to Level Up STEM	Governor's Room
4:00 - 5:00 PM	Middle School	123 STEM & Me	Ballroom 5
4:00 - 5:00 PM	High School, Higher Ed	Cut, Paste, Confirm: Real CRISPR Gene Editing and PCR Genotyping!	Ballroom 6
4:00 - 5:00 PM	Middle School, High School, Informal Ed	Science and Motivation	Ballroom 8
4:00 - 5:00 PM	High School, Higher Ed, Informal Ed	Autistic Superpowers in the Science Classroom: Lessons I've Learned from my Students	Room 101
4:00 - 5:00 PM	Elementary, Informal Ed	Learning in Places in Michigan - Learn More! Get Involved!	Room 102
4:00 - 5:00 PM	Elementary, Middle School	Integrating Science and Social Studies: Building on Connections - Part 2	Ballroom 7
4:00 - 5:00 PM	Middle School, High School	Earth Science in Physics: Making Real World Connections	Room 103
4:00 - 5:00 PM	High School, Higher Ed	Bring CRISPR/Cas to Your Class with Innovative Approaches	Room 104
4:00 - 5:00 PM	Elementary, Middle School, High School	Engaging Student Engineers: Designing Engineering Solutions for Your Science Classroom	Room 201
4:00 - 5:00 PM	Informal Ed	Right This Very Minute...Where Does Your Food Come From?	Room 202
4:00 - 5:00 PM	High School	Incredible Isotopes	Room 203
4:00 - 5:00 PM	Elementary	Developing Little Engineers! Engineering Design in the K-5 Classroom	Room 204
5:00 - 6:00 PM		Reception	River Street Pub
6:00 - 8:00 PM		MSTA Awards Dinner and Ceremony	Ballroom 2 & 4



MICHIGAN ON THE FARM STEM

2023 IMMERSIVE DAIRY EXPERIENCE

**JUNE 20-23, 2023
EAST LANSING**

QUESTIONS?

**Stop by the Michigan Agriculture
in the Classroom booth today!**



PARTICIPANTS WILL



**DISCOVER PHENOMENA IN FOOD PRODUCTION BY
VISITING AGRICULTURE SITES AND MEETING WITH
PROFESSIONALS IN THE FIELD**



**SUPPORT IN THE DEVELOPMENT OF A UNIT OUTLINE TO
ASSIST IN PLANNING, ADAPTING, AND DEVELOPING
EXPERIENCES FOR STUDENTS WITH REAL-WORLD
CONTENT**



**EARN UP TO 40 CEU OF PROFESSIONAL DEVELOPMENT
HOURS**



**APPLY BY
MARCH 13TH**

**DON'T MISS OUT ON THIS UNIQUE PROFESSIONAL DEVELOPMENT EXPERIENCE
PUT ON BY UNITED DAIRY INDUSTRY OF MICHIGAN**

SATURDAY, MARCH 4, 2023

TIME	TRACK	SESSION	LOCATION
7:00 - 7:45 AM		Exhibitor Visits	Exhibit Hall A
7:00 - 8:00 AM		Registration Open	Main Concourse
8:00 - 9:00 AM	Keynote	Saturday Keynote <i>Kim Nowack, Mackinac Bridge Director</i>	Exhibit Hall C
9:00 - 9:30 AM		Networking & Exhibitor Visits	Exhibit Hall A
10:00 - 11:00 AM	Field Trip	Preuss Pets Tour	Preuss Pets
9:00 AM - 12:00 PM		Place-Based Education with the Great Lakes Stewardship Initiative	Radisson Hotel Capitol I & II
9:30 - 10:30 AM	Middle School	Health in Our Hands: Using 3-D Formative Assessments to Inform Student Learning and Support Teachers' 3-D Practices	Room 205
9:30 - 10:30 AM	Middle School, High School	Brave Enough to Fail: Three Strategies for Building Student Resilience with Analyzing Data	Governor's Room
9:30 - 10:30 AM	Middle School, High School	Touring the Universe Through Multiwavelength Astronomy	Ballroom 8
9:30 - 10:30 AM	Elementary, Middle School, High School, Higher Ed	Providing K-12 Teachers with Skills and Strategies to Accomplish the Intended Vision of the SEP and CCC	Ballroom 2
9:30 - 10:30 AM	Elementary	ABC's and 123's of EE in EC (Early Childhood)	Ballroom 3
9:30 - 10:30 AM	Elementary, Middle School, High School	Implementing Equitable Assessment Systems: Mapping Microsystems of Assessments to Guide Student Learning Stories - Part 1	Ballroom 4
9:30 - 10:30 AM	Elementary, Middle School, High School	Building Scientific Literacy	Room 203
9:30 - 10:30 AM	Elementary, Middle School, Higher Ed, Informal Ed	If Bears Could Vote...	Ballroom 6
9:30 - 10:30 AM	Middle School, High School, Higher Ed	Quantitative Reasoning Approaches for Chemistry	Ballroom 7
9:30 - 10:30 AM	Middle School	Jumpstart System Modeling with Mi-STAR Lesson Plan	Ballroom 1
9:30 - 10:30 AM	Middle School, High School	Standards Based Grading in Chemistry	Room 101
9:30 - 10:30 AM	Elementary, Middle School	Lessons from the Lab: Creating Science Classrooms That Match Actual Science Practice	Room 102
9:30 - 10:30 AM	Middle School	Exploring the Tyndall Effect: Blending the Chemistry and Math with Easy-to-Use, Inexpensive Materials	Room 103
9:30 - 10:30 AM	Elementary, Middle School, High School	How to Use the "Web Soil Survey" to Understand Landscapes in Michigan	Room 104

