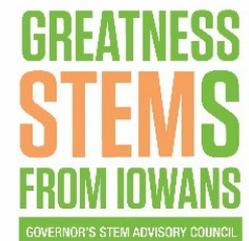


2021 Iowa STEM Teacher Externships

Extern Yearbook



Bailey Bergman

Buchanan County Conservation

Hazleton, IA



Bailey worked at Fontana Interpretive Nature Center with their naturalists, helping to run nature day camps. She also developed lessons for Envirothon, a national environmental science competition for high school students, and identified ways the naturalists can help teachers bring this amazing program to their students. Other duties included feeding program animals, helping with planting projects around the park, and other jobs a naturalist would normally do.



"I think the biggest thing for me to keep the connection with Fontana is designing field trips that bring us out here more than once. We could do data collection and then come back out to present or implement a solution to an issue. I know I will definitely be keeping Fontana in mind when coming up with activities."

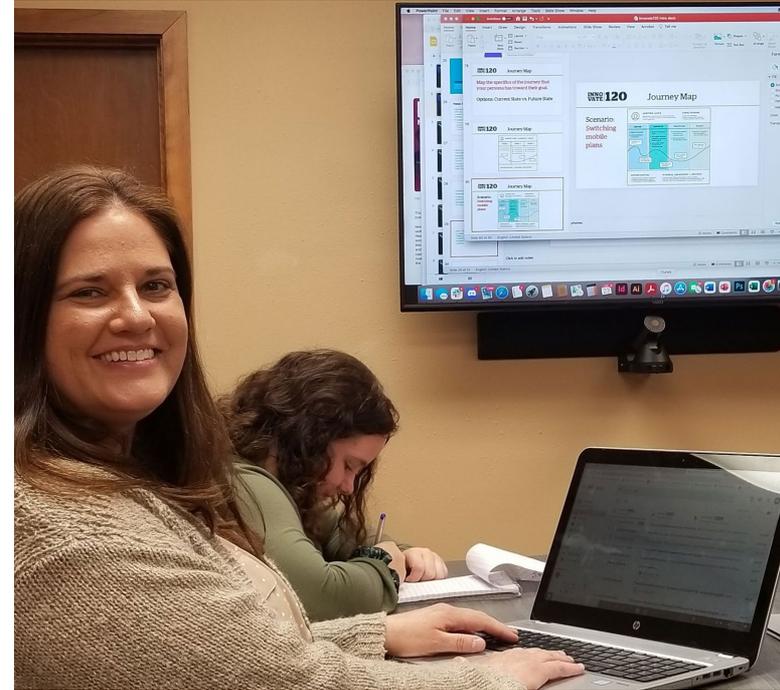
--Bailey Bergman, science teacher at West Central School in Maynard

Jennifer Buckwalter

Innovate 120

Maquoketa, IA

Jennifer is assisting with communicating real companies' goals and deadlines to the four teams of high school interns at Innovate 120. She provides guidance to the students, motivates team members and assesses performance. She keeps management updated on the teams' performance. Jennifer will take what she is learning and develop many ideas to make her classroom more real-world.



"I try hard to relate content to the real-world and show students there is real-world meaning behind the different contents they are given. After my last externship, I did add things such as having students present more, talk to people more if it was either in person or over the phone. I even challenged my business club members to do more of these things too."

Matt Cook

Iowa DNR

Miles, IA

Matt's responsibilities consisted of assisting in the maintenance of habitats and food sources for both harvestable and non-harvestable wildlife. He also banded Geese and Doves, and worked on the placement of Barn Owl nesting boxes, Barn Owls being an endangered species in Iowa. He learned quite a bit about how much work goes into keeping Iowa's game populations thriving and helping the indigenous populations maintain their numbers.



"The chance that someone would film me flipping into the water, get mauled by a stressed goose, was in the back of my mind some of the time, and I realized that many of my students probably feel the same way in my classroom. Banding geese on the Mississippi is one of the greatest experiences of my life and not because of the birds and what I learned about them but what I learned about myself because of the support of the people around me."

