



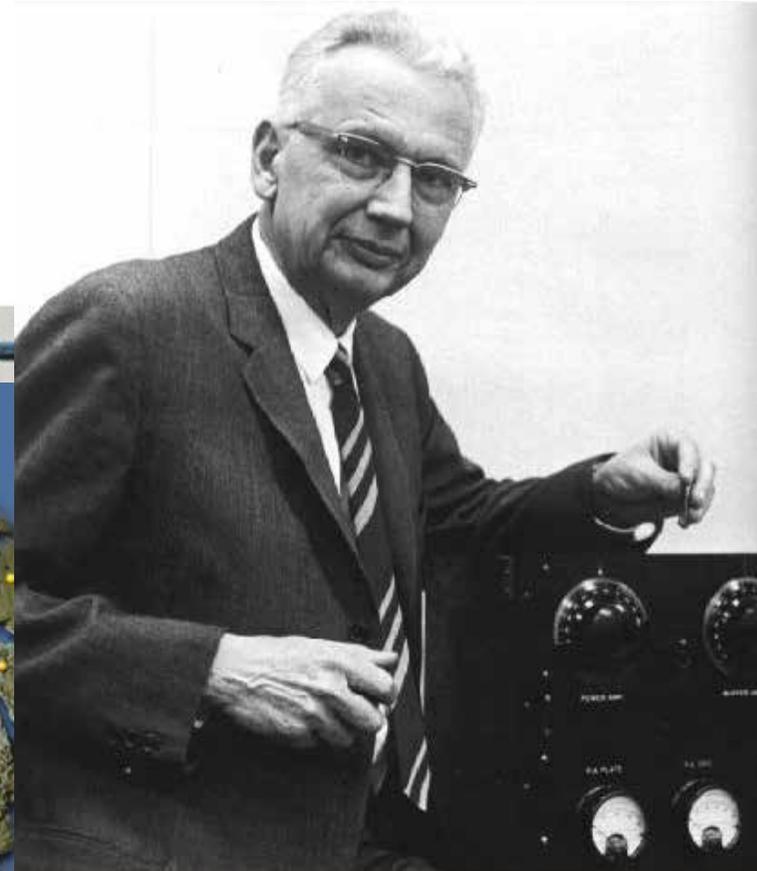
Rockwell Collins' Commitment to STEM in K-12 Programming

Adriana D'Onofrio
Community Relations



Rockwell Collins

- Design, produce, and support innovative solutions for aerospace and defense markets.
 - Flight-Deck Avionics, Cabin Electronics, Mission Communications, Information Management, and Simulation/Training



Community Relations at Rockwell Collins

Jenny Becker

Manager, Community Relations, and Executive Director, Rockwell Collins Charitable Corporation

- Oversees all charitable giving and employee volunteer programs
- Leads development and support for STEM Education strategy

Adriana D'Onofrio

Sr. Community Relations Specialist

- Oversees Engineering Experiences education outreach programs
- Leads activities with FIRST across Iowa and regional communities
- Assists with Volunteer Portal and programming

Melanie Richert

Sr. Community Relations Specialist

- Oversees all local charitable contributions for Iowa and regional communities
- Leads activities for the Rockwell Collins United Way Campaign
- Oversees arts, culture, and human services programming

Joan Schaffer

Grants Coordinator

- Oversees the processing of all charitable grants
- Assists with Volunteer Portal

K-12 Education Strategy

Vision

Working together to inspire the next generation of engineers and innovators

Mission

Enable a high quality future technical workforce to create innovative solutions that drive business success

Guiding Principles

K-12 Education

National in scope/local in focus

Hands-on Activities

Teamwork/Inclusiveness

Employee/Retiree Engagement

Partnerships

Engineering Experiences

- Education outreach activities for K-12 students
 - Project Lead the Way (PLTW)
 - Internships
 - Lab/Facility Tours
 - 1-Day Mentoring Sessions (Individual & Group Job Shadows)
 - Team American Rocketry Challenge (TARC)
 - Future City Competition
 - STEM/Career Fairs
 - Career Presentations
 - Hands-on Activities in classrooms
 - Math Olympiad
 - Pen Pal Program
 - Real World Design Challenge
 - Virtual Reality Education Pathway (VREP)
 - Technology Student Association (TSA) Programming