SATURDAY, MARCH 4, 2023

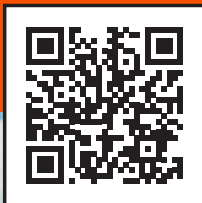
TIME	TRACK	SESSION	LOCATION
9:30 - 10:30 AM	Middle School	Girl Power: Powerful Ways to Motivate Girls in STEM	Room 201
9:30 - 10:30 AM	Middle School	Tarisa Puzzles a free and easy way for student engagement	Room 202
9:30 - 10:30 AM	Elementary	Yes, We Can Make High Quality 3D Science Accessible for All of Our K-5 Students!	Room 204
10:30 - 11:00 AM		Networking & Exhibitor Visits	Exhibit Hall A
11:00 AM - 12:00 PM	Field Trip	Lansing Brewing Company Brewer's Happy Hour Tour and Tasting	Lansing Brewing Company
11:00 AM - 12:00 PM	Middle School	Mi-STAR Units and Place-Based Education: Getting Started	Ballroom 1
11:00 AM - 12:00 PM	Elementary, Middle School, High School	Rediscover the Joy of Teaching: Three Powerful Strategies for the Post-Pandemic Science Classroom	Room 204
11:00 AM - 12:00 PM	High School	Exploring Cosmic Gamma Rays in a High School Classroom	Room 205
11:00 AM - 12:00 PM	High School	Bringing Engineering into the Classroom	Governor's Room
11:00 AM - 12:00 PM	Middle School	Where's the Beef...Tale of Two Burgers	Ballroom 2
11:00 AM - 12:00 PM	Elementary, Middle School, High School	Implementing Equitable Assessment Systems: Mapping Microsystems of Assessments to Guide Student Learning Stories - Part 2	Ballroom 4
11:00 AM - 12:00 PM	Middle School, High School, Informal Ed	Using Environmental Phenomena to Drive Student Inquiry with NASA, GLOBE and AREN Resources	Ballroom 3
11:00 AM - 12:00 PM	Middle School, High School	Using LEGO for Chemical Bonding	Ballroom 5
11:00 AM - 12:00 PM	Middle School, High School	Heliophysics in Your Classroom - NASA HEAT & C.E.R.	Ballroom 6
11:00 AM - 12:00 PM	Middle School	Language of Science	Ballroom 7
11:00 AM - 12:00 PM	Middle School	Top Ten Tech Tools for the Science Classroom	Ballroom 8
11:00 AM - 12:00 PM	Elementary, Middle School	Make Time for Science with Project-Based Learning	Room 101
11:00 AM - 12:00 PM	Middle School, High School	Developing Environmental Justice Tasks - Part 1	Room 102
11:00 AM - 12:00 PM	Middle School, High School	Milkweed Magic: Community Science in Your Classroom	Room 103
11:00 AM - 12:00 PM	Middle School	Seeing Science Multicultural Lenses	Room 104
11:00 AM - 12:00 PM	Middle School	Making Sense of a Phenomenon Through Thoughtful Integration of Investigations with Literacy Activities	Room 201
12:00 - 1:00 PM		Lunch & Exhibitor Visits	Exhibit Hall A
1:00 - 4:00 PM		Explore Place-Based Education with the Great Lakes Stewardship Initiative	Radisson Hotel Capitol I & II