--Matt Cook, science teacher at Bellevue Community School District

Mark Drier

GMT Corporation

Waverly, IA



At GMT, Mark helped improve production, quality and safety initiatives set forth by GMT and its customers. Mark observed machinists to understand the parts flowing through the area and identified ways to help the operators work in a safer and more effective manner while meeting daily production goals. He also participated in new employee training where new hires can earn a higher certification level in order to increase their pay while working at GMT.



“Once you leave the education silo, you are now in the workplace silo and learners are out on their own. By bringing the workplace during education you are doing the community, the school and your students a gift that would promote the fact that education skills should be used in the workplace.”

--Mark Drier, math teacher at West Fork Schools in Sheffield

Megan Hamm

Iowa DNR at George Wyth Park

Waterloo, IA



Megan collected data at the park which included creating different types of surveys for the park guests. The park will use the data to better understand what guests use the park for and to improve different aspects of the park.. Another project was updating the kiosks or information stations located throughout the park. These kiosks have QR codes guests can scan to learn more information about different aspects of the park from the campgrounds to the trails. In the kiosk, there will also be background information on the tree project George Wyth recently did along with wildlife information guests could see while they are at the park.



“After doing the externship previously, I have seen how important soft skills are within the workplace. Because of what I have seen during my externship, this last year I implemented 21st Century Skills in my classroom.... Overall, I can tell that this is helping my students prepare for the future.”

--Megan Hamm, science teacher at Denver High School

Margaret Hogan

Buchanan County Conservation

Hazleton, IA



At Fontana Park, Margaret participated in outdoor activities, ranging from clearing and planting prairies to exploring ways to recycle trash into usable items. Her duties included caring for animals at the Nature Center, assisting with outdoor camps, and developing a workshop for teachers based on the BEETLES environmental education program. These experiences will help her educate her students to be more conscious of the positive impact that they can have on their environment.



"I think that going outside one's comfort zone is a workplace skill that we teachers should model and encourage our students to engage in more often. This Externship and past Externships have certainly provided me with this opportunity, as well as the opportunity to meet some amazing people."

--Margaret Hogan, science teacher at Beckman Catholic High School in Dyersville

Sam Howard

Jackson County Conservation

Maquoketa, IA



Sam helped Naturalists with fishing, geocaching, canoeing, and kayaking activities in the multiple summer camps they have at Hurtsville Nature Center, including taking the campers to Maquoketa Caves for some spelunking adventures. He also helped complete an inventory of native prairie plants on several remnant hill prairies. Sam also created several interpretive signs at the center and Prairie Creek Recreation Area.



"[Skills and content] is a delicate balance. Too much focus on one or the other can burn students out. Kids get tired of spending too much time on one or the other. A blended learning approach is definitely the way to go. PBL really lends to this approach. Plus it allows students to dig deeper into the things they are more passionate about."

--Sam Howard, science teacher at Northeast CSD in Goose Lake

Brad Johansen

Iowa DNR

Decorah, IA



Brad was immersed in all facets of operation of the Chuck Gipp Fish Hatchery. He stocked fish in streams throughout N.E. Iowa, which included weighing, loading, unloading and putting fish in streams. He took part in feeding fish twice a day and maintaining the raceways for optimal fish health, which included the non-technical (powerwashing) to the technical. (taking D.O. readings and flow rates). He also participated in electroshocking for population counts, stream population restructuring, catfish netting, turtle traps, access improvements, water quality analysis, etc.



“Just by talking with the Hatchery and Fisheries staff here in Decorah they are now more aware of the projects that can be done by Decorah High School. The industrial tech program for example has commissioned work for many organizations and business in town. That opportunity to do work for the hatchery in such a public place with high expectation for the end product is very real world.”

--Brad Johansen, science teacher at Decorah High School

Jason Landa

Innovate 120

Maquoketa, IA



Jason's duties included helping set up the technology and re-gearing professional materials for high school level students. He also was a project manager, making sure that the students were applying the lessons from the director and the guest experts, maintaining progress on the projects, and helping the students have a deliverable to show real clients their solution to their design problem.



