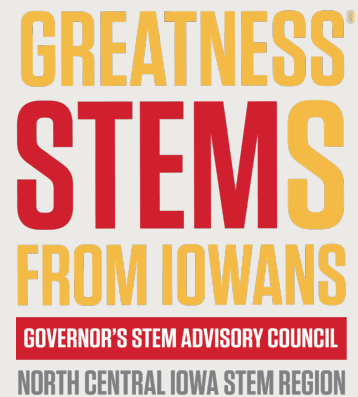




January, 2021

North Central STEM Region

Monthly News



In this Issue

Applications for Scale-Up Program Now Open

FIRST® LEGO® League Events Go Virtual

Future STEM and Manufacturing Careers in Iowa

2021-2022 STEM Scale-Up Application OPEN!

"Transformational for our students!"

"By offering STEM opportunities within the general classroom, we can guarantee equity in access to STEM learning."

"The part of the grant that to me makes the most impact for us is the ability for students to work in much smaller groups. Especially during this COVID pandemic when we are trying to keep them from mass huddling!"

The STEM Scale-Up Program invites educators to provide hands-on STEM units covering topics such as *robotics, physical computing, digital math, engineering design, biotechnology, career exploration and more*. Students who participate in the STEM Scale-Up Program perform better on the Iowa Statewide Assessment of Student Progress compared to students who did not receive STEM Scale-Up programming. They also have a more positive attitude about STEM study and careers, compared to students who did not participate.

Since 2011, the Iowa STEM Council has vetted high quality STEM programs available to Iowa educators in formal and informal education settings including libraries, after school programs and clubs, public and private schools, museums, etc. The programs are FREE and provide curriculum,

materials, and professional development.

The [2021-22 Scale-Up Program menu](#) has been released and educators can [APPLY](#) now thru March 5, 2021. Click on the programs below for more information:

[Codejoy Computational Thinking in Action with Micro:bit](#) - Grade levels: 3-12

[Nepris](#) - Grade levels K-12

[DreamBox Learning® Math](#) - Grade levels: K-8

[Fierce and Fearless STEAM Teacher Training](#) -
Grade levels PreK-5.

[FIRST® LEGO® League Explore](#) - Grade levels
K-4

[Ioponics](#) - Grade levels PreK-12

[Light and Shadow](#) - Grade levels PreK-3

[Project Lead the Way Medical Detectives](#) -
Grade levels 6-8

[SoapyCilantro](#) - Grade levels 6-12

[Storytime STEM-packs™](#) - Grade levels PreK-2

[Teaching Energy Transformations and Energy
Sources](#) -Grade levels 3-12

[VEX IQ](#) - Grade levels 5-8

FIRST® LEGO® League Season and More Goes Virtual

Guest Article by Camille Schroeder

Engineering Community Outreach Programs Manager

Iowa State University

North Central Iowa STEM Advisory Board Member

There's lots happening in Iowa State's Engineering Community Outreach despite the fact that so many events have been put on hold during the pandemic. Situated in the College of Engineering on the ISU campus, this unit has been creating STEM opportunities for Iowa youth with a focus on engineering, for nearly 20 years, through its Iowa State Engineering Kids (ISEK) programming including leading Iowa's FIRST LEGO League (FLL) programming. The ISEK FIRST LEGO League Explore Program was selected as a [2021-2022 Scale-Up Program of the Iowa Governor's STEM Initiative](#).



This year has proven to be unique for a unit used to engaging face-to-face with thousands of kids and families through approximately 100 events a year, but a shifted focus has led way to the creation of virtual events and online outreach instead. FLL teams across the state have been meeting both virtually and through safe social distancing to take part in this year's season. FLL Challenge teams have been working hard researching and coding their robots to master the season's challenge of how to get people up and moving. Teams are attending virtual qualifier events where spectators are welcome and encouraged to cheer via chat features for their teams. FLL Explore teams have been scheduling unique, individual review sessions with a panel of professionals who talk with them about their LEGO models, programming, teamwork and creativity. Teams get a unique opportunity to spend time talking in depth about how they have navigated their season and what they have learned.