SATURDAY, MARCH 4, 2023

TIME	TRACK	SESSION	LOCATION
1:00 - 2:00 PM	Middle School	Place Based Connections for Mi-STAR 6th Grade Units	Ballroom 1
1:00 - 2:00 PM	Elementary	Criteria and Constraints in Elementary STEM	Room 204
1:00 - 2:00 PM	High School	Making it Stick: Using Inquiry in Tough Chem Concepts	Governor's Room
1:00 - 2:00 PM	High School	Taking Macromolecules to Micro!	Ballroom 3
1:00 - 2:00 PM	Middle School, High School, Higher Ed	Preparing the Next Generation of Science Teachers	Ballroom 4
1:00 - 2:00 PM	High School, Higher Ed	Visualizing DNA Structure, Central Dogma, and Enzyme Activity Through Fluorescence	Ballroom 5
1:00 - 2:00 PM	Elementary, Middle School	Enhance Science Instruction by Incorporating 3-Dimensional Standards in Your Favorite Lessons - Part 1	Ballroom 6
1:00 - 2:00 PM	Middle School, High School	Developing Environmental Justice Tasks - Part 2	Room 102
1:00 - 2:00 PM	Elementary	Integrating Foundational Coding Skills Through Screen-Free Science Activities	Room 101
1:00 - 2:00 PM	Elementary, Middle School, Informal Ed	Why Water Matters	Ballroom 2

Bring a hands-on, field trip-style experience to your school!

The FARM Science Lab is mobile classroom that provides STEM-based lessons for grades K-5 to increase student's agricultural awareness.



HOW WILL WE SUSTAINABLY FEED NEARLY 10 BILLION PEOPLE BY THE YEAR 2050?

As students virtually farm in different countries they must balance social, economic and environmental factors.

Lesson plans provided in this curriculum-based program geared for grade 7-12.

FREE
SCHOOL PROGRAM!



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SATURDAY, MARCH 4, 2023

TIME	TRACK	SESSION	LOCATION
1:00 - 2:00 PM	Middle School, High School	Genes in Space: Genetics on the International Space Station, Free Loaner Equipment, Curriculum, and More!	Ballroom 8
1:00 - 2:00 PM	High School	OpenSciEd Chemistry	Room 103
1:00 - 2:00 PM	High School	Discovering Diabetes Storyline	Room 104
1:00 - 2:00 PM	Elementary, Middle School	Using Media to Drive Inquiry-Driven Science Learning	Room 201
1:00 - 2:00 PM	High School	Instructional Pathways to Support Student Intellectual Engagement	Room 202
1:00 - 2:00 PM	Elementary	Use OER, NGSS-Aligned Science Curricula in Your K-5 Classroom - TOMORROW!	Room 203
2:00 - 2:30 PM		Networking & Exhibitor Visits	
2:30 - 3:30 PM	Middle School	Mi-STAR Strategies to Make 3D Assessments Work for You	Ballroom 1
2:30 - 3:30 PM	Middle School, High School	Beginner Biotech: Micropipetting Art and Gel Electrophoresis for Middle and High Schools	Room 203
2:30 - 3:30 PM	Elementary, Middle School	Enhance Science Instruction by Incorporating 3-Dimensional Standards in Your Favorite Lessons - Part 2	Ballroom 6
2:30 - 3:30 PM	Elementary, Middle School	Classroom Management Through STEM Sprints	Room 204
2:30 - 3:30 PM	Elementary, Middle School, High School, Informal Ed	The Best Science Comes From the Great Lakes	Governor's Room
2:30 - 3:30 PM	Middle School, Informal Ed	Teaching Human Ecology with Models and Simulations	Room 205
2:30 - 3:30 PM	Elementary	The 3 C's of Science: Building a Foundation for Discovery	Ballroom 2
2:30 - 3:30 PM	High School, Higher Ed, Informal Ed	Forest Bathing for Teachers	Ballroom 3
2:30 - 3:30 PM	Middle School	Building Engineering Into Your Curriculum	Ballroom 4
2:30 - 3:30 PM	High School	Michigan Science Teachers Meeting	Ballroom 5

SCECH INFORMATION

You MUST select the SCECH ticket of \$20.00 during online registration in order for MSTA to submit your hours for CE.

