

South Central STEM Hub Newsletter

GREATNESS
STEMS
FROM IOWANS

Drake
UNIVERSITY

SOUTH CENTRAL IOWA REGION GOVERNOR'S STEM ADVISORY COUNCIL

The State of STEM

Spring 2018 STEM Event: Future Ready Iowa Summit



The Governor's Future Ready Iowa Summit hosted speakers, student groups, panels and much more. To learn more about Future Ready Iowa, visit their [website](#).

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Congratulations to all Scale-Up Recipients

Over the past few weeks, the Iowa STEM South Central Region awarded 216 educators with one of the STEM Council's Scale-Up Programs. Combined, the programs will impact over 15,300 students in the region during the 2018-19 academic year.

Over the next few weeks, recipients will be notified of professional development dates, which will occur from July-October.

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SC Regional Manager

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Visit our website:

On April 3, The Iowa Governor's STEM Council's operations team coordinated the Governor's 2018 Future Ready Iowa Summit at the Iowa Events Center in Des Moines. Designed to bring together leaders from business, industry, government and education, the event provided a forum for discussion and networking.

Future Ready Iowa's goal is to ensure 70 percent of Iowa's workforce have an education or training beyond high school by 2025. A strong STEM education, paired with innovation and communication skills, continue to guide the K-12 focus.

Click on each name below to link to a YouTube video of guest speakers, the governor and panelists.

- [Hadi Partovi](#), CEO of Code.org, who told his incredible personal journey to success and discussed the future of coding.
- [Brandon Busteed](#), Executive Director of Education and Workforce Development/Gallup, who gave an overview of current data and trending skills in the workplace.
- [Nicole Smith](#), Chief Economist for Georgetown University Center on Education and the Workforce, who provided an in-depth look at the importance of diversity and inclusion in STEM.

A number of other dignitaries were guests of [Governor Kim Reynolds](#), including Alex Acosta, United States Secretary of Labor; Asa Hutchinson, Governor of Arkansas; and John Hickenlooper, Governor of Colorado.

In addition to speakers, the summit included an expert [panel](#) and breakout sessions. The day closed with Governor Reynolds signing of the Future Ready Iowa Act (House File 2458).



scstemhub.drake.edu/



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!

Thanks to the SC STEM Regional Advisory Board Members for volunteering their time! [Click](#) to learn more about the board.

- BOARD PRESIDENT:
Robert Volp - West Des Moines
- John Arbuckle - Urbandale
- Mary Bontrager - Cumming
- Breanne Garrett - Ottumwa
- Mauree Haage - Oskaloosa
- Dr. Kari Hensen - Ankeny
- Jonathon Holmen - Ankeny
- Ronda McCarthy - Des Moines
- Tyler Myerholtz - Des Moines
- Amber Pargmann - Ottumwa
- Dr. Steven Sieck - Grinnell
- Stacey Singleton - Johnston
- Becky Wigeland - Indianola
- Laura Williams - Mt. Pleasant

**Dr. Peggy Whitson
Comes to Drake**



Drake hosted a reception for the Future Ready Iowa Summit in the Collier-Scripps STEM building. Pictured are Dr. Deborah Kent, Dr. Sue Mattison, Dr. Jan McMahon, Governor Kim Reynolds, President Marty Martin, Dr. Renae Chesnut, and Dr. Sarah Derry.

STEM Festivals

STEM at I-Cub's Principal Ballpark



TOP: Whitson presents President Marty Martin a Character Counts Coin that circled the earth 4,623 times. CENTER: Whitson's favorite thing to do in her own time? Look out the window. BOTTOM: Whitson explains her work in space with ISS photos.

"A very important quality at NASA is teamwork," said Dr. Peggy Whitson, commander of the International Space Station. "We risk our lives as a group. In the ground, the teamwork is just as valuable, too."

Whitson spoke to a full-house on April 13, from 1-2 pm. Approximately 325 students attended, along with scores of community members and Drake students, and everyone had lots of



On Thursday, April 26, almost 300 high students learned about science, technology, engineering and math through baseball.

Students rotate through three different workshops, offered by various local businesses, schools and organizations, including Polk County Conservation; Hy-Vee; Kemin; Iowa Air National Guard; Drake University Sports Medicine, Math and Virtual Reality; Bates Chiropractic Clinic; Des Moines Waterworks; and Iowa Cubs Media, Stadium Operations and Tech Booth.

