

TOMORROW
STEMS
FROM IOWA
GOVERNOR'S STEM ADVISORY COUNCIL

IOWA STEM TEACHER
EXTERNSHIPS
PROGRAM

2024 Northeast Iowa STEM Teacher Externships



Travis Angell

Bremer County Conservation

Tripoli, IA

Travis worked with the naturalist to organize, prepare, and run all of their summer camps. This work included their outdoor explorer program, picnics in the park and a variety of other activities to encourage families to get outside. During the outdoor explorers, he led a variety of activities such as canoeing, kayaking, fishing, outdoor cooking, fire starting and many others with kids ranging in age from preschoolers to middle schoolers.

“One of my favorite aspects of the externship is being able to talk about real-world science in the classroom. We talked a lot in my classroom on science is in everything we do. It is not just a class you take in school and then goes away.”

-Travis Angell, math and science teacher at Waverly Shell Rock Middle School



Neal Bentley

Gemini Incorporated

Decorah, IA

Neal worked primarily in the Pattern Shop, where individual computer artwork files are transferred onto polymer film, developed into a pattern, and sent to sand-cast molding in preparation for a molten pour. The process of developing the polymer film taught Neal how to operate (and clean!) four different machines in order to prepare the product for the next stage in the manufacturing process.

"I was struck at how calm, helpful and reassuring my team was, which was a reminder that as a high school instructor, I too need to practice and model patience with my learners"

-Neal Bentley industrial technology teacher at North Fayette Valley



Bailey Bergman

Iowa Lakeside Laboratory

Milford, IA

Bailey was part of the team that ran summer camps for students preK to 9th grade. As part of her duties she created activities that help campers learn about nature and explore the world around them. Bailey has gained experience in outdoor education, collaborative teaching, and is learning about Iowa's various ecosystems.

"I am the only high school science teacher at my school so I am used to doing a lot with little help. It was great to have a team to bounce ideas off of and rely on. I can't wait to continue to collaborate with my team!"

-Bailey Bergman, science teacher at West Central Community School District



Dawn Colsch

Effigy Mounds National Monument

Harpers Ferry, IA

Dawn's time was spent supporting the interpretation, and natural and cultural resource teams. Her main project was to develop a trail brochure for the Yellow River Boardwalk. You could also find her in the visitor center sharing information with the visitors and serving as a cashier in the park store. Her favorite experience was assisting the USGS as they studied and assessed the health of the Yellow River.

"The most impactful thing about my summer was the benefit of being close to home, to a place that I thought I was very familiar with, but then coming to the realization that I have been taking for granted something that is a beautiful part of my community.!"

-Dawn Colsch, science teacher at MFL-MarMac Middle School



Joshua Eaton

Geater Machining and Manufacturing

Muscatine, IA

Joshua made critical refinements to high-tolerance parts in the drill press department, gaining valuable experience in precision manufacturing. Additionally, he worked on sheet metal fabrication projects and had the opportunity to shadow CNC machine operators and programmers.

"It was amazing using all of the different tools to design and build a little toolbox. Another really amazing experience was time that I got to spend working with SolidWorks. SolidWorks is a CAD program that is used by many professionals."

-Joshua Eaton, industrial technology teacher at College Community School District



Cassidy Frana

Winneshiek County Conservation

Fort Atkinson, IA

Cassidy taught lessons about nature and the outdoors at Discovery Camp. Cassidy prepared lessons about various topics including shelter building, predators, prey, camouflage, orienteering, geocaching, and how we can use all five senses to experience nature to teach to grade school students. Her contributions will extend the list of lessons available to schools and other groups through our education outreach program.

“Knowing students’ interests opens the door to a lot of engaging material. Showing students that you can apply your content to their interests will, at the very least, keep them engaged, and may even inspire a love for learning new things.”

-Cassidy Frana, math teacher at South Winneshiek Community School



John Hubbard

Iowa DNR - Big Marsh

Parkersburg, IA

John made multiple trips to check and water the goats that were busy eating away invasive plants and trees. He would also check and maintain the electrical fence. John was also involved in field work such as discing, cultivating, and planting for future food plots or prairie ground.



“Within my host site, the employees there have to be able to do it all. They must be familiar with electrical, chemical, mechanical and basic science skills to be able to be successful in this setting.”