- Strategic Partner with *FIRST*
 - *FIRST* LEGO League (FLL) for 9-14 year olds
 - *FIRST* Tech Challenge (FTC) for upper middle school and high school students
 - Sponsor teams, tournaments, teachers, workshops, etc.
 - Several Rockwell Collins employees involved with *FIRST* as coaches, mentors, event day volunteers and advisory committee members

- Engineers Week
 - engineering career awareness and recognition, including activity focuses on middle school girls

- Rockwell Educational Access to Computer Technology (REACT)
 - Teachers/Students receive training and computers

Community Involvement: Engineering Experiences



Engineering Experiences showcases Rockwell Collins' educational initiatives, offering students of all ages the opportunity to take part in experiences designed to take learning out of the textbooks and place it in their hands. These activities support classroom learning with interactive experiences and mentoring relationships with our employees and retirees.



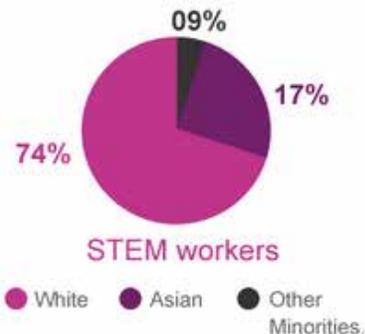
STEM Outreach Programming Examples

- Introduce a Girl to Engineering
- Pen Pal Program
- Workplace Learning Connection

STEM Facts on Women & Girls



74% of STEM workers are male. Only 26% are female.

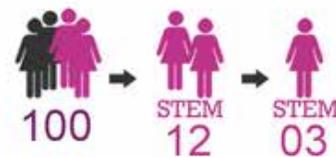


Women comprise more than 20% of engineering school graduates, yet only 11% of practicing engineers are women



Women were 28% of all workers in S&E occupations in 2010, up from 21% in 1993

Women's presence among computer/mathematical scientists declined from 31% to 25% over the period, but only because men's rate of growth in this area was higher than women's. The number of women working in computer/mathematical sciences has increased more than in any other broad occupational area.



Of 100 female bachelor students, 12 graduate with a STEM major but only 3 continue to work in STEM fields 10 years after graduation.



The wage gap between women and men is much smaller in STEM occupations than other occupations. In STEM fields, women earn \$0.92 for every \$1 earned by men, compared to \$0.77 for other fields.



Although women fill close to half of all jobs in the U.S. economy, they hold less than 25 percent of STEM jobs.

Women with STEM jobs earned 33 percent more than comparable women in non-STEM jobs, considerably higher than the STEM premium for men. As a result, the gender wage gap is smaller in STEM jobs than in non-STEM jobs.

K-12 Programming Examples: Introduce a Girl to Engineering



Every year 450+ Middle School female students are welcomed into a Rockwell Collins facility and matched with a female engineering mentor for the day. The female students spend the day listening to female engineering speakers, take a tour of our labs, and participate in hands-on engineering-related activities

K-12 Programming Examples: Introduce a Girl to Engineering



"There are so many types of engineering!"

"I learned that an engineering degree benefits people in many places"

"Engineering can surprise you"

"Each engineer is important in making something work"

"I learned there aren't a lot of girl engineers"

"The new technology that engineers build can impact the world massively"

"I learned that engineers work hard to make objects to make other people's lives easier and safer"

"Engineers really help people around the world"



Photo Courtesy of Odyssey Teams, Inc

K-12 Programming Examples:

Introduce a Girl to Engineering

Metrics

Pre and Post Surveys for event

* 3. I came to Rockwell Collins for Introduce a Girl because: (Check all that apply)

- A teacher suggested I attend
- My parents encouraged me to attend
- I am interested in engineering as a career
- I am curious about Rockwell Collins
- I thought it would be fun
- I wanted to miss part of a day of school
- Somebody told me about the event who has already attended
- A prior experience with Rockwell Collins
- Other (please specify)

