

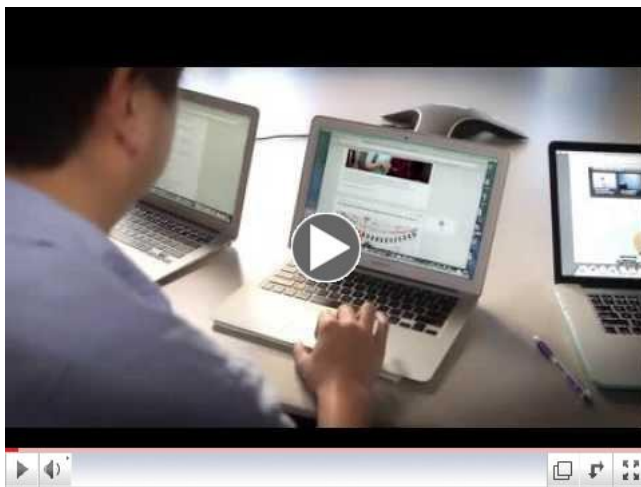
South Central STEM Hub Newsletter

**GREATNESS
STEMS
FROM IOWANS**

Drake
UNIVERSITY

SOUTH CENTRAL IOWA REGION GOVERNOR'S STEM ADVISORY COUNCIL

STEM Hits the Road!



Watch Iowa's STEM Public Service Announcement, "Greatness Stems from Iowans", featuring Pinterest's Ben Silberman.

Lt. Governor to launch a series of STEM Town Hall Meetings

Lt. Gov. Kim Reynolds announced a series of town hall meetings across Iowa about the importance of giving students a great education. Reynolds is co-chair of the Governor's Science, Technology, Engineering and Mathematics (STEM) Advisory Council along with Mary Andringa, Vermeer Corp. CEO. The Council's overarching goal is raising student interest and achievement in STEM and building a stronger STEM workforce pipeline.

"Having the opportunity to engage with the students, parents, educators and workforce who are directly impacted by the Council's work is extremely rewarding and eye-opening," explained Lt. Gov. Reynolds. "These stops around the state will give us a look at the successes and the opportunities for further growth in the future."

The tour will update Iowans on the progress being made by the Council, showcase student STEM presentations and seek feedback from community

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Gina Laidlaw, 2nd grade teacher from Monroe Elementary, received an AWIM Scale Up this past school year.

Days left to apply!
2014-15 Scale-Ups

members about how the Council should set STEM priorities moving forward. Governor Branstad, Mary Andringa and local business leaders will join Reynolds at select town halls.

"We want to hear feedback on the progress the Governor's STEM Council has made over the past two years, and the priorities we should set as we look ahead," said Andringa. "The STEM town halls are a way to engage communities in conversation about the value of STEM education and STEM economic development."

The public is welcome at the following STEM town hall events:

Monday, May 5, 2014

1:30 p.m. Lt. Gov. Reynolds and STEM Co-Chair Mary Andringa holds South Central Region STEM Town Hall
Central College, Graham Conference Center
812 University Street
Pella, IA

Tuesday, May 6, 2014

1:30 p.m. Lt. Gov. Reynolds and Gov. Branstad hold Southwest STEM Town Hall

Corning High School Auditorium
 904 8th Street
 Corning, IA

Thursday, May 8, 2014

2 p.m. Lt. Gov. Reynolds hold Northeast STEM Town Hall
 Gladbrook-Reinbeck High School Auditorium
 600 Blackhawk Street
 Reinbeck, IA

For more information, visit www.iowaSTEM.gov.

Iowa FTC Teams to compete in St. Louis' **FTC World Championship**



Apply NOW for 2014-15 scale-ups. An educator, from library programs to school districts may apply.

The DEADLINE is 5:00 PM on MAY 2 2014!

1. A World in Motion
2. CASE
3. Defined STEM
4. Engineering is Elementary
5. FIRST Tech Challenge
6. HyperStream
7. KidWind Renewable Energy
8. SCI Pint Size Science
9. Project Lead the Way: Engineering
10. Project Lead the Way: Gateway

Click [HERE](#) for more information.

Click [HERE](#) for an application.

I AM STEM.



Meet Drake Senior Adam Riesselman

Adam Riesselman's connection with the World Food Prize began as a sophomore in high school when he worked on a research paper on conflict resolution, addressing Colombian

Watch Beta's robot place a block in a basket with an IR beacon and double hang in the end game with Dark Matter 4150 from Marion, IA!