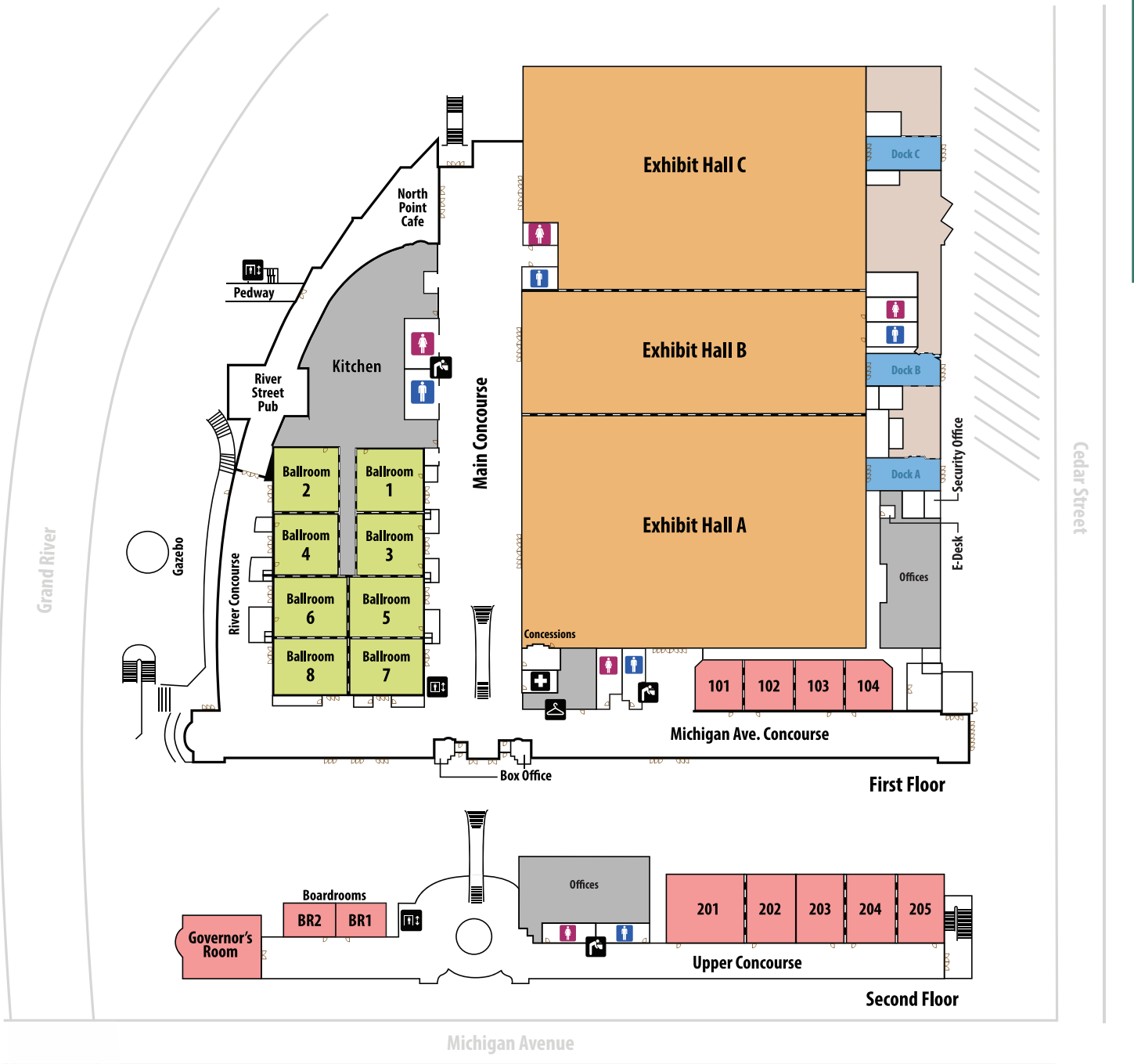
- **14.0 SCECH Hours: Attend Both Days**

In order to receive your SCECH hours, you are required to check-in to each session you attend in the mobile app.