"I have found that the more students interact with actual industry professionals, the more excited they get and the more relevant they feel their task is to actual industry. High school students have very short memories when it comes to "why" their tasks are important and "how" their tasks relate to the real world answering their question "When am I going to need this?""

--Jason Landa, computer science and math teacher at Pleasant Valley High School

Travis Pilch

Lee County Conservation

Montrose, IA



Travis helped develop educational materials and public outreach programs regarding native freshwater mussel species and native prairie plants. Climax Molybdenum Company of Fort Madison, Iowa, in cooperation with the Lee County (Iowa) Conservation Board, sponsored the Lee County Conservation externship efforts this summer.



"I prefer to design lessons that either start with (or incorporate along the way) student interests. At my rural school their interests are often career related, so my work is done in that regard--two birds with one stone--and everyone is happier due to student ownership of, and therefore superior engagement with, whatever we are learning. "

--Travis Pilch, science teacher at Easton Valley High School in Preston

Chet Reagan

Iowa DNR at Sweet Marsh

Sumner, IA



Chet worked and learned from the Biologist and Wildlife Management Technicians that make up the Sweet Marsh Wildlife unit. While there he planted food plots, captured and banded Canadian Geese, Mourning Doves and Wood Ducks. He also explored the giant science lab that are the wildlife management units. Chet participated in the day-to-day activities of mowing grass, maintaining hardwood tree plantings. and engaging in many learning activities and conversations with his co-workers.



David Sattgast

Iowa DNR

Manchester, IA



David gathered data for the fisheries management team to help them with their long term management plans, and assisted in the rearing of trout for the production team. Another summer project was to test the effectiveness of an ultraviolet filtration system on reducing mortality in eggs and fry due to an aquatic fungus. All of these experiences will help David lead his students to the big thing in science education - answering the question, "Why is this happening?"



"I am rapidly realizing how much this fish hatchery is data driven. In order to keep (at the beginning of the week) 375,000 trout alive and in good health, you can't leave a lot up to chance. Incoming water quality has to be checked. They supersaturate the water with oxygen before it goes to the fish. Feed rates need calculated, mortality rates monitored, treatments devised if mortality rates are outside of established ranges."

--David Sattgast, science teacher at North Linn High School in Coggon

Stacey Sigwarth

Mississippi River Museum and Aquarium

Dubuque, IA

Stacey has been assisting the River Museum's education department in developing lessons that connect classroom learning with the information (and animals!) the Museum has to offer. Their educational programs are shared with local schools, libraries, and other agencies throughout the area while also providing distance learning via Zoom to groups from anywhere! Stacey will also be working in the new MakerSpace housed within the Rivers of Innovation exhibit to facilitate STEM activities with museum guests.



“Although science and history are the two main subjects that come to mind when you think of a museum/aquarium, there is math happening behind the scenes-- and probably even more than I am noticing now! I've observed them calculating and portioning the amount of food an animal or tank needs to receive, collecting and analyzing levels in tank water, and considering the cost and budget of a program and supplies. ”

--Stacey Sigwarth, math teacher at Eleanor Roosevelt Middle School in Dubuque

Matthew Switzer

UNIT Tallgrass Prairie Center

Cedar Falls, IA



Tallgrass Prairie
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www.tallgrassprairiecenter.org

Matthew's externship role included assisting the head botanist in maintaining prairie planting plots, daily field weeding and watering, collecting seed samples, and assisting with other management of the prairie plantings. Matthew learned a great deal about not only the botanical and genetic intricacies of native prairie plants, but also the management of working with government programs, schools, nonprofits and grant programs.



"I think this is so important for elementary students- to understand that we WILL fail, but how we can use that to propel us towards a success. Also, I know that students that feel safe in a learning environment are more apt to share their thinking- similar to what we were doing in the field- and by sharing, we can generate new ideas."

--Matt Switzer, teacher at Aldrich Elementary in Cedar Falls