A majority of the students attending the event come from Perry and Des Moines, two of the 12 low-income districts served by GEAR UP Iowa. GEAR UP, a federal program that prepares students and families to enroll and succeed in college, is administered by Iowa College Aid. Bondurant-Farrar also brought students interested in STEM.

Along with the SC STEM Hub, STEM at the Ballpark was sponsored by the Iowa Cubs, Des Moines Area Community College and GEAR UP Iowa.

Each year, the Hub looks for new STEM festival partners and venues. If you're interested in learning more, please contact Dr. Sarah Derry at scstemhub@drake.edu. Festivals are planned about a year in advance, but inquiries are always welcome.

questions. Here's a quick overview of the question-answer session.

Q. How do you sleep in the space?

A. There is a tiny sleeping compartment that fits a computer and sleeping bag. Whitson bungees herself into the sleeping bag to stay in place.

Q. How do you eat?

A. All the food is in bags. There's a Velcro spot on the table to put down a fork. Food is dehydrated or dried. According to Whitson, it works for mac and cheese, but not so much for veggies.

Q. How did you become an astronaut?

A. First, she went to graduate school. Second, she worked for NASA. During that time, she conducted joint research science experiments with them. After 10 years, she became an astronaut.

Q. What's your favorite thing to do in space?

A. Space walking. "It's the most physically and mentally challenging part of the job. And it's just so beautiful out there."

Drake Hosts Women in STEM Social



Event leaders include the Women in Math and Computer Science (WiMaCS) and

Inspiring STEM

I AM STEM:

Waukee's Caitlin Grow



Caitlin Grow hard at work in Waukee APEX's common area.

Across Iowa, schools face a STEM teacher shortage. With fewer high school and college students interested in pursuing degrees in STEM education, the Hub set out to find someone with a passion to teach. We found the incredible Caitlin Grow!

Grow first got interested in STEM through Waukee APEX's (**A**spiring **P**rofessional **E**xperience) Designing Communication Solutions course. The program is a recipient of a STEM B.E.S.T. Award from the STEM Council.

"The experience I had with the technology I used in that course encouraged me to continue my STEM path by next taking another APEX course, Developing

Web Based Technology," she said.

Grow now plans to major in secondary education. "I am pulled into this field because of the teachers I have had in the past, especially teachers in the STEM field."

Besides academic work, Grow manages the high school wrestling team, serves as a church volunteer, and works at a before and after school program with elementary kids.

Grow encourages all students to try STEM. "I think as long as you have the will and drive to learn and enjoy the STEM field you should do it. Instructors are very supportive, and if you feel that you need more guidance they are always there to help."

Chemistry Clubs, WiMaCS faculty advisor, Dr. Deborah Kent.

Drake University hosted its first Women in STEM Social on April 5. The night featured guest speakers, including Drake Provost Sue Mattison and Professors Deborah Kent and MaryAnn Huey. A dessert reception and tour followed the speakers.

"I wanted this event because I realized I knew very few women in STEM personally," said Margaret Chapham, Chemistry Club president. "I don't often meet women of other majors in my classes and felt like I was missing out on valuable conversations."

The social was coordinated by student leaders in Drake's Chemistry Club and Women in Math and Computer Science organization. Participants included guests from Mercy College of Medicine, DMACC, Pi515, Drake faculty, staff, and students.

"The best part of the night was getting to know the people in our specific STEM fields by playing icebreakers," said Elizabeth Rambhia, WiMaCS student leader.



Dr. Sue Mattison spoke to a full house.

With Grow's excellence in STEM and interest in education, the future outlook in Iowa's classrooms is bright.

STEM at Drake

DUCURS Event Grows Each Year



Dr. John Gitua, left of the sign, is pictured with DUSCI student leaders.

The 15th annual Drake University Conference on Undergraduate Research in the Sciences (DUCURS), hosted by the Drake Undergraduate Science Collaborative Institute (DUSCI) was held Thursday, April 12, 2018 in the Olmsted Center.

Coordinated by DUSCI Director and Associate Professor of Chemistry John Gitua, the event celebrated student oral presentations and poster presentations on current research projects by students and faculty. Participants included Urbandale, Waukee, Central Campus, and Hoover high school student presenters, as well as collaborating research from

Both Drake clubs and professors have presented at SC STEM Hub festivals and events. Dr. Sue Mattison serves on The Governor STEM Initiative's Advisory Council.

Urbandale's Bunce on Poster Research Event



Kathryn Bunce teaches biology at Urbandale High School and hosts the poster event each spring.

