Making Connections
Science in the South
SIU @ Touch of Nature
APRIL 27, 2023

Presented by
Southern Illinois University Carbondale

With support from
Illinois Science Teaching Association

Conference Chairpersons
Suzanne Asaturian, Carbondale High School, Certified NBPTS
Kathleen Gaare-Wiese, Former ISTA Regional Director, Marion CUSD #2, Retired
Julie Wittenborn-Sikorski, Retired Educator, SIUC NOYCE Program Advisory Board

Conference Committee
Angela Box, ISTA Regional Director Region 5, STEM Education Research Center
Meteicha Green, Murphysboro CUSD #186
Renee Lopez-Swalls, SIU Carbondale, NOYCE
Sydney Pogue, SIU Carbondale, Touch of Nature
Selena Sasser, Ph.D., Arkansas Tech University, Retired
Alyssa Weisenstein, ISTA Regional Director Region 6, Marion Unit 2
Jackie Welch, Conference Coordinator, SIU Carbondale Events and Outreach
Making Connections
Science in the South

Registration, Breakfast, & Networking
Friends Lodge & Freeberg Hall

Featured Speaker: Dr. Robert H. Mohlenbrock
Friends Lodge

NOYCE STEM Education Grants
Friends Lodge

Connecting w/ NGRREC
River Radio Building

Plant Blindness
Friends Lodge

Earth Force: Youth Led Environmental Action Civics
River Radio Building

Lunch & "Making the Most of your ISTA Membership"
Freeberg Hall

Science Fair
Friends Lodge

Wine & Cheese Reception and Giveaways!
Freeberg Patio

Microscopic Discoveries
River Radio Building

STEM Reads
Friends Lodge

Water Moves Our Earth
River Radio Building

Parachutes STEM Activity
River Radio Building

STEAM Reads
Friends Lodge

Solar Viewing
Library Telescope Program
Hands-on Eclipse Activities

Earthworms: ID, Types and Ecosystem Roles
Lions Pavilion

Wet Water Moves Our Earth
River Radio Building

Project Wet
Windwagon Pavilion

ActivateOK Aviation/Aerospace STEM app
Morris Lounge

Physics
Shawnee Lounge

Roadside Thrashing
Shawnee Lounge

Earthworms: ID, Types and Ecosystem Roles
Lions Pavilion

Project Learning Tree
Windwagon Pavilion

Teaching in 3D
Morris Lounge

Teaching in 3D
Morris Lounge

Roundtable Discussion: Schoolyard Gardens & Grant Information
Lions Pavilion

Field Trip!
Giant City State Park
1 - 2:50 pm

Field Trip!
Fish Hatchery
3 - 3:50 pm

APRIL 27, 2023

SESSION DESCRIPTIONS
A Drip Around the World
Annamarie Farris

Water is vital to everyone. We will offer you hands-on lessons that inspire students to use water wisely. We will provide you with lesson standards and resources to help you be a water expert!

For Grades K-12

Southern Illinois Innovations in STEM Education Grant
NOYCE Fellows: Megin Rice and Meteicha Green

This session is designed as a trifecta of information for STEM teachers. Part I will be an informational presentation regarding the newly created Innovations in STEM Education Grant. Participants will receive information about the grant,
application links, as well as have time for a question and answer session. Part II will consist of NOYCE teachers presenting information on curriculum resources available for field trips to select southern Illinois locations. These NOYCE teachers have been working collaboratively with local agencies such as Giant City State Park and Crab Orchard National Wildlife Refuge to write lesson plans designed specifically for field trips to these locations. Part III of the session will be presented by another group of NOYCE teachers who have been developing curricular activities focused on the 2024 solar eclipse. Activities and resources for the April 2024 solar eclipse will be for a variety of age groups and publicly available.

Connect with NGREEC: Discover what the National Great Rivers Research and Education Center has to offer K-12 Educators
Erica Doerr and Jen Mandeville
River Radio Building

Get your feet wet with the NGRREC education team and learn about the array of teacher training opportunities offered by The National Great Rivers Research and Education Center. Experience a hands-on activity from Project WET called “Blue River” and learn about the interconnectedness of streams in the Mississippi River watershed.

