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UNIVERSITY
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GOVERNOR'S STEM ADVISORY COUNCIL

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June 2018

SC STEM Hub Newsletter



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Calendar: Calendar of Events

Social Media: Connect via social media with the links above.

Hashtag: #STEMinYourWorld

Improve the Odds of Receiving a STEM BEST

Past STEM BEST reviewers came from education, business, non-profits, and the community at large. They volunteered to read applications on their own time. Every school has good ideas, but what makes a stand-out?

Here are a few tips to consider:

1. **Write to the rubric.** Evaluators must use a rubric score proposals. If a section isn't clearly addressed, points will be lost.
2. **Make sure all entities are involved at all stages:** teachers, administrators, students, parents, community members, business and industry, post-secondary institutions.
3. **Reach out to groups still under-**

Summer Scale-Up Update

A majority of the Hub's resources goes to providing Scale-Ups to area educators. Scale-Ups are awards of materials and professional development.

Scale-Ups for 2018-19 have been awarded and training has runs through October. Click **HERE** to see for the latest dates.

If you have questions about Scale-Ups

represented in STEM: rural, refugee, urban, women.

4. **Invite a neighboring district** to the table. Demonstrate your willingness to collaborate.
5. **Show cross-curricular ties:** language arts, fine arts, music, social studies, service.
6. Have your partners be **specific in their letters of support**.
7. Explain **existing elements** already in place.
8. **Communicate** your footwork. What contacts have you made? What processes are in place?

or training sessions, please contact **Dr. Sarah Derry**.

STEM BEST Information:

If you'd like to reach out to Iowa's STEM BEST recipients, please find contact emails on the **Iowa STEM website**. Click the award year to read about each program and find the contact email.



Photo courtesy of Kemin Industry.

Extern Abby Tibbetts Thrives at Kemin

Abby Tibbetts loves a good challenge. She has taught both high school and college, she has three kids under the age of 5, and she's married to a principal. This summer, she's adding research scientist to her resume.

Through Iowa STEM's Teacher Externship program, Tibbetts is working with Kemin's Nutrition and Health division. For six weeks, she'll spend her days completing lab work, attending meetings and researching project information. Next fall, she'll take what she's learned back to the classroom and share it

Is a Teacher Extern in Your Future?



Vice President Laura Wonderling (learn more about her in the video above) heads the research and development division of Kemin Industries. She facilitates the extern program and recommends other businesses consider doing the same.

"I think this program is important because, when I was growing up, I never knew what careers were out there," said Wonderling. "I want students to see all of the options available to them. It's good for Kemin, for the students, and for Iowa."

If your business needs extra help with a project, consider taking an extern. Here are Wonderling's suggestions for getting started:

1. Find a short project an extern

with her high school students in the Van Meter Community School District.

The Extern

Tibbetts applied for the externship experience and was placed at Kemin Industry because of her science expertise and interest in health.

"When I first got the assignment," Tibbetts said, "I was a little worried. It was pretty chemistry-heavy [she doesn't teach chemistry right now], but I've been surprised at how the skills translate so easily into physical science. There's a definite link in how the chemistry of a molecule impacts the physiology in the human body."

Even while working in the lab, Tibbetts often thinks of her students. "I jot down ideas in a separate notebook. Things I want to tell my students about. Things I want to teach."

The Host

Steve Wobser, her Kemin host, has been around education his whole life, too. His wife and mother are teachers, and his dad ran an educational supply store. He's happy to have Tibbetts help in the lab and has volunteered for the program twice. His goal is to have a meaningful, completed research project by the time Tibbetts leaves.

"This was a great phrase of the research to bring someone new into it," said Wobser.

Tibbetts is enjoying her project at Kemin: "The day here goes so fast. When I'm in the lab, I lose track of time."

And that's a summer day well-spent.

The Details:

- full-time hours
- six-week temporary summer positions
- hosted by local businesses and agencies
- geared for secondary STEM teachers
- paid stipend
- teacher mentor provided
- teacher host provided
- one graduate credit through UNI

If you'd like more information on the Externship Program, please visit **Iowa STEM's website**.

could complete in a short amount of time.

2. If the project is ongoing, find a tangible chunk for the extern to complete.
3. Choose a non-critical project to assign.
4. Since training is often involved, choose a project that involves some repetition.
5. An company employee might finish a project in half the time, so choose something with that can typical be handled in 3 weeks.

