As spring makes way for summer, and a long break looms, many parents in the Cedar Valley area may have already started wondering—and perhaps worrying too—how best their school-going children can spend the long days and weeks ahead. Fun is, of course, on the menu but wouldn’t it be nice too if they could learn something useful along the way? The combination of fun and learn that these parents seek for their children is a major feature of the STEM summer camps at the University of Northern Iowa.

“The idea is to help children learn about science, technology, engineering, and mathematics in an environment full of fun and excitement,” says UNI STEM Coordinator Marcy Seavey whose office organizes and oversees the camps every summer. “The ultimate objective is to generate interest and confidence about STEM subjects among elementary, middle, and high school students in the area so that, when it’s time for them to go to college and, eventually choose a career, they opt for a STEM field.”

“Our campers build and program robots, design their own art projects, and wind turbines,” she adds. “They gain skills that, as our past evaluations show, make them more confident in their STEM skills.”

Summer camps are by no means a novelty, Marcy says. “Different educational institutions and organizations in the Cedar Valley area as elsewhere in the country have organized summer camps for years now,” she adds. “However, these summer camps tended to be mostly about games and sports.”

Indeed, there were thematic camps at UNI and elsewhere, camps designed and developed around particular themes related to science and social studies.

“At UNI, different academic departments related to STEM would organize their own summer camps,” Marcy says. “Then, about five years ago, an initiative was taken to bring these camps under one umbrella with funding from the National Science Foundation’s Experimental Program to Stimulate Competitive Research (EPSCoR).”

The EPSCoR funding expired last year but the university decided to continue with the summer camps, in large part because the camps bring a diverse group of youth to campus.

“We ask the families to pay registration fees, which is about a fourth of the cost of attending camps,” Marcy says. “Then we supplement the registration fees with grants, sponsorships, and internal funding.”
Ten camps will be organized this year, including two that are exclusively for girls. Introduction to Robotics—For Girls has been around for a while now but New Dimensions in Art and STEM with 3D Printing will make its debut this summer. This camp is designed to help the participants develop skills in 3D modeling and printing. The campers will also have the experience of printing in plastic and sand.

Lights, Action, Magic! is the other camp designed for an exclusive group of campers. The camp, which explores STEM through an understanding of magic, is for middle and high school students who have communication disorders, and learning disabilities, or are considered at-risk/low literacy learners.

Besides Introduction to Robotics—For Girls, there will be three more camps on robotics where the campers work in team to design and build robots. In the Ultimate Sumo Robotics camp, the campers put together fighting sumo robots for a battle of power and wits.

Camp Multimedia and Mastering Multiplayers are two camps that gamers would love to be part of; the first one also helps campers develop their skills in 3D design and printing as well as photo and video for social media.

Last but not least, Exploring the Tallgrass Prairie is a camp where participants visit UNI’s prairie preserves to learn about plants and animals, and then create sketches and other art while at renewable Energy is Good, the campers learn about renewable energy, circuits, generators, and motors using solar panels, wind tunnels, and turbines. (For further details about the camps and registration, visit https://camps.uni.edu/).

Each camp is directed by a member of the UNI community with relevant expertise and experience. The campers also have access to UNI resources and facilities.

“At Ultimate Sumo Robotics camp, campers put together sumo robots for a battle of power and wits. A STEM Coordinator and the camp directors with the operation of the camps.

“The work for the summer camps adds not only to their UNI experience but also to their resume,” Marcy points out.

The community response to the summer camps has been generally very positive, she says. “These summer camps, as I said earlier, do offer an option for the parents as they plan the long break ahead for their middle and high school going children.”