Congratulations to three FTC teams from Iowa who are advancing to represent the state at the FIRST World Championships April 23-26 in St. Louis, MO!

"Only the top seven percent of teams in the nation were invited to advance from a state championship to compete in a Super Regional Championship," said Beta's coach, Emily Burkland. The Iowa teams include:

4150 Dark Matter from Marion
4443 Sock Monkeys from Oskaloosa
3550 Beta from West Des Moines

West Des Moines' Beta team won five of the eight qualifying matches, ranking #10 out of 36 in the Ashton Division. Their robot, Gemini, sped through Hardware and Software Inspections.

The team was also honored with the Judges Commendation, which read: *"The difference one person can make has been demonstrated by this young man and his team. His impact has so impressed the judges that they need to call special attention to his efforts to catalyze a cultural change. The judging group would like to recognize Team Beta 3550 for their contributions to STEM and the FIRST organization."*

Registration for each team is \$1000, plus travel costs. All teams are raising funds. West Des Moines' Beta created a newly designed t-shirt, which sells for \$15.

[Scale-Up Awards for FTC](#) are available for '14-'15 from the Iowa Governor's STEM Advisory Council. [Apply](#) before May 2nd!

Pella's iExplore Festival

biofuels.

During his senior year of high school, Riesselman wrote for the World Food Prize again, and attended the Global Youth Institute in Des Moines, where he was selected for a Borlaug-Ruan internship in Mexico. Since arriving at Drake, Riesselman has remained involved with the organization, landing additional internships and finding time to volunteer.

In 2013, Riesselman was one of two Drake students to receive the prestigious Goldwater Foundation Scholarship. The scholarship is for students pursuing careers in mathematics, natural sciences, and engineering.

The article and photo were provided as a courtesy by Drake University's Newsroom. Click [HERE](#) to read more.

Check one thing off your to-do list!



Ben Chadwick, Dallas Center-Grimes teacher received a PLTW Scale-Up last year.

Complete YOUR Scale-Up Evaluation NOW!

WHY? Having your input helps the State create better STEM programs and leads to the gathering of concrete data that will help the initiative grow.



Students participated in sixteen stations of hands-on STEM activities. Approximately 120 students and 100 parents spent the evening learning more about these career areas.

Central College hosts its second annual Pella i-Explore Festival

"Every time you ask a question, a new idea is born," said Mark Putnum, Central College President, during his introductory remarks at Pella's iExplore Festival. Putnam set the perfect tone for an education and interesting night.

From exploring geometric concepts using bubbles to learning about Iowa's lost prairie, presenters made STEM come alive in Pella. Sponsored by the SC STEM Hub of the Iowa Governor's STEM Advisory Council, Central College organized and hosted the event on April 1 from 6:00-8:00 PM.

Senior Cairn Reisch lead organization efforts. "I was part of this last year and really enjoyed it," said Reisch. "This is something I wholeheartedly wish we would have had when I was a kid."

Vermeer Corporation sponsored a spaghetti tower, where participants used pasta and marshmallows to build a tower.

"The earlier we get kids excited about STEM, the more it will carry through for tomorrow's workforce," said Teri Vos, Public Relations.

Students were assigned random small groups and traveled through hands-on



Nathan VanZante, Central College junior, coordinated the Geometry of Bubbles booth. "I started out in chemistry," he said, "but went back to volunteer at my elementary school. That's when I found that while I still love science, I love working with kids more. I'm going to be secondary science teacher."

Please take a moment to complete these 3 Scale-Up Monitoring activities

For a link to the 3 activities included, click [HERE!](#)

- 1.) teacher/leader survey,
- 2.) compiled student participant I
- 3.) student surveys.

The Scale-Up Monitoring link will take you to a dedicated site which hosts all the documents, survey instruments, spreadsheets, and links that implementers will need to complete the 3 STEM Scale-Up Monitoring activities. Instructions for each activity are included in the monitoring packet can be accessed at that link as well.

Need help? Please email Sarah Derry scstemhub@drake.edu.

Open a door
(or a Pella window)...
Volunteer for STEM!



Garrett Miller, pictured at the far right, is a Senior Engineer at Pella Windows.

STEM needs you!

activities. Many of the booths were run by Central College student leaders and community mentors.

While students toured through stations, parents were invited to an information panel. Laura Reif, a PHS parent, said, "This festival gets kids excited and propels their interests. It teaches that this inclination they have to question can be channeled into something that's productive and rewarding."