LANSING CENTER MAP



Lansing Center Overview



MAP KEY

- Removable Walls
- Elevators
- Men's Bathroom
- Coat Check
- Women's Bathroom
- Drinking Fountain
- First Aid

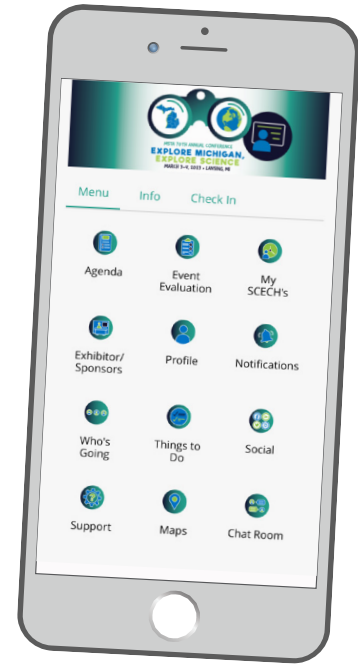
DOWNLOAD THE MOBILE APP

Download the “**My Ngage Event**” event platform to access session materials, speaker bios, sponsor and exhibitor information.

For Android and Apple users, search for the **My Ngage Event** in your App or Google Play Store. You can also access the platform from your smartphone, tablet or PC's web browser with the following URL:
<http://app.resultsathand.com/ngage>

To access through your Google Play or App store:

- Search for the **My Ngage Event** app
- Locate the app and download
- Tap the **Sign In** button and type in the email address used for registration
- Create a passcode and hit **Set Passcode**
- Click on the **Events** icon and find the icon for the **2023 MSTA Annual Conference**
- Select the event



Academy of Natural Resources

Two options to choose from

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July 30 - August 4, 2023

\$100 Scholarships Available



ANR Classic - \$395
July 9 - 14, 2023

Learn about Michigan's diverse natural resources, discover trends in their management, and experience activities that bring that knowledge to the classroom by attending this engaging professional development opportunity.

- 13 meals, 5 night's lodging and materials are included
- \$100 Scholarships available
- Approximately 30+ SCECH available from Michigan Department of Education

For more information visit:
Michigan.gov/anr



CONFERENCE FIELD TRIPS

All transportation to and from the field trip locations will be the responsibility of the attendee. If there is a cost associated with the trip attendees will pay upon arrival to the location.



FENNER NATURE CENTER

Friday, March 3 | 1:00 - 2:30 PM | Limit of 20 Participants | Free
2020 E Mt. Hope Ave, Lansing, MI 48910

Fenner Nature Center invites you for a hands-on professional development session outlining methods of incorporating the outdoors into the classroom. This program will demonstrate how to perform a schoolyard habitat analysis with limited greenspace options for educators teaching grades K-12. We will also examine seasonal teaching opportunities: looking at environmental science through the lens of maple sugaring and how teachers can incorporate aspects of this centuries old practice into their science curriculum.



THE FACILITY OF RARE ISOTOPE BEAMS (FRIB) AT MSU

Friday, March 3 | 1:00 - 2:30 PM | Limit of 50 Participants | Free
640 Shaw Ln, East Lansing, MI 48824

Explore a world-leading rare isotope laboratory where nuclei are smashed into a target at half the speed of light! Our tour includes demonstrations, an introduction to the goals and methods of nuclear science, and a walk behind the scenes where nuclei are accelerated, filtered and/or studied. The secrets we learn could help explain what happens in supernovae and the origins of elements that make up the human body. With the latest \$730 million update that opened in May 2022, this DOE Office of Science laboratory will push the boundaries of nuclear science.

Getting to our laboratory, parking, and finding the right entrance can be tricky – detailed instructions for arriving are here: <https://frib.msu.edu/contact/visiting-frib.html>. You can enter FRIB (640 S. Shaw Lane) at our lobby door in the curved glass section at the NW corner of our building (right next to Chemistry).



PREUSS PETS

Saturday, March 4 | 10:00 - 11:00 AM | Limit of 15 Participants | Free
1127 N Cedar St, Lansing, MI 48906

Preuss Pets celebrates 41 years in business this year! Come visit one of Mid Michigan's tourist destinations less than one mile from the conference downtown.

Recently featured on the Colbert Report with Stephen Colbert and winners of the Lifetime Achievement Award through the World Pet Association, this pet store is not your average store. Come tour their classroom, coral propagation area, 3,000 gallon in-store river, exotic bird and reptile nurseries, and more! Preuss Pets also assists many teachers with pets in the classroom.