Why do Urbandale High School students take part in DUCURS?

It started when biology teacher Kathryn Bunce got the idea to host an original research event at her school. She reached out to Drake to see if undergraduate students might be interested in judging. Eventually, Chemistry Associate Professor John Gitua invited the best posters from Urbandale to present at DUCURS.

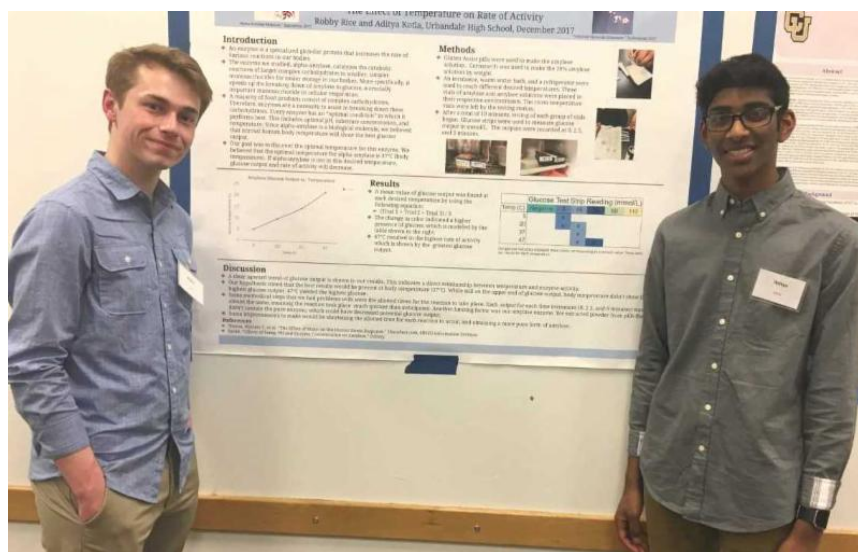
We asked Bunce for advice on how other schools could host a similar

ISU, University of Iowa, and Drake University students and faculty. Awards were given to the top presenters.

"Above all, the most encouraging part of this event is the breadth and magnitude of research that goes on," said Gitua. "It provides a practical experience before students complete their college work."

For several students, their DUCURS work has resulted in future opportunities, including one student who was invited to continue work at MIT. In recent years, the event has expanded to offer a similar opportunity to high school students.

"The more impact we can have on students at a younger age," said Gitua, "the more interaction and interest they'll develop in the area of science."



Urbandale teacher Kathryn Bunce's students Robert Rice and Aditya Kotta researched how body temperature impacts the output of glucose. "Our research is important," said Rice, "because everyone needs to know what is in their medication." Kotta estimated the two put in at least 10 hours of class time and Saturday work into the project.

Events

Add these dates to your calendar!

May 4 -- [Deadline Broadband Student Ambassador](#)

May 14 -- SC STEM Hub Advisory Meeting

event, here's what she had to say:

FIRST, give the students a few choices of experiments, but within parameters. For example, when organizing experiments for my Anatomy students, I gave them three data options - pulse, blood pressure, or lung volumes. They then were able to choose their independent variable that the believed may cause a change in the data point. Students created a wide range of experiments, studying how age groups, gender, involvement in athletics, or even stress impacted their chosen data point.

SECOND, if money is an obstacle, have students design their posters using multiple slides of Google Slides or PowerPoint. Printing of these posters can be done on a normal printer, keeping costs lower. Students then mounted these paper slides onto tri-fold boards to create the final posters. Printing larger posters can be done through your local AEA, if your budget allows.

FINALLY, make the poster fair "real" by inviting guest judges from college, universities, or the commercial sector. Students really step up their work when they know they will be sharing it outside of their classroom.

If you have further questions, please email Bunce at bunce@urbandaleschools.com or reach out to the hub at scstemhub@drake.edu.

Urbandale schools have received several Scale-Up awards and continue to expand STEM programming.

May 21 -- [Register for Biotech Summer Workshops](#)
June 6 -- [Teaching K-5 Science through Nature](#)
June 10-16 -- CASE Professional Development
June 11 -- ISU Teacher Research Experience
June 11 -- SC STEM Hub Advisory Meeting
July 2 -- [WFP Global Youth Institute Application Due](#)
July 22 -- [PLTW Core Training](#)

Spread the word about STEM EVENTS in your community!

Visit the [South Central STEM Calendar](#)

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



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