Look for more iExplore Festivals next year!

STEM Happens



DeAnn Bishop's first graders measure how far the block moved and adjust the track or car to increase the block's movement. "Two per group makes for great conversation and learning," says Bishop.

Baxter Elementary's STEM Champion

DeAnn Bishop

Students in DeAnn Bishop's first grade classroom can explain and apply force, velocity and speed. How does she teach such advanced science terminology? Using *A World in Motion's* race car kit.

"Don't be scared to use the vocabulary words," Bishop advises.

Working with a partner, students test three wooden vehicles on a ramp. For each vehicle, they evaluate whether or not it was a successful run and retest to verify results.



"My favorite subject this year is science," says Abby, "because we get to do activities."

Why does Garrett Miller volunteer for STEM?

"Part of the reason I do this is because we need engineers. I'm proud of my profession. I couldn't get my kids to become engineers, so I help others who are interested."

If you'd like to help, visit STEM's calendar or contact a school in your community.

Registration open...



Facilitated by retired Drake Professor Dr. Patsy Fagen (above), teachers receive continuing education credit and/or Drake graduate credit.

Johnston Hosts TI-Nspire Workshop

A TI-Nspire 3-day workshop will be held June 23-25 at Johnston High School.

This workshop is designed for educators who need support in transitioning to the Common Core State Standards for high school Algebra, Geometry, and Statistics.

It covers basic features of the TI-Nspire™ CX handheld and TI-Nspire™ Teacher Software, with an emphasis on building pedagogical skills for leading discussions and engaging students in the Mathematical Practices.

Click [HERE](#) to learn more and register

"The hardest part is getting your car to go straight on the track," says Sarah. "We have to retest a lot."



Students take the measurement component of this task very seriously. "I learned that putting the car up high on the ramp helps it to go fast," says Gavin. "It moves the block the most."

During this session, the cars smash into a block at the end of the ramp. Students then measure how far the block moves. "The red one is the best car," says Aiden. "It goes the fastest and moves the block the most."

Bishop proves a master at class organization. Every student is focused on a task. While two groups complete the race track activity, others move around literacy centers in the room. "They get excited to see

this activity included on the message board," says Bishop. "It's worth the work."

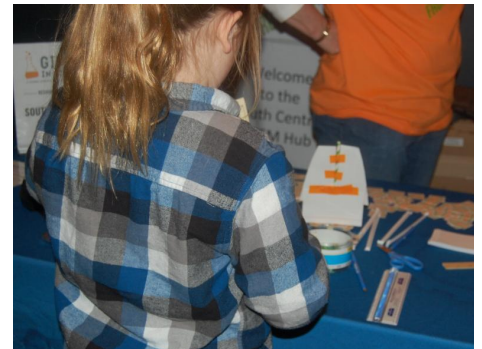


Hands down, these frog noisemakers were the Clover Kids' favorites!

Jennifer Pollard Brings STEM to 4-H

In the past, 4-H conjured images of a rural farm life, but the organization is evolving. Jennifer Pollard, Clarke

Looking for summer curriculum
Check out materials through the SC STEM Hub's Library!



The Skimmer Kit was a great draw at SC's Girls in Science Festival.

Details:

Materials may be checked out for 6 weeks. They can be picked up and returned at Drake University's School of Education. Please replace any consumables you use.

Note:

Some kits require teacher training.

If you're interested, please email Sarah Derry at: scstemhub@drake.edu

Kits, Equipment and Guides

K-6

- * Windmills
- * Patterns All Around
- * Engineering Inspired by Nature
- * Jettoy
- * Skimmer
- * Straw Rocket
- * Gravity Cruiser

6-8

- * Gears
- * Fuel Cell



County's Youth and Outreach Coordinator, leads the STEM charge in her area.

"4-H works hard to keep up with new standards," says Pollard. "Most jobs are going to be STEM related in the future, so we want to prepare our 4-H kids to ready for those opportunities."

"Every time we host Clover Kids," says Pollard, "we think it's the best one yet. But the next one just gets better."

the SC STEM Hub's Scale-Ups she received this school year. "The kids may not be interested in learning out of a text book, but the projects make it more interesting," says Pollard. "This provides a more realistic learning experience."

In this kit, students learn about amphibians and reptiles. "I learned they aren't very much alike after all," said Shawn, 2nd grader at Clarke Elementary.

Pollard hopes that learning more about these two groups creates a better understanding when kids see them in nature. "I think it's interesting to learn about them," says Alma, 4th grader. "I used to play with frogs when I was younger. They're cool."