LANSING BREWING COMPANY BREWER'S HAPPY HOUR TOUR AND TASTING

Saturday, March 4 | 11:00 AM - 12:00 PM | Limit of 25 Participants | \$18 per person
518 E Shiawassee St, Lansing, MI 48912

Join Lansing Brewing Company's head brewer Chris Ward on an immersive brewery experience. We are going to go beyond the traditional tour, and offer you the same Beer School 101 (first of 10 classes) that our staff goes through. You'll learn about LBC, the brewing process, get a tour of our facilities, and go through a full tasting experience. There will be ample time for Q&A as well! All you need are closed toed shoes, a hunger for knowledge, and a thirst for some truly great beer!



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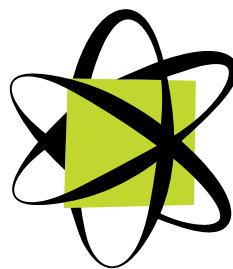


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Curriculum, Materials, & Professional Learning for the **Next Generation!**



CEREAL CITY SCIENCE

by BCAMSC



Designed for the Next Generation Science Standards, Cereal City Science units engage students in sense-making of phenomena or designing of solutions through an integrated curriculum. Units are equipped with everything needed to implement three-dimensional learning in Kindergarten through Middle School classrooms.

Your partner in science instruction – Cereal City Science supports K-8 educators with immersive professional learning opportunities in modeling, science concepts, sense-making, and pedagogical strategies in full-day, in-person or virtual trainings and workshops.

Visit cerealcityscience.org to learn more!

PARTNERSHIP PROGRAM

Make a commitment to the future of your museum or organization and join the MSTa Partnership Program! Gain direct access to thousands of Michigan Science educators. Position your museum or organization as a science education destination for school-groups from around the state. Establish your staff as experts in the industry. Share your thoughts, successful programs and innovative experiments in MSTa print and digital communications pieces. Examples of other organizations are zoo's, observatories, aquariums, public gardens, etc.

All these opportunities and more are yours as a MSTa Partner for the incredibly small investment of just \$250 per year.

Partnership Program benefits include:

- Company logo and link on the MSTa partnership webpage
- One banner ad per year in the MSTa Monthly eNewsletter
- Two article submissions per year in the MSTa Monthly eNewsletter
- One article submission per year in the quarterly MSTa LINKS publication
- Regular mentions on MSTa Social Media Channels
- Receive regular updates and information about MSTa events and programming
- Your annual commitment will see immediate return on investment with a \$50 discount off a non-profit table or booth at the MSTa Annual Conference during your first year as an MSTa Partner!

Share our vision for the advancement of science education in Michigan by joining the MSTa Partnership Program today!

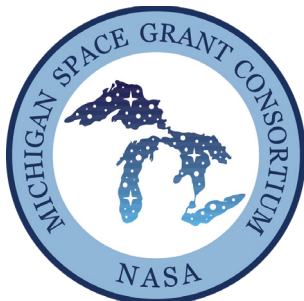
For more information contact us directly by calling 734-973-0433 or email office@msta-mich.org.

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SAVE THE DATE

2024 MSTA ANNUAL CONFERENCE
THURSDAY, FEBRUARY 28 - SATURDAY, MARCH 2
LANSING CENTER & RADISSON HOTEL

DETROIT COUNTRY DAY SCHOOL



DETROIT COUNTRY DAY SCHOOL

science SERIES

MAY 15-18, 2023 // SCECHs AVAILABLE

From "no tech" to "new tech", teachers explore exciting demonstrations and labs, including the use of cell phones, laptops, probes, and bluetooth sensors in day-long workshops! Space is limited!

WORKSHOPS

CHEMISTRY

Monday, May 15th

ADVANCED CHEMISTRY

Tuesday, May 16th

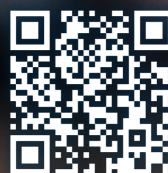
BIOLOGY

Wednesday, May 17th

ENVIRONMENTAL SCIENCE

Thursday, May 18th

- // 8:30am - 2:30pm each day
- // Location, DCDS Upper School
- // \$200 per day
- // To register, scan the QR code below or visit, www.dcds.edu/science-ce



Scan me!

Questions? Email mdrougel@dcds.edu

