

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. 24, 2024
Location	Morningside University We will begin our day at the Buhler Rohlf's Hall in Weikert Auditorium (Map Building 2)
Time	9 a.m. – 3 p.m.
Parking	Parking is available in the lot just south of Buhler Rohlf's Hall and the James and Sharon Walker Science Center.

Morning Session

The morning session will run from 9:00-12:00. We will begin in Weikert Auditorium in Buhler Rohlf's Hall 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 Weikert Auditorium. 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

Please choose one afternoon session. 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 Weikert Auditorium. Some offerings are outside, so dress appropriately if choosing those options

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

Choose 1 Afternoon Session

1-3 p.m.

Standards & 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.

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

Jerrid Kruse

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.

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.

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.

Project-Based Learning in STEM (E) (MS) (HS)

Brian McFarland

From 2021-23, Morningside operated the Science from Siouxland program for incoming freshman Biology and Chemistry majors that arrived during the Fall 2021 semester, and were first-generation and/or from a rural background. This program, using funding from the National Science Foundation, established a three-semester sequence of Project-Based Learning (PBL) during the freshman and sophomore years designed to accelerate positive attitudes regarding science, and accelerate development of their scientific research skills. In this session we will discuss the framework of the program, its implementation, results, lessons learned, and the future of PBL STEM Education.

Integrating Science into Local Food Production(E) (MS) (HS)

Thomas Paulson

Utilizing Morningside University's state-of-the-art greenhouse and facilities, teachers will explore aquaponics, hydroponic tower farms, and plant production. While in the greenhouse, they will experience how Morningside incorporates science into raising and harvesting local foods, including water testing, plant propagation, and soil fertility. The workshop will provide a comprehensive overview of plant production while offering a hands-on experience adaptable to any level of science.

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

Gus Elliott- Iowa DNR

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!

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.

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.