

South Central STEM Hub Newsletter

GREATNESS
STEMS
FROM IOWANS

Drake
UNIVERSITY

SOUTH CENTRAL IOWA REGION GOVERNOR'S STEM ADVISORY COUNCIL

STEM Happens



The Hyperstream Team poses on Drake's campus.

Girl Scouts + Hoover + Drake = **Unstoppable STEM**

On October 28, an 11-person girls-only Hyperstream Team, coordinated through Girl Scouts, visited Drake University for a taste of college life.

A recipient of a 2016-17 Scale-Up Award, the Girl Scouts partner with a Drake LEAD 100 class that leads the Hoover HyperStream Club. Ngan

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Create a Makers Space

Want to start a
Maker Space in
your classroom or
school?

Try these simple ideas:

- Save recycled cardboard and plastic.
- Start a take-apart table.
- Try kinetic sand.
- Ask your hardware store to save an outdated wallpaper book.
- Connect with a lumber company or quilting circle in your area for scrap donations.
- Network with Iowa educators who started their maker spaces with a Making STEM Connections Iowa STEM Scale-Up Award through our [Agora STEM Learning Communities](#).

Hoang, Assistant Director of Girl Programming, provides support and oversees the overall initiative. The Drake students also planned and coordinated the campus visit.

Hoang is proud of the girls and their hard work. "They gain confidence in their abilities to positively use technology," said Hoang. "It's not often you see many all-girl teams competing in tech and robotics. We are proud of our girls for pushing boundaries and exploring their potential!"

Participants toured the facilities, met with an admission's counselor, spoke with Director of Athletics Sally Hatfield Clubb, ate in one of the dining halls and checked out freshmen dorms.

"They all felt excited about college and had many questions afterward, and I saw a lot of wheels turning!" said Hoang.



The team tours the Drake campus.

The Girl Scouts organization offers a wide variety of badges for girls K-12. Here are a few that make use of STEM areas:

- Naturalist badges: explore the outdoors
- Digital Art badges: build technology and computer skills
- Science and Technology badges: connect science topics
- Innovation badges: encourage problem solving using scientific methods
- Financial Literacy badges: prepare for a sound future.

For membership details or to learn how you can support girls by becoming a volunteer, visit www.girlscoutsiowa.org!

Have a great, inexpensive Maker Space idea? Please share with us on social media, listed below

Happy Holidays,
Dr. Sarah Derry,
SC STEM Regional Manager

Address:

SC STEM Hub
Drake University
School of Education-B6/7
3206 University Ave.
Des Moines, IA 50031

Phone: 515-271-2403



Email: scstemhub@drake.edu



Facebook: [South Central Region](#)



Twitter: [@SC Iowa STEM](#)



Instagram: [sc iowa stem](#)

Event Calendar:

Visit the [SC STEM Hub's calendar!](#)

The South Central STEM Region is part of the Iowa STEM Council. Click [HERE](#) to learn more about the state-wide program.

BGM Fest Photos
*More STEM Fests
Scheduled*



Sandy Hatfield Clubb, Drake Athletic Director, is a leader in the Million Women Volunteer movement and a powerful advocate for women and girls.

STEM Festivals

BGM STEM Fest Grows Community



Please visit us at our next STEM Festivals:



Last year, the Hub helped the BGM School District start a STEM festival. This year, they continued it with community support. Families from around the area came to spend the afternoon learning and making.

With 171 attendees and dozens of exhibitors and volunteers, the interactive activities drew great numbers for a second year in a row.

The Hub hosted a booth at the event. AWIM's Skimmer Kit incorporates principles of math, science and engineering. Using wind from a fan, student creations ideally traveled across the floor, like a sail boat might in the wind. Perhaps the most telling predictor of success is perseverance. Students who evaluated and redesigned had the best ultimate success.

January 27 – I'll Make Me A World Education Day

9 a.m. - 3 p.m.
Click [HERE](#) for more

info.

April 4 -- Science Center of Iowa
6-8 p.m.
Registration coming soon!

Crestview's Reynolds Creates Maker Space



Crestview Librarian Ann Reynolds, left, created various Maker Spaces for elementary students. Board member Mary Bontrager is pictured to her right.

Crestview Elementary School in West Des Moines was awarded a Making STEM Connections Scale-Up, which they used to enhance their existing Maker Space.

Over the past two years, Librarian Ann Reynolds has collected and assembled donations, parts of other projects, LEGOS, magnets building supplies, take-apart items, green screen materials and a host of other items. She's turned them into an accessible learning space for all students—and they love it!



Meet the maker of the longest traveling skimmer. It traveled over 18 feet, setting the festival record. Proof that great ideas can come from the youngest minds.

Maker Spaces

DIY costumes show creativity at **Ottumwa's Makerspace**

"It's an opportunity to play and learn," said Reynolds.