* 4. Rank your favorite subjects

- English/Literature
- Science
- Art/Music
- Math
- History/Social Studies

* 5. What extracurricular activities are you involved in: (check all that apply)

- FIRST Lego League
- FIRST Tech Challenge
- Sports
- Student Government
- Dance
- Science Olympiad
- Project Lead the Way: Gateway
- Future Cities
- None
- Other (please specify)

* 6. How do you rank yourself in the following skills:

	Vary Little to No Experience	A Little Below Average	Average	Above Average	Excellent
Creative Thinking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Computer Programming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Math	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Science	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Problem Solving	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

After spending time on the tour at Rockwell Collins, I am _____ to consider exploring a career in engineering

- ___ More likely
- ___ Less likely
- ___ No difference from before tour

What does an engineer do? _____

What does Rockwell Collins do? _____

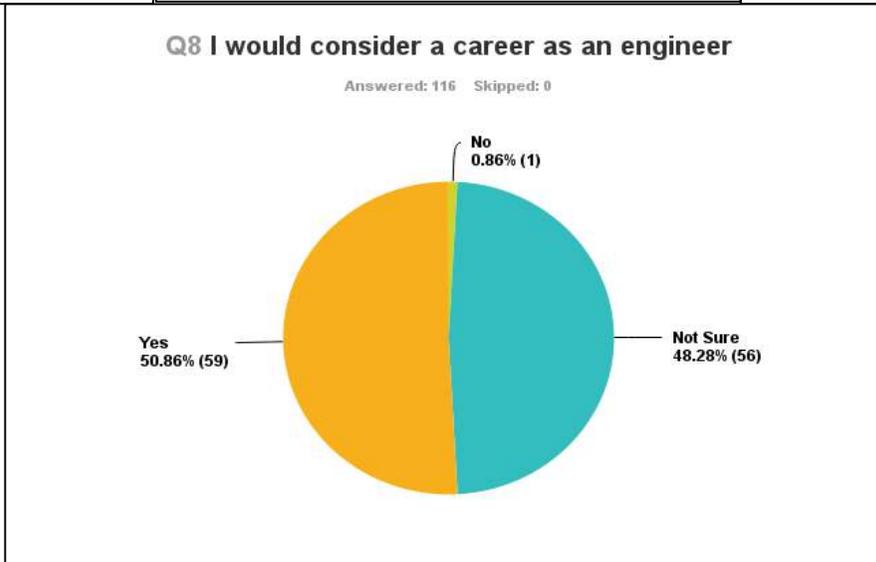
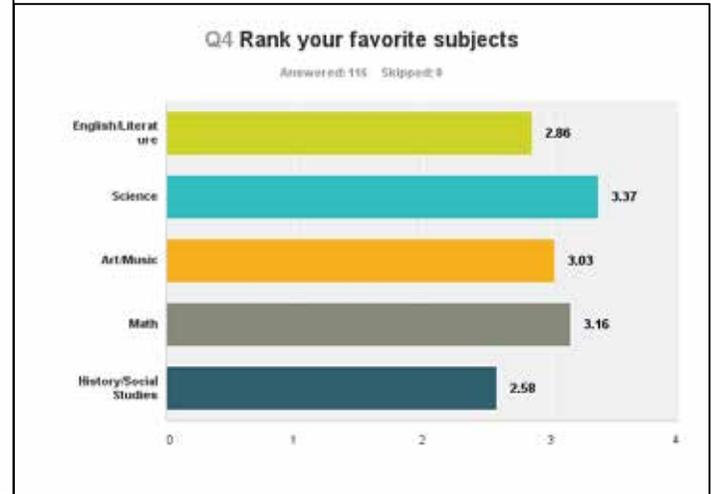
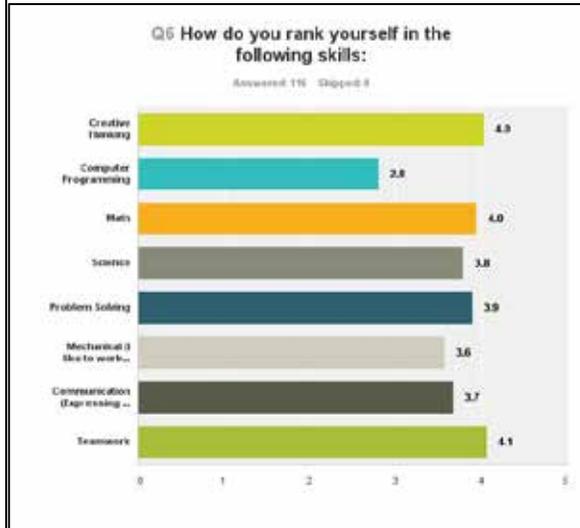
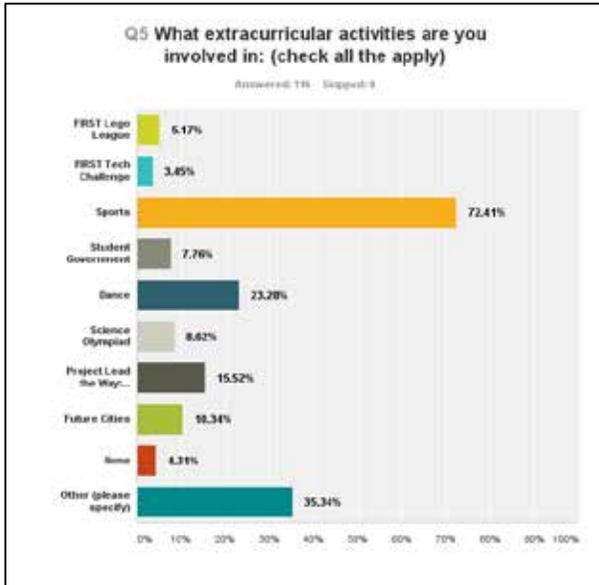
I would consider a career in engineering