Teaching Climate Change in Multiple Subjects
Mallory Swafford
Morris Lounge

In this program, teachers learn how to use a free database to teach climate change in a variety of subjects that climate change may not typically be applied to. Teachers can find resources in science-based subjects like physics and chemistry, but also in ELA, social studies, and math. This cross-curricular approach to teaching climate change brings lessons reviewed by climate scientists to the classroom.

DOUBLE SESSIONS (10:00 – 11:50 am)
For Grades K-12

Connecting Predators & Prey Through Space-Use Research
Abigail Weber and Stephanie Honcharenko
Lions Pavilion

Our session will consist of an outdoor, off-trail hike around Touch of Nature's property to “search” for collared deer, bobcats, and coyotes, using VHF radio telemetry. We will also discuss the ecological connections that exist between predators and deer, impacting both population dynamics and behavior.
Project Learning Tree – Explore your Environment!  
Anne Townsend, Linda Hauser, Molie Oliver and Kathleen Gaare-Wiese

Climb the learning tree with us! Learn about this updated and award winning national environmental education curriculum that can be used in or out of the classroom. Participate in hands-on activities that increase environmental literacy through teaching students “how to think, not what to think” about a variety of natural resource topics.

**Come and Go Session - 10:30 am – 1:30 pm**

**Connecting the Learner to the Landscape: Illinois Natural Divisions**
Stephen Gariepy  
Freeberg Patio

Utilize Illinois Natural Divisions Education resources, developing localized landscape connections as a connective framework/network for science education. NGSS-“Relate to the interests and life experiences of students”. Facilitated on the trail.

**Preparing Students and Communities for Eclipse Observations**
Cindy Hepp and Julie Wittenborn-Sikorski  
Freeberg Patio

Teachers need to prepare both students and communities to safely enjoy the coming solar eclipse, and we can help! We will share the hands-on activities, favorite websites, and useful resources that were successful in our schools. Useful ideas for teachers of kindergarten and up will be included.

**SESSION II**

11:00 – 11:50 am

For Grades K-8

**A Drip Around the World**
Annamarie Farris  
Shawnee Lounge

Water is vital to everyone. We will offer you hands-on lessons that inspire students to use water wisely. We will provide you with lesson standards and resources to help you be a water expert!
For Grades 3-8

**After School Robotics Teams and Competition For 4th and 5th Graders**
Heather Parr and 4th/5th grade students  
Morris Lounge

Want to up your coding instruction and have fun doing it? Consider having an after school competitive robotics program for younger students. All the competitions are online so there is no traveling involved. This session will feature 4th and 5th grade students explaining their experiences in our robotics teams.

For Grades 5-11

**Earth Force: Youth Led Environmental Action Civics**  
River Radio Building  
Michelle Ramos

Earth Force: Environmental Action Civics is an educational approach where youth work in partnership with adults to identify a local environmental issue and engage with community members to take action by advocating for systemic changes to policies or practices.

For Grades 6-12

**Plant Blindness: What Is It and What Can We Do?**  
Friends Lodge  
Chris Benda

Humans owe their survival to the existence of plants, yet this group of organisms is largely ignored by the public. For instance, children can recognize some conspicuous animals, as well as many corporate logos, but typically only very few plants, if any. This program will introduce the concept of "plant blindness," which is the inability to pay attention to and understand the amazing diversity of plants that surround us every day.

**CONTINUED FROM SESSION 1**

**Connecting Predators & Prey Through Space-Use Research**  
Abigail Weber and Stephanie Honcharenko

**Project Learning Tree – Explore your Environment!**  
Anne Townsend, Linda Hauser, Molie Oliver and Kathleen Gaare-Wiese

**Come and Go Session - 10:30 am – 1:30 pm**  
Freeberg Patio

**Connecting the Learner to the Landscape: Illinois Natural Divisions**

**Preparing Students and Communities for Eclipse Observations**
Connecting the Learner to the Landscape: Illinois Natural Divisions

Preparing Students and Communities for Eclipse Observations

For Grades K-8

Microscopic Discoveries
Michelle Asa, Meteicha Green and Mallory Swafford

Explore with microscopes and learn how a two-week summer enrichment program sparked an interest in science for 2nd through 6th graders. Activities presented can be used in a classroom to help students develop a love of exploring and learning across subjects.