-John Hubbard, teacher at Waverly Shell Rock Middle School



Jason Lang

Tallgrass Prairie Center

Cedar Falls, IA

Jason assisted with transplanting prairie species to growing plots, maintaining those plots and harvesting seed as it matures. He also assisted with various research projects, had the opportunity to participate in prairie learning workshops, visit and collect seed from remnant prairies and develop a management plan for the acres of reconstructed prairie around the Cedar Falls High School.



"This experience has rekindled a love of learning for me. We could and should do a better job to let teachers develop professionally in a way that is energizing and leads to great experiences for our students!"

-Jason Lang, science teacher at Cedar Falls High School



Tallgrass Prairie
CENTER

Madyson Larson

Clayton County Development Group

Elkader, IA

Madyson updated tourism flyers. Some updates included a new, modern look, QR codes that led to short videos of their potential visit, and ensuring an accurate list of businesses/locations. These flyers were then used for visitors and sent to different tourism bus companies. These companies then had physical copies of places that they could suggest that visitors see and activities to do.



“Embracing change! Throughout our careers as teachers, we are told to remain flexible to better deal with what comes our way. This is seemingly true for workplaces outside of teaching. Throughout my externship, we had to run with the punches and be open to changes needed by the many board/committee members.”

-Madyson Larson, middle school teacher at MFL-MarMac Community School District



Emily Neal

Iowa DNR, Decorah Fish Hatchery

Decorah, IA

Emily participated in all aspects of hatchery work, including fish culture and distribution, stream and habitat management, water quality testing and protection, as well as other duties consistent with the operations and maintenance“



“Within the scope of my work at the hatchery, there is a lot of science and math content that we utilize almost every day. Including understanding the life cycle of trout, habitat identification, and water quality-related content. We take samples of fish almost every other day, this utilizes both math and science skills in averaging and understanding sample sizing.”

-Emily Neal, science teacher at Postville Community School District

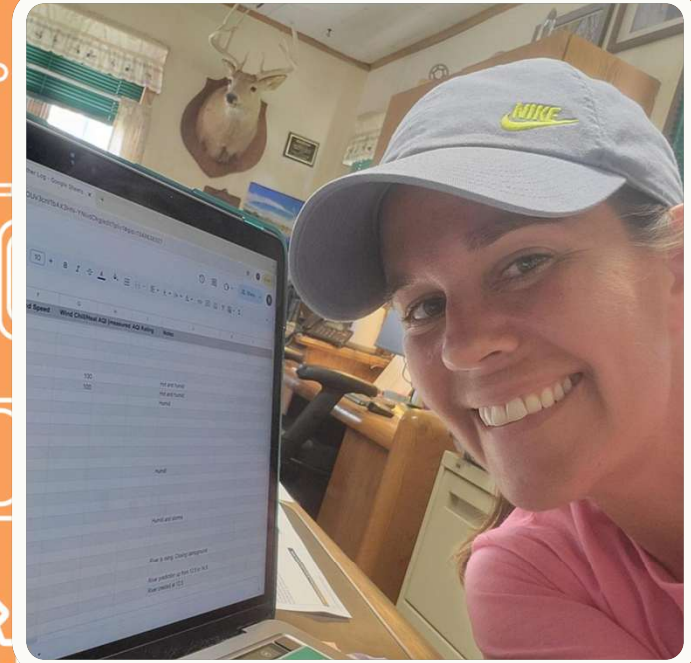


Valerie Pickett

Iowa DNR, George Wyth State Park

Waterloo, IA

Valerie worked on is compiling past weather and climate data from in order to look for patterns that may be contributing to the comeback the blue spotted salamander. She shared her findings with her team as well as the Henry Doorly Zoo who is studying the species. She also helped update signage with the main languages spoken by park users.



“The most impactful aspect of my Externship was all the different individuals that I met while in the field. It was excellent to network with so many knowledgeable people and it has gotten my wheels turning for how to better teach some of the standards in my science class. I am excited to rework my curriculum to include all the things I have learned throughout this experience.”

-Valerie Pickett, science teacher at Denver Community School District



Sarah Plaht

Northeast Iowa Community College

Calmar, IA

Sarah main initiative was to add content to Principles of Agronomy, Farm Business Management, and Survey of the Animal Industry. She hosted an NICC Work Day for colleagues to share ideas and best practices. Sarah helped with projects around the NICC farm including, beef inventory, Breakfast on the Farm, robotic maintenance, and genomic testing in dairy cattle.