- ___ Yes
- ___ No
- ___ Not Sure

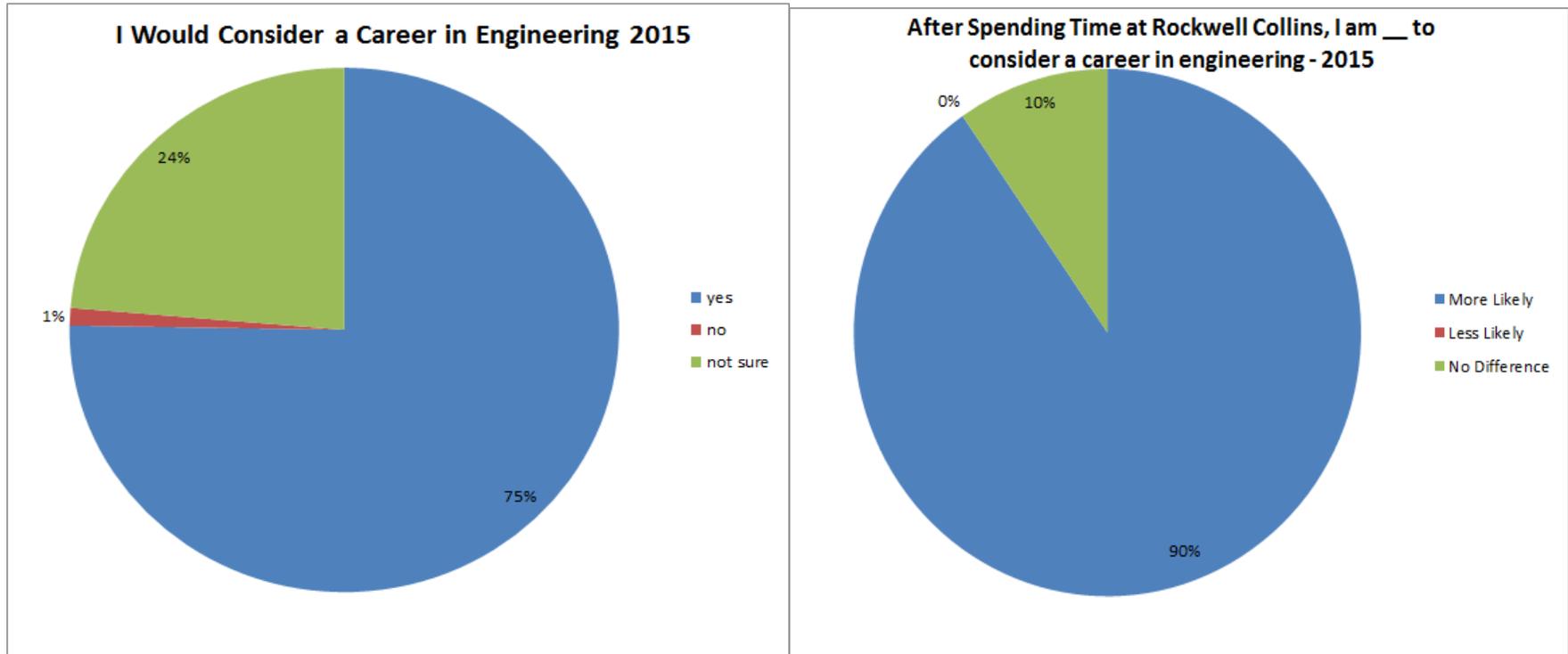
What did you learn during the tour that surprised you? _____