For Grades 6-12

Science Fair - "Not as Archaic as You Think"
Emily Dawson and Jann Hawkins

The Illinois Junior Science Academy of Science has been hosting the Regional and State Science Expositions since its inception in 1927. Learn about the benefits and real-world skills students gain by conducting their own research, analyzing their results, and communicating their findings. Learn more about how
your students can be a part of the competition, how to become a member of IJAS, and give your students access to over $20,000 in prizes, scholarships, summer enrichment, and higher educational opportunities. The Current and Past Presidents of IJAS, together with a combined 50 years of teaching experience, want to help bring this opportunity to more Illinois secondary students.

**Make Physics Fun Again**  
Shawnee Lounge  
Michael Dollins

In this hands-on workshop, physics teachers will learn how to bring low-cost labs, demonstrations and strategies into the classroom. It will be fun and engaging.

**For Grades K-12**

**aviateOK AviationAerospace STEM app**  
Morris Lounge  
Irene Miller

aviateOK is an aviation/aerospace STEM app that provides aviation/aerospace-related content, activities, and resources to K-12 students, parents, and educators. Educator resources will assist in locating, engaging, and beneficial aviation/aerospace-related activities and curriculum for students. aviateOK is designed to promote engagement and enthusiasm among students through the pursuit of knowledge and exploration of the aviation/aerospace industry. The presentation will provide an overview of the app with a focus on the aviation/aerospace resources that are of interest to educators.

**Earthworms: Identification, Types, and Ecosystems Roles**  
Lions Pavilion  
Amanda Weidhuner

We will learn the major types of earthworms, how to identify them, their burrowing types and roles in the ecosystem, and build burrowing demonstration.

**DOUBLE SESSION (1:00 – 2:50 pm)**  
For Grades K-12

**Getting WILD in your Classroom!**  
Burkes Lounge  
Anne Townsend, Linda Hauser and Kathleen Gaare-Wiese

Are you looking to find ways to bring the outdoors indoors? Then check our Project WILD! Get a chance to play these interdisciplinary conservation and environmental education activities that focuses on wildlife and habitat during this session. The goal of Project WILD is to develop awareness, knowledge, skills, and commitment resulting in informed decisions, responsible behavior, and constructive actions concerning wildlife and the environment.
For Grades K-5 and 9-12

STEAM Reads
Jenna Griffith

Integrate books into your Science curriculum with STEAM Reads. We will learn how to use your Library Media Center to bolster students’ love of science through experiments based on books and reading. Elementary and high school resources and hands on activities will be provided.

For Grades 3-12

Teaching in 3D
Travis Clayton

This presentation will present you with ideas and examples for using 3D technology across all subject areas to engage and challenge your students, and the opportunity to join a growing network of design teachers from across the region who are working together to share ideas, lesson plans, and new technology!

---

WILDFLOWER WALK
Jennifer Randolph-Bollinger
Giant City State Park, Visitors’ Center
1:00 – 3:00 pm

Join Giant City Park Naturalist, Jennifer Randolph-Bollinger, for a wildflower walk! Experience some of the best spring wildflower trails in southern Illinois. Learn fun facts to help students remember the names of ephemerals and other plants.

SESSION IV
2:00 – 2:50 pm

For Grades K-5 and 9-12

STEAM Reads
Jenna Griffith

Integrate books into your Science curriculum with STEAM Reads. We will learn how to use your Library Media Center to bolster students’ love of science through experiments based on books and reading. Elementary and high school resources and hands on activities will be provided.