Tibbetts Takes Chances



Above: A tweet from Tibbetts's first day on the job.

Abby Tibbetts experience might just inspire you to try an externship. Check out her insights and advice:

- The time commitment may keep some teachers from applying, but I've found this experience to be energizing. I haven't lost my summer break. It's still a metal break from the classroom, and it will make my teaching better.
- I wasn't sure I had the chemistry background to be successful at Kemin, but I took a chance. That's what I really want my students to do. To step out of their comfort zone and challenge themselves.
- I'm impressed by the company's vision. Everything is done with intention, from the building's design to the way they put employees first.

- The company is built upon the premise of servant leaders. The owners are in their 90s and still come to work everyday. They want to keep their company strong while making Des Moines, and all of Iowa, a better place.



Pictured above: Jonathon Holmen, Emily Fuerst, Bri Steffen, Bob Volp, Amber Pargmann, Dr. Sarah Dery, Rhonda McCarthy, T.J. Meyerholtz, and Dr. Stephen Sieck. In June, the SC STEM Hub Advisory Board met at Kerrin Industries to learn more about their extern program.

In Appreciation of South Central Regional Board Members

Thank you to all of our board members for your service to Iowa students. We'd like to especially thank those rotating off the board in July: John Arbuckle, Dr. Steven Sieck, Stacey Singleton, Robert Volp and Becky Wigeland. Volp served as the president this past year.

Members come from a variety of backgrounds and are chosen by the Governor of Iowa. If you'd like to learn more about the board or apply to become a member, please visit our [website](#).

The 2017-18 Board

John Arbuckle

Du Pont-Pioneer (Urbandale, IA)

Mary Bontrager

Greater DM Partnership (Cumming, IA)

Breanne Garrett

William Penn Professor (Oskaloosa, IA)

Mauree Haage

Twin Cedars School District (Oskaloosa, IA)

Dr. Kari Hensen

DMACC (Ankeny, IA)

Jonathon Holmen

McGough Construction (Ankeny, IA)

Ronda McCarthy

St. Theresa's School Teacher (Des Moines, IA)

Tyler Myerholtz

Ryan Companies (Des Moines, IA)

Amber Pargmann

John Deere (Ottumwa, IA)

Dr. Steven Sieck

Grinnell College (Grinnell, IA)

Stacey Singleton

Johnston Council (Johnston, IA)

Robert Volp

Wells Fargo (West Des Moines, IA)

Becky Wigeland

National Balloon Museum (Indianola, Iowa)

Laura Williams

Greater Prairie AEA (Mt. Pleasant, Iowa)

How to Be a Better Math Role Model



Above: Dr. Maryanne Huey, Drake Math Education Professor; Dr. Christa Jackson, ISU Math Education Professor; and Dr. Heather Bolles, ISU Math Education Professor.

Dr. Christa Jackson is Passionate about Math Equity

Some Iowa middle school math teachers are hard at work this summer, engaged in a professional development opportunity that will help them with strategies to engage ELL (English as a Second Language Learners) and African Americans.

The program targets Des Moines teachers, and reaches out to other communities with diverse learners, including Perry, Ottumwa, Marshalltown, and Urbandale.

Created by ISU Professor of Math Education, Dr. Christa Jackson, it's based on Dr. Jo Boaler's Growth Mindset and Math work. Jackson built a team of colleagues, including Dr. Maryann Huey of Drake University and several others from ISU, including: Carrie Jergenson, Dr. Heather Bolles, Ashley Delany, Dr. Molly Applegate and Dr. Jiyeong I.

"Nationwide, there's a decline in math scores in African-American and ELL students," said Jackson. "This PD teaches strategies that help both of those populations, but, as it turns out, they are best practices to use for all populations. "

Algebra has become a gatekeeper to success in higher level math and science. "Students who are not successful with these concepts will miss out on educational and job opportunities," said Jackson. "A lot of doors automatically close."



Above: Dr. Christa Jackson

Whether you're a teacher or parent, consider Dr. Christa Jackson's advice as you help your students or children succeed in math.

