

Fall 2024 Science Educator Regional Professional Learning

Welcome to the Fall 2024 Science Educator Regional Professional Learning!!

This program is designed to give you some specifics about the day as well as help you determine which session you are interested in attending in the afternoon.

Logistics

Date	Oct. 1, 2024
Location	Drake University We will begin our day at the Olmsted Center (2875 University Ave, Des Moines, IA 50311) (Map)
Time	9 a.m. – 3 p.m.
Parking	Available in the lot just southeast of the Olmsted Center off of University Avenue. There is a \$7 fee per vehicle for parking for the day.

Morning Session

The morning session will run from 9:00-12:00. We will begin in Parent's Hall in the Olmsted Center but will be splitting into grade bands for a great portion of the morning. You will be assigned the grade band and location that you indicated in your registration form.

Lunch

Lunch will be provided free of charge by the Iowa DNR in Parent's Hall in the Olmsted Center. During lunch there will be short presentations by the DNR, the Drake University, Iowa Science Teacher's Section of IAS, and we will recognize our Presidential Award (PAEMST) winners for Science from 2023.

Afternoon Sessions

The afternoon sessions will follow two separate formats. There are longer sessions (2-hour) options as well as shorter sessions (1-hour). If your school is sending a team, it is suggested that you divide and conquer several of the offerings so that you can bring more learning back to your district. Note the locations of some of these sessions as they may not be located in Parent's Hall. Some offerings are outside, so dress appropriately if choosing those options.

(E) = Elementary (MS) = Middle School/Junior High (HS) = High School

One Hour Sessions Option (60 minute- pick 1 from 1:00-2:00)

(By choosing the 1-hour session option, you will be able to choose 2 sessions for the afternoon- see below)

1-2 p.m.

Grading Practices in Science (E) (MS) (HS)

Christopher Like - Iowa Department of Education

There are a lot of schools looking to make the shift to Standards Based Grading, Upgrading, or some other form of evaluating student achievement. These shifts are complicated enough without adding on 3 dimensions in Science required by our standards. This session will focus on helping educators navigate this change with special considerations that come along with science instruction, assessment, and evaluation.

How to Spot Science Imposters (E) (MS)

Emily Starr - Starrmatica

Come on down! Join me in a fun, interactive game-show: Spot the Red Flag! Challenge yourself to decide whether sample STEM challenges and science materials are a nourishing meal for the mind or a sugary snack that rots your students' brains. In the process, you'll learn to identify high-impact curriculum materials and how to mold some of those less-than-perfect resources into the effective learning tools both you and your students deserve. (All contestants receive handy resource checklists as parting gifts!)

Sensemaking in Early Elementary Classrooms (E)

Rebecca Wilson

Motivated to increase authentic sensemaking in Early Elementary Classrooms? Learn how the Project Approach and other inquiry based learning engages children in sensemaking which deepens learning of concepts and the development of dispositions and skills through real world contexts, investigations and higher-order thinking. Participants will identify key project phases, how to use planning tools for topic selection, and intentionally teach through standard integration. Participants will examine documentation of project work including photos and children's questions.

Drake Math and Computer Science (E) (MS) (HS)

Maryanne Huey - Drake University

Description TBD

Easing into Socioscientific Issues (E) (MS) (HS)

Jerrid Kruse - Drake University

One goal of science class is to prepare our students to navigate modern issues. Come experience and discuss some strategies and activities to start helping kids think beyond the classroom.

2-3 p.m.

Exclusive Physics Day at Adventureland (HS)

Tony McCutcheon

Join us for an exciting presentation on Iowa's Adventureland Physics Day, where education meets thrill! This session will provide an informative first look at our upcoming event, designed to inspire students through hands-on, authentic learning experiences at Adventureland theme park. We will discuss our goals, including fostering a love for learning, differentiating instruction to meet all students' needs, and connecting students with influential figures to spark their dreams. Your feedback and questions are invaluable as we refine our plans to make this day fun, memorable, and life-changing. Let's work together to create an unforgettable educational adventure!

What Your STEM Hub Can Do For You (E) (MS) (HS)

Sarah Derry - STEM Hub Manager

Iowa STEM exists to support educators as they connect STEM learning to careers in Iowa. Access free training and hands-on materials, grants to building learning opportunities with local business, paid summer teacher externships and more.

Making Sense of Nature - Connecting Natural Resources to Classroom (E) (MS) (HS)

Gus Elliott

This session will introduce participants to the vast content, data, expertise, and local resources provided by the Iowa Department of Natural Resources and other conservation partners. We will dive into a local environmental sense making lesson and provide resources for you and your school to bring local outdoor phenomena into classrooms!