“The key to building relationships with workplaces is to refer to them often and regularly. It does require some upfront work to set up field trips, guest speakers, or job shadows. However, once the experiences happen, they oftentimes experiences that students or workplaces won’t soon forget.”

-Sarah Plaht, agriculture teacher at MFL-MarMac High School



Dylan Shaffer

Jones County Conservation

Center Junction, IA

Dylan worked in as an outdoor educator and curriculum designer. He has made contributions to the educational programs by designing and instructing on outdoor skills like fire starting, kayaking and more. Dylan is also collaborating in the creation and design of K-12 field trip plans and aligning these trips and lessons with Iowa Core Science standards, 21st century skills, and Health and PE standards.

“One crucial point of teamwork and collaboration. Regardless of careers choices of the students, collaboration isn’t going anywhere and it is such a crucial skill for employers.”

-Dylan Shaffer, science teacher at Monticello Middle School



Larry Shonk

Buchanan County Conservation

Hazleton, IA

Larry worked with naturalists preparing and leading activities for the camps for local youth. Additionally he is involved with programs in the community and neighboring counties. These have included an insect education and exploration, a raptor interaction and geocaching with students from the Independence Mental Health Institute.

"I feel that the experience gives me something more valuable than a project to be done in the classroom next year. It gave me insights to a career that I can use to encourage my students interested in a STEM related career."

-Larry Shonk, science teacher at Isaac Newton Christian Academy



Jennifer Strohbahn

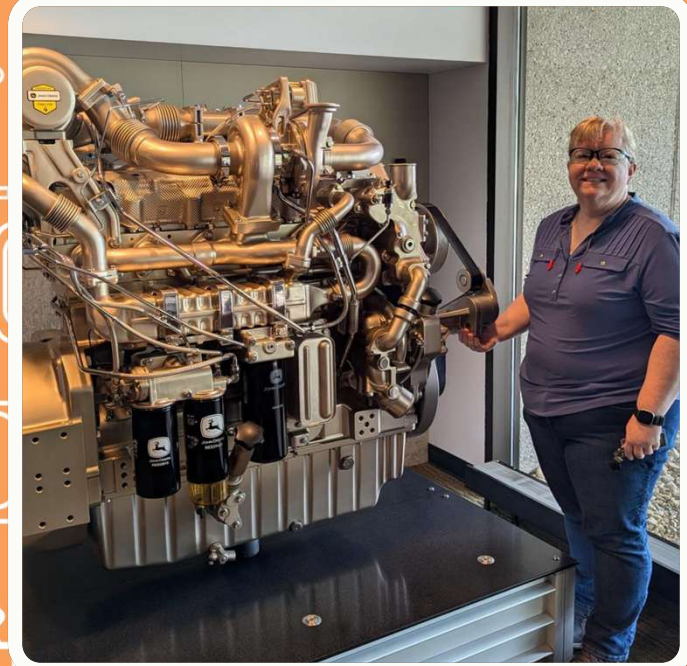
John Deere Engine Works

Waterloo, IA

Jennifer was able to assist the Factory Automation Department with curriculum development for their new process control software. During her time she was able to attend diesel basics class and learn more about how diesel engines function. Within the scope of her curriculum writing project, she was introduced to John Deere's AI. Data collection on the factory floor and helping the engineers in any way possible rounded out her experience.

"Many students are trying to find ways around a four year degree and John Deere has places for all levels of education and has programs to help with education if it is required."

-Jennifer Strohbahn, science teacher at Gladbrook-Reinbeck Community School



JOHN DEERE

Karen Van De Walle

Iowa DNR - Sweet Marsh

Sumner, IA

Karen learned how to run equipment planting corn, and soybeans, and watching sunflowers and other crops get their start on several plots of land for wildlife. She also replaced the signs that identify the boundary of the Wildlife Refuge. She started working with banding birds and the highlight was getting to see a sandhill colt get a band. She also mowed a tree planting which allows the trees they want, to grow with less competition.

"You have the opportunity to be in nature for the rest of your life, learn how to recreate responsibly and it will pay you back in dividends."

-Karen Van De Walle, agriculture teacher at Denver Community School District