What suggestions do you have to improve this event? _____

Introduce A Girl to Engineering Survey: Pre-Tour Metrics



Introduce A Girl to Engineering Survey: Post-Tour Metrics



Introduce a Girl to XXX

How to Implement...

- Introduce a Girl to _____
 - Rockwell Collins Houston: Introduce a Girl to Meteorology
- Start small – 10 girls for 1-2 hours
- Work with a local SWE, WISE, Grace Hopper chapter
- Does not have to be on February 26th
 - Or 1 day a year

www.DiscoverE.org

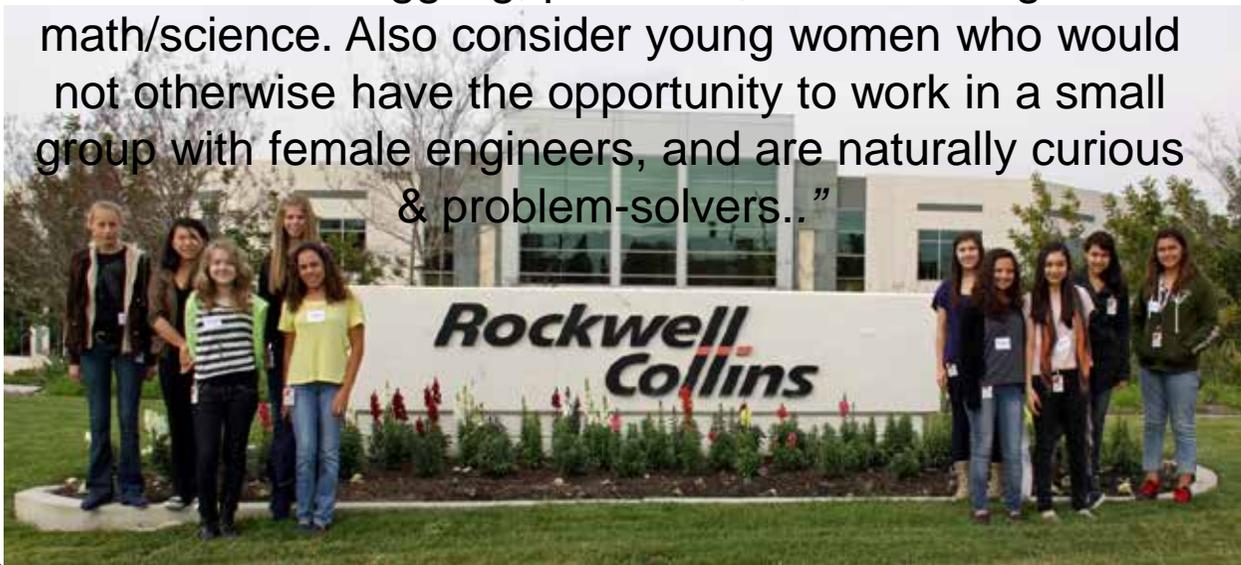


Photo Courtesy of DiscoverE

K-12 Programming Examples: Introduce a Girl to Engineering

Rockwell Collins does not choose which students are chosen to participate in the event. We place the responsibility on the school with our suggestions on how they select the students.