Iowa Standards Deep Dive (E) (MS) (HS)

Christopher Like - Iowa Department of Education

The Iowa Science Standards can be complicated with some important nuances. If you need a refresher on our standards, or are new to teaching science, this is the session for you. Come see examples of how to interpret three dimensional standards for classroom instruction.

Science and Engineering Everyday with Picture Books (E) (MS)

Emily Starr - Starrmattica

More than 100 STEM picture books await your exploration in this hands-on session. Learn how to use picture books in your reading block to encourage scientific thinking, support notice and wonder routines, model the science and engineering practices, and demonstrate the engineering design process. Take home lists of STEM picture book recommendations to help you integrate reading and science.

Exploring Local Flooding with the Iowa Flood Center (E) (MS) (HS)

Ellen Carmen - Iowa Flood Center

This summer, many Iowans experienced record flooding in their communities. These recent events demonstrate the profound impact flooding can have on local communities as the risk of large flood events in Iowa increases.

In this session, staff from the Iowa Flood Center will share resources to support learning about why floods happen, how communities are impacted by flooding, and how we can prepare for and prevent floods. The session will include a demonstration of the Iowa Flood Information System and other water resource learning activities, sharing of adaptable classroom resources, alignment options with Iowa Science standards, and opportunities for further engagement with the Iowa Flood Center.

Full Session Option (120 minute- pick 1 from 1:00-3:00)

(By choosing the 2-hour session option, you will be able to choose 1 session for the afternoon- nothing from above)

1-3 p.m.

Iowa Phenomena Project (E) (MS) (HS)

Tiffany Morgan- Iowa Public Television

One way to engage students in authentic observations of phenomena and get them asking scientific questions is participation in well crafted citizen science projects. Visit the Daryl Smith Prairie and Savannah to collect cloud cover, surface temperature, and other data for the GLOBE Program. Then discuss our group data - what does our data tell us about the UNI preserve system? What new questions do you have? Craft your own scientific questions that can be investigated through descriptive, comparative, and correlative field research. Then learn how you can share your data in the Iowa Science Phenomena Website (iowaphenomena.org).

These sessions are sponsored by the Iowa Conservation Education Coalition (ICEC). The first 10 participants to sign up will receive a complimentary membership to ICEC.

Discovering Prairies and Pollinators - How to bring Iowa's original dominant landscape to your classroom(E) (MS) (HS)

Anne Riordan, anne.riordan@dnr.iowa.gov, IA DNR

Explore the structures and functions of native prairie plants and discover the amazing, correlating physical and behavioral adaptations that exist in the insects, birds and mammals who pollinate them. Observe the complete metamorphosis of the Monarch butterfly through each life cycle stage, from egg, through 5 instars of caterpillar (larva) to chrysalis (pupa) and finally in the emergence of an adult butterfly. You will learn techniques to bring these topics into your science, math, and literacy lessons. Lastly, you will learn how to make native seed balls to begin or enhance a pollinator plot in your schoolyard, or to send home for students to contribute to their local community's landscape. Supplies and free materials provided by the Iowa Department of Natural Resources.

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More than just Hawkeyes - Exploring all Iowa Raptors! (E) (MS) (HS)

Christina Roelofs, christina.roelofs@dnr.iowa.gov

Raptors are an amazing group of birds with so many examples right here in Iowa! Give your students the ultimate food chain experience by exploring adaptations, predator/prey relationship, and dissection. Teachers will be given a chance to interact with LIVE raptors and then take part in a hands-on dissection experience that they can take back to their classroom. Supplies and free materials provided by the Iowa Department of Natural Resources.

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NASA Next Gen STEM (E) (MS) (HS)

Jessica Sain, Rose Marsh, & Deepika Sangam: NASA

Spark student curiosity using a variety of lesson plans and hands-on experiments that teach STEM concepts. Through these sustained engagement experiences with authentic content, hands-on inquiry-based experiences, and partner-driven collaborations, students will be engaged in NASA mission activities and provide contributions to NASA's work.

Drake University Science Sampler (E) (MS) (HS)

Lisa Morlock

Get lesson plan ideas, discuss how to meet standards, connect with professors in areas you teach, and learn how Drake resources can benefit your students! Participants will tour several campus classrooms: dissect a virtual cadaver, do a taste test to explore genomics, graze in the Sprout urban garden, and browse the library of hands-on STEM materials.

After registering for the event, you will receive a detailed individualized agenda for the day approximately a week in advance. If you have any questions about the training, please contact Chris Like at chris.like@iowa.gov.