Konrad is a 4th grade volunteer. "My mom is the parent-leader, and it's really fun. So I volunteer to help every meeting."

Inspiring STEM

SC STEM Hub's Advisory Council Member Becky Wigeland

When some people think retirement, they think rocking chair, but *not* Becky Wigeland. After 33 years of teaching in the Des Moines Public School District, she traded the notion of a rocking chair for a hot air balloon!

For the past 11 years, she's worked as the volunteer curator for the National Balloon Museum in Indianola, IA. She also serves on the SC STEM Hub's Advisory Council.

* Glider

9-12

- * Light Sensor
- * Motion Detector
- * Labquest 2
- * Voltage Probe
- * TI Light Probe
- * Temperature Probe
- * pH Sensors

Educator Books and Materials

K-5

- * Sally Ride Science Program (space)
- * Designing Knee Braces
- * Designing Bridges
- * Designing Water Filters
- * Designing Walls
- * Designing Plant Packages
- * Designing Maglev Systems
- * Improving a Play Dough Process
- * Replicating an Artifact
- * Designing Alarm Circuits
- * Designing Lighting Systems
- * Cleaning an Oil Spill
- * Designing Submersibles
- * Designing Parachutes
- * Evaluating a Landscape
- * Designing Model Membranes
- * Designing Hand Pollinators
- * Making Work Easier
- * Seeing Animal Sounds
- * Safe Removal of Invasive Species
- * Engineering Bubble Wands
- * Family Science
- * Push, Pull, Go
- * Student Notebook Blank
- * Plant Growth and Development
- * Motion and Design
- * Soil
- * Sound
- * Ecosystems
- * Changes: liquid, solid, gas

7-12

- * Exploring the Nature of Light
- * Studying the Development and Reproduction of Organisms
- * Exploring Plate Tectonics
- * Exploring the Properties of Matter
- * CASE Training Notebook

NSTA Teacher Resources:

- * The Case for STEM Education
- * Everyday Engineering
- * Exemplary Science for Building Interest in STEM Careers



Wigeland sees STEM ties in many places. "Everything about hot air ballooning relates to STEM. I have always been interested in math and science. Always looking for a challenge."

Wigeland's interest in education was nurtured at a young age. "My mother was an elementary teacher, and I worked in her classroom from time to time. I never really thought about doing anything else but being an elementary school teacher."

This passion for education shapes her work today. Currently, Wigeland is setting up STEM-based classes to be offered at the National Balloon Museum.

"Being a museum curator is an extension of my skills as an elementary teacher," says Wigeland. Click [HERE](#) to learn more about the National Balloon Museum.

"Being a museum curator is an extension of using my

skills as an elementary school teacher," says Wigeland. "It enables me to assemble exhibits, talk in front of groups, give tours, promote the museum and work with volunteers."

Not many can say their classroom flies, and not many have dedicated their lives to education for over 40 years. That makes Wigeland special.

March State STEM Conference Recap Ben Milne Motivates Crowd



"STEM gives your students super powers," says Ben Milne, Founder and CEO of Dwolla. "It teaches them to see things that not everyone else can see."

During his keynote at the March 27 State STEM Conference, he credited much of his success to a solid K-12 education and his grandmother's junk drawer.

"The energy your students have will require the world change just to contain them," said Milne. Click [HERE](#) to learn more about Dwolla.

Milne said he had a lot of energy as a kid, so his grandmother let him take apart all of her broken things. "That's when I learned the entire world can be reverse engineered."

- * Integrating Engineering + Science in Your Classroom
- * Introduced Species
- * Teaching Science in the 21st Century
- * Teaching Science in the Two-Year College
- * Technology -Based Inquiry for Middle School
- * Technology in the Secondary Science Classroom
- * STEM Student Research Handbook

TEACHERS WANTED!



"The experience I've had here will definitely change how I approach certain topics. I will be able to give my students an idea of the kind of future employment they can expect to have if they only aspire to certain levels of education and training."

- Doug Darland, Muscatine High School, 2013 Extern - Monsanto (Muscatine)

Externships for STEM Teachers

Earn a stipend this summer, connect with the community and deepen your understanding of STEM by applying for Teacher Externship.

Teachers are needed for the following opportunities:

- Chariton- Hy-Vee Distribution Center, targeting math and/or technology teacher, preferably with knowledge of statistics.
- Des Moines- Blank Park Zoo at Des Moines Public Works (Forestry Division), targeting life

College wasn't for him, so Milne began buying and selling businesses. When he had the concept for Dwolla, he looked for ideas to "build the ideal way to move money."