For Grades 3-12

Teaching in 3D
Travis Clayton

This presentation will present you with ideas and examples for using 3D technology across all subject areas to engage and challenge your students, and the opportunity to join a growing network of design teachers from across the region who are working together to share ideas, lesson plans, and new technology!
For Grades 6-8

_Water Moves Our Earth; Plants Stabilize Our Earth_  
Suzanne Cunningham

Water is the major force in shaping our planet. Students use simple soil tray models to measure water runoff and soil erosion. These simple models show students how plants and pant residue play major roles in preventing water runoff and soil erosion.

For Grades 9-12

_Float or Sink, Pollution’s Effects on Our Brink_  
Jacob Rice and Elijah Haar

In this experiment, middle/high school students will create and design their own boats and add small weights to represent aquatic organisms such as lily pads or water striders. They will observe the floating ability of the boats in a large container of water and then add various pollutants, such as but not limited to, food coloring, multiple surfactants, and oil, to the water. Students will observe how the pollutants affect the floating ability of the boats and discuss the effects on aquatic organisms. The class will brainstorm solutions for reducing water pollution.

_Earthworms: Identification, Types, and Ecosystems Roles_  
Amanda Weidhuner

We will learn the major types of earthworms, how to identify them, their burrowing types, and roles in the ecosystem, and build burrowing demonstration.

CONTINUED FROM SESSION III

For Grades K-12

_Getting WILD in your Classroom!_  
Anne Townsend, Linda Hauser and Kathleen Gaare-Wiese
FOR GRADES K-5 AND 9-12

**STEAM Reads**

Jenna Griffith

Integrate books into your Science curriculum with STEAM Reads. We will learn how to use your Library media Center to bolster students love of science through experiments based on books and reading. Elementary and high school resources and hands on activities will be provided.

**Friends Lodge**

FOR GRADES 3-5

**Science+Engineering+Math=Parachute STEM Activity**

Suzanne Cunningham

This STEM activity includes reading two books. During multiple lessons, student groups design, build, test, and analyze parachute models at least two times. Student groups learn that the engineering design process and the scientific method are circular processes.

**River Radio Building**

FOR GRADES K-12

**Schoolyard Gardens**

April Bartnick and Jake Smith

This roundtable discussion offers participants creative ideas for building a school sensory garden and/or pollinator habitat. Current and retired teachers and a representative from Illinois Department of Natural Resources will discuss barriers and solutions. Information on grant opportunities from Innovations in STEM Education and IDNR will end the session.

**Lions Pavilion**

FOR GRADES 3-12

**Teaching in 3D**

Travis Clayton

This presentation will present you with ideas and examples for using 3D technology across all subject areas to engage and challenge your students, and the opportunity to join a growing network of design teachers from across the region who are working together to share ideas, lesson plans, and new technology!
If you don't kill it, it'll kill you: Dangers of Roadside Thrashing
Sheilla WaWire and Chindia Benard

In this case-based lesson, middle school students will explore different forms of roadside thrash and the factors that contribute to such increased pollution occurrences. An understanding of this type of pollution will form a basis upon which students will conceptualize the adverse environmental, human, and economic effects that come with it. This, in turn, will set the stage for the students to come up with action plans for minimizing the menace.

Little Grassy Fish Hatchery Tour
3:00 – 4:00 pm

Don’t miss this unique opportunity to tour the indoor and outdoor spawning and rearing ponds and learn how lakes in Illinois are stocked by this fish hatchery.

WINE/CHEESE NETWORKING RECEPTION
Freeberg Patio
3:50 – 5:00 pm

Door Prizes and PDH Certification

To receive your 5.0 PDHs electronically, complete the conference evaluation by using this QR code.
EXHIBITORS

Environmental Education Association of Illinois
Michelle Ramos

Greater Egypt Regional Planning & Development Commission
Kelsey Bowe
Tyler Carpenter

Illinois Department of Natural Resources
Joe Bauer

Illinois Environmental Protection Agency
Kristi Morris

MicroTech Microscope Sales & Service
Warren Holmes

National Great Rivers Research & Education Center
Erica Doerr
Jenn Mandeville

USDA Forest Service
Linda Hauser
Jon Jackson

STEM Education Research Center
Rockette Jaros

Little River Research & Design
Jim King