“Rockwell Collins invites you to identify 5 young women from your school to participate in our event. In an effort to achieve a diverse group, the five young women selected should range in their math/science skill level. Please consider attendees who are struggling, proficient, and excelling in math/science. Also consider young women who would not otherwise have the opportunity to work in a small group with female engineers, and are naturally curious & problem-solvers..”



Introduce a Girl to Engineering

www.DiscoverE.org

The screenshot shows the website for Girl Day 2015. The URL in the browser is www.discovere.org/our-programs/girl-day. The navigation menu includes: Our Programs, Discover Engineering, Volunteers & Educators, Cool Content & Activities, Resources & Downloads, About Us, and Our Shop. A quote from Sarah Barbara, Rockwell Collins, is displayed: "I enjoy being able to introduce girls to aviation relation experiences. You can see their confidence really grow as they realize it's not to hard to fly!". The main image shows a woman in a blue jacket pointing at a display while a young girl in a yellow shirt looks on. The text "THE COUNTDOWN:" is visible at the bottom of the image area. The date "Girl Day February 26, 2015" is prominently displayed at the bottom left of the screenshot.

- Activities
- Videos
- Marketing Material
- Volunteer Kits
- Games

...all free

Programming Examples: Engineering Experiences Pen Pal Program

Through this Engineering Experiences program, Rockwell Collins employees are given the opportunity to volunteer as pen pals to local elementary school students.

Pen Pal Coordinators (1-2) are designated to serve as the communication focal point between the school representative, often the Volunteer Coordinator or class teacher and Rockwell Collins volunteer pen pals.

Typically, the entire 4th or 5th grade class will participate

Letters are exchanged from October through May, with an average of 3 to 5 written letters per pen pal

Two visits are scheduled per year, one at Rockwell Collins and the other at the school.

Engineering Experiences

Pen Pal Program



Pass notes! Play games!

Make a difference! Be a pen pal!

In just a few hours, you'll help a local elementary student improve reading, writing and social skills. Pen pals exchange letters during the school year and have in-person visits at both Rockwell Collins and the school.

Sign up on the Volunteer Portal:

<https://volunteer.rockwellcollins.com>

**Rockwell
Collins**
Building trust every day

Programming Examples: Engineering Experiences Pen Pal Program

Pen Pal Program at Wright Elementary

- 52% students on free and reduced lunch assistance
- Children are paired with the same Rockwell Collins Pen Pal through both the 4th & 5th grade
- “The program gives [students] a successful adult role model to look up to and have in their life...it is insane the impact we have on their lives, and they literally adore our program”
 - Rockwell Collins’
Wright Pen Pal
Program Coordinator



Programming Examples: Engineering Experiences Pen Pal Program

How to Implement...

- Low cost
 - Brown Bag lunches
- Does not require a large amount of time from volunteers
- Find a coordinator for each school
 - Rockwell Collins adds schools based on employees who volunteer to coordinate the program
 - Coordinator finds volunteers and communicates to school point of contact
- Include a schedule
- Communicate to teachers, parents, and employees
 - We send a letter home to each student's parents explaining the program and that their child will be communicating with a Rockwell Collins employee