Students sign up to work in a particular area for 30 minutes; teachers can sign up for the space for a 60-minute lesson.

The SC Regional Advisory Board recently visited the space. Check out what they saw.





By Joni Nicholson

How do you get elementary students to come to school on a beautiful Saturday morning in October? Well, the idea of creating a costume and learning how to use a real sewing machine was just the right combination to get 50 students out of bed and back to school. They were attending a volunteer-run event called "Makerspace" which is part of a movement to get students interested in STEM careers and tap into kids' creative side. This event was offered to fourth and fifth grade students in the Ottumwa School District.

Elementary teacher-librarians, Joni Nicholson and Stacy Moran have done several Makerspace events using electronic snap kits, Makey Makey computer tools, robots, construction blocks and numerous other STEM related activities in the past. This time the two librarians decided to take a "low tech" approach and invite students to make their own costumes using everyday



We'd love to visit your Scale-Up. Please email to invite us to your school at scstemhub@drake.edu.

Volunteer TODAY!



items and material scraps. A recent Scale-Up STEM grant also gave several of the OCSD sites sewing machines and other tools that made this event even more enticing.

If the thought of school age kids using hot glue guns and sewing machines scares you, rest assured that the two teachers spent a good bit of time talking about safety prior to turning kids loose with these tools. With such a large number of students showing up for this event, extra volunteers (including other teachers and a local high school sorority group) were on hand to assist and supervise the students in this creative endeavor.

Moran and Nicholson both donate their time and many of the materials for their Makerspace. They also asked for material donations prior to the costume making project. Students were given time to look at the materials available as well as some costume ideas from Pinterest prior to digging into their individual projects. One entire room was dedicated to fabric choosing and pattern cutting. Other materials included: cardboard boxes, poster board, yarn,



feathers, foil, t-shirts, socks, gloves, etc.

Over two hours of cutting, gluing, trying on and in some cases, starting over, it didn't take students long to repurpose these items into unbelievable creations. A cardboard box and solo cups helped one girl turn herself into a human Lego block. Another participant made a creepy monster with a 3D hand reaching out of his torso. Capes, angel wings, Pokemon characters, superheroes and emoji faces were all popular costume themes. With such a wide variety of materials, no two projects were alike.

At the end of the session students were allowed to take all of their creations home with them. The best outcome, however, was the lasting impression that students had about this Makerspace session. Several students were very proud of the fact that they had used a sewing machine for the first time ever. Others commented on how much they accomplished with a glue gun. In fact, one boy asked enthusiastically, "Where can I go to buy one of these? I want to do this at home too!" Comments like that are exactly what Stacy Moran and Joni Nicholson like to hear. After all, the goal of the Makerspace is to generate excitement about STEM and bring out the "maker" in all participants.

Thank you to Joni Nicholson for the article and photos. Nicholson is



Amber Pargmann, pictured above at this month's BGM festival, volunteers in schools around the Ottumwa area. It's part of the John Deere-Ottumwa philosophy and her own personal mission. If she looks familiar, it might be because she's also on the SC Advisory Board.

If you would like to share your STEM enthusiasm with the community, check out these great volunteer opportunities!

- Create a STEM fest exhibit
- Volunteer at a STEM fest
- Share at a local career day
- Talk to a student group
- Judge a LEGO robotics contest
- Volunteer for Hyperstream
- Invite schools to visit you at work
- Donate to STEM endeavors
- Participate in our STEM book review
- Take an intern
- Offer a job shadow

Need more ideas or connections?
Contact Dr. Sarah Dery at
scstemhub@drake.edu.

Readers NEEDED!

a Teacher-Librarian at Eisenhower, Horace Mann, James & Wilson, Ottumwa Community School District. Initial project funding was provided by an SC STEM Hub Scale-Up.

If you'd like ideas for creating a Makers Space at your school, contact the SC STEM Hub: scstemhub@drake.edu.



Check out our new blog and encourage reading.

[Click HERE to check it out!](#)

Please email lisa.morlock@drake.edu if you'd like to participate in this review.



Events

Add these dates to your calendar!

- Dec. 1 -- [DMACC LEAD Challenge Begins](#)
- Dec. 16 -- [Iowa Space Grant Consortium Applications Due](#)
- Dec. 27-30 -- [CIE Robotics Winter Camp for Kids](#)
- Jan. 27 -- [IMMAW Education Day STEM Fest](#)
- Feb. 4 -- [Super Qualifier FIRST, Johnston John Deere](#)
- April 4 -- [SCI/SC Regional STEM Fest](#)

Spread the word about STEM EVENTS in your community!

Visit the [South Central STEM Calendar](#)

[To submit your STEM event, click here!](#)

SC Iowa STEM, 3206 University Ave, Des Moines, IA 50311

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