To do this, Milne reached out to Iowa experts as mentors, and they reached back. "Des Moines has always shown up for us," said Milne, "and it's a great place to launch a business."

Milne said teachers are the "missing link" that connects the super powers of STEM to Iowa kids. "If you do one thing today," he advised, "open a door."

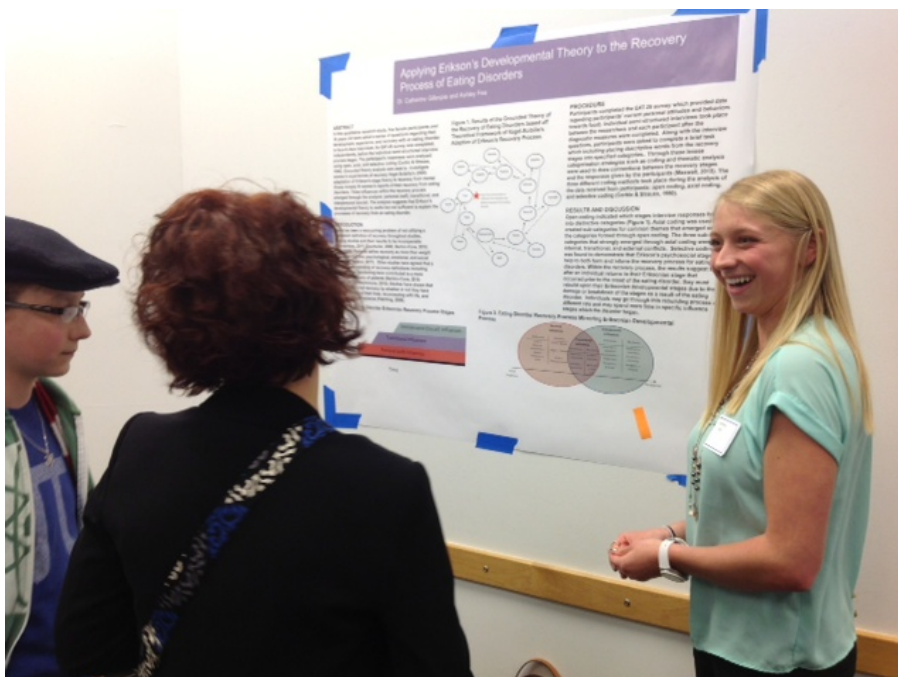
science teachers

- Des Moines- Principal, targeting technology teachers

For more information, visit:

<http://www.iowastem.gov/externships>

Undergraduate Research Accomplishments Showcased at Drake's 11th DUCURS Event



Ashley Fee shares her research on eating disorder recovery.

The Drake Undergraduate Science Collaborative Institute (DUSCI) hosted its 11th Undergraduate Research Conference on April 10th. The Drake University Conference on Undergraduate Research in the Sciences (DUCURS) showcased the research of 179 students with the mentorship of 39 faculty members across 13 different disciplines. The 67 posters and 7 oral presentations included collaborations from within Drake's colleges to between Drake and international institutions.

"Involvement in undergraduate research illuminates the learning in a way we could not achieve without the hands-on, high-impact experiences," said Drake's Deputy Provost, Raylene Rospond. "DUCURS allows students to showcase the results of those high impact experiences."

Spread the word about STEM EVENTS in your community!



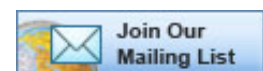
Photo Collage of Indian Hill's Community College iExplore Festival

Seymour teacher Stephanie Lukavsky brought a bus of middle school students to Ottumwa's iExplore Festival.

"Thank you so much for hosting such a wonderful experience," wrote Lukavsky. "[Students] are anxious to return next year."

Visit the South Central STEM Calendar

To submit your STEM event, click here!



Events

There's more! Don't miss these events:

April 24-25 [Impact After School Conference](#), Johnston

April 24-25 [Environmental Issues Instruction](#), Mt. Vernon

May 2 [Deadline for LEA Scale-Up Applications](#), Online

June 9-13 [FREE! Climate Change and Ag Workshop](#), ISU

June 23-25 [TI-Nspire Workshop](#), Johnston High School

July 7-10 [AP Summer Institute](#), University of Iowa

July 21-25 [Engineering Design for the K-12 Sci Classroom](#), UNI

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