- Avoid saying: "I was never good at math."
- Use language like: "Let's figure this out."
- Realize certain beliefs and stereotypes may influence how you interact and speak with a child.
- Show that you trust them and know they can learn.
- Give students the agency and power to control their math classroom and potential.
- Empower community by encouraging collaboration and discussion.

Jackson recommends a book by Jo Boaler called *Mathematical Mindsets*. It can help parents and teachers find words and ways to talk to students about math.

For a free math resource based on Boaler's work, visit Youcubed.org.

In the meantime, Jackson suggests considering the fixed versus growth mindset. She provided a simple interpretation of those definitions.

"With the fixed mindset, a person tells him or herself they can only do certain things in certain ways," said Jackson.

"With the growth mindset," she continued, "the person says: 'I'm open to new ideas and willing to try new things. I can be successful, even if some of my attempts fail.'"

Math Madness @ Forest Avenue Library

During the training, teachers create unit plans, work in teams, and discover new resources. Jackson's goal is to positively impact teacher instructional practices.

"It starts with the teacher," said Jackson. "Encourage using multiple ways to solve a problem. Invite discourse, or math discussions into your classroom. Build math confidence by establishing a belief in what the student can do."

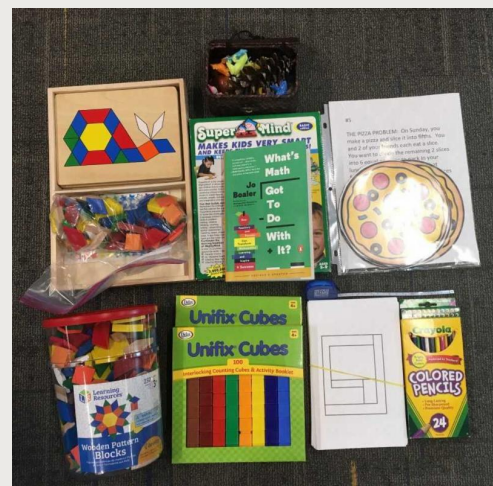
Targeting math teachers in grades 6, 7 and 8 with this beneficial training works, and Jackson has proof.

The program has:

- improved math test scores in Des Moines public school students
- inspired teachers to change practices, thus changing teacher-student relationships
- made teachers more cognizant of equity issues
- established a social network for participating teachers to have ongoing support.

"All teachers want what's best for their students," said Jackson, "but things we do subconsciously may hinder that. This type of training ensures teachers can help all students be successful."

Jackson is about to lose her funding for this important work, but she is seeking other sources. Funded or not, Jackson's passion is contagious. There's no doubt her influence, and the influence of those teachers in her PD, will continue to change the lives of Iowa's most under-served students.



In partnership with the Forest Avenue Library, the Hub will host a hands-on, interactive math event!

Math Madness.

Date: July 9

Time: 2-3 pm

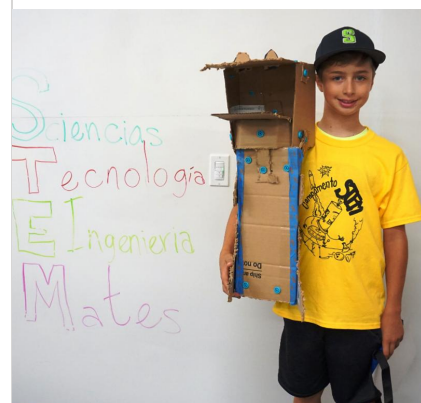
Location: 1326 Forest Ave., DM

** free, open to all with a focus on K-5 **

Calendar of Events

Calendar of Events

- July 9 Math Madness
- July 9-13 PLTW CS Innovators and Makers PD
- July 10 Making STEM Connections PD
- July 13 STEM in Action
- July 16-20 PLTW Principles of Computer Science PD
- July 19 STEM in Action
- July 20 Pint Size Science PD
- July 20 Making STEM Connections PD
- July 25 Engineering Everywhere PD
- July 30-August 1 Power Teaching Math
- July 30 Making STEM Connections PD



Drake hosted a STEM Camp with Spanish Immersion teachers from

July 30 Pint Size Science PD
August 18 Ramps & Pathways

[Click here for more events and details.](#)

*Des Moines St. Anthony School.
Teachers checked out Hub kits and
created programming around them.
This is one of our favorite photos
from the week. It features the
MakeDo cardboard construction kit.*