Throughout the past year, the Engineering Community Outreach team has been creating and posting fun Stay at Home activities with complimentary deeper dives into the content and movies families can watch for further STEM inspiration. Also rolling out are all kinds of opportunities for students and families during national Engineers' Week, which will be held February 21 to 27. Free and open to the public, folks can take in daily webinars from ISU faculty to learn more about their career paths and passions in areas such as water quality, space travel, innovative design and cybersecurity. Look for STEM trivia contests on social media with prizes and register for an evening where families can do a live virtual engineering challenge. For more details on how to get a FLL team started, learn about events or how to volunteer, check out www.isek.iastate.edu.

Cultivating the STEM Talent Pipeline in Iowa

One thing we are passionate about in North Central Iowa is ensuring viable STEM career pathways right here in the North Central Iowa community. Back in November, NC STEM Region Advisory Board Member and President of Stellar Industries, David Zrostlik, discussed future careers in Iowa on the [STEM Essential 2 Podcast](#). Stellar Industries designs and manufactures large cranes that are shipped all over the world from Russia to Australia to South Africa. The company employs over 500 Iowans, and Mr. Zrostlik has put a lot of thought into the talent pipeline in Iowa. “STEM really just opens the door to a much broader world. Having those core STEM talents allows any student or any person to come into a company like Stellar Industries or any other company where there’s manufacturing, technology or laboratory work,” he says. He notes that businesses in Iowa are tackling big problems that require talented people: feeding the world, improving crop harvests, optimizing the transportation chain and keeping the economy running. “Having a technical background is essential in understanding what it takes to build and design those products,” he adds.

Many businesses in the manufacturing sector, including Stellar Industries, are proactive in Iowa in cultivating the talent pipeline. They work with community college apprenticeship programs, career centers and regional learning centers. Stellar Industries hosts mechanical and manufacturing engineering internships with Iowa State University and The University of Iowa. They also have an in-house welding school.

As automation increases, Mr. Zrostlik predicts the future workforce will need higher levels of training. Maintaining equipment requires computer programming skills and electrical skills. “The level of training required by our people on the floor is just going to increase as we go forward.” Mr. Zrostlik urges education leaders to make room for students to explore vocational skills and interests as well as emphasizing applied mathematics, simple machine coding, 3D printing and communication skills. “I’d love to see more students from Iowa, stay in Iowa and work for Iowa companies,” he says. To hear more about the manufacturing sector in Iowa and how companies like Stellar Industries are tapping into the STEM talents of Iowa, hear the full episode [HERE](#).

STEM REALLY
JUST OPENS THE
DOOR TO A
MUCH
BROADER
WORLD

- David Zrostlik

Live Twitter Chat - Thursday, February 11 at 7:00 PM

"Incorporating Pandemic Lessons in STEM Learning Environments"

HOW TO

In Twitter, follow @IowaSTEM
Use the reply icon to answer.
Use A1, A2, A3, A4 in your answer so we know which Q1-4 you are answering.
Tag all tweets with #IASTEMchat
Hashtag your grade level and subject
#elem #MS #HS
Hit refresh often to see new posts.

TOPICS

Are you using COVID as a teaching topic in the STEM classroom? Why or why not?
In what subjects have you used COVID as a teachable moment and how?
How receptive are students to learning about STEM subjects through the lens of COVID?
What challenges do you face with using the pandemic as a teaching tool and how can the STEM Council help?

GOAL: To connect STEM educators and communities for sharing ideas and resources that strengthen STEM learning experiences for all Iowans.

Calendar of Events

February 11
STEM Twitter Chat
7 PM @IowaSTEM

March 5
STEM Scale-Up Application Closes

March 26
NC STEM Region Advisory Board
Meeting 12-2 PM

Contact Us

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Ashley Flatebo, Garner

Sara Nelson, Ames

Michael Pedersen, Marshalltown

Kristle Percy, Mason City

Kathy Rogotzke, Mason City

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Camille Sloan Schroeder, Boone

Matthew Stephan, Fort Dodge

Kerry Weig, Nevada

Nancy Woods, Boone

Michael Young, Ames

David Zrostlik, Garner

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