Rockwell Collins Engineering Experiences Pen Pal Program Schedule	
	September 19: 1 st letter exchange. The first letter will be written by the Rockwell Collins pen pal.
	October 17: Letters arrive from School. (1 st letter from students)
	Tuesday, November 5th, 11:30 a.m. to 1 p.m.: Rockwell Collins pen pals visit School. If you unable to attend, please let us know, so a substitute can be found.
	December 5: Letters to your pen pal due. (2 nd letter you will write)
	January 9: Letters arrive from School. (2 nd letter from students)
	February 6: Letter to your pen pal due. (3 rd letter you will write)
	March 5: Letters arrive from School. (3 rd letter from students)
	April 10: Letter to your pen pal due. (4 th and FINAL letter you will write)
	Tuesday, May 6, 11:45 a.m. to 1 p.m.: Students visit Rockwell Collins for lunch and tour! Please bring a sack lunch. Beverages and cookie provided. If you unable to attend, please let us know, so a substitute can be found.
	May 8: Letters arrive from School. (4 th and FINAL letter from students)

Programming Examples: Workplace Learning Connection Partnership

- Founded in 1998 as a not-for-profit partnership of Kirkwood Community College and Grant Wood Area Education Agency serving K-12 in seven counties
- In 2011 become a department of Kirkwood Community College
- Coordinates career speakers, career fairs, worksite tours, job shadows, internships, and teacher professional development
 - Students receive college credit in high school through Kirkwood

County	Schools	Events	Internships	Job Shadows	Business Hosts
Benton	6	1189	17	183	50
Cedar	6	776	33	105	47
Iowa	7	458	4	123	30
Jones	7	1000	2	146	51
Johnson	19	4184	57	590	217
Linn	39	12349	118	1222	366
Washington	7	1082	46	75	58
Total	91	21038	277	2444	819

Programming Examples: Workplace Learning Connection Partnership

- Internships
 - Rockwell Collins' High School Internship Program
 - Finance and Engineering Pathways
 - All students that apply receive an interview
 - About 25 are selected for a paid internship each year
 - 90 Hours
 - Course Credit
- Job Shadows
 - Every year, 80-100 High school students are invited to Rockwell Collins to shadow an employee for 2 to 6 hours
 - Students visit the employee's office, lab, and anywhere else that pertains to that employees career
 - Employees discuss everything from their current roles, education, work/life balance, to what they love and hate most about their job



Programming Examples: Workplace Learning Connection Partnership

- Tours
 - Project Lead the Way
 - About 450 students tour Rockwell Collins Labs every year
 - Shutdown all participating labs
 - Groups of students tour each lab for about 25 minutes
 - Lab host explains the lab, their career and education, answers questions
 - Explore Engineering
 - 120 students participate in this special tour
 - Explore Engineering disciplines: Software, Systems, Hardware, and Project Management
 - Lego Robots
 - Gumdrop Domes
 - Egg drops
 - Fly in a systems rig



Programming Examples: Workplace Learning Connection Partnership

- Career/STEM Fairs
 - Dozens and Dozens of Career and STEM fairs every year
 - Rockwell Collins participation
 - STEM Fair Kits for employees to checkout









North Korean Sanctions

Problems

Sanctions and Distributions

Solution





System	Organ	Function	Location
Cardiovascular	Heart	Pumps blood	Chest
Respiratory	Lungs	Exchange gases	Chest
Digestive	Stomach	Breaks down food	Abdomen
Excretory	Kidneys	Filter blood	Back

Cardiopulmonary - of or relating to the heart and lungs (the cardiopulmonary system). A cardiopulmonary bypass that diverts blood from the entrance to the right atrium through an oxygenator directly to the aorta.



Ductus Arteriosus - Closure between the primary artery and the aorta in the fetus, which bypasses the lungs to distribute oxygen received through the placenta from the mother's blood. It normally closes once the baby is born and the lungs inflate, separating the pulmonary and systemic circulations.

Tar is the organ of hearing and balance in humans and other vertebrates, especially the external part of this.



The **frontal lobe** is one of the four major lobes of the cerebral cortex in the brain.



Cleft lip is a congenital developmental anomaly (CFL) that causes a separation in the lip's muscle, skin, and bone.

Paracere-brain circulate in the



QUARANTINE AREA



A static period, which people are arrived from etc. to infectious or placed **Rotary Club**. A group of individuals that support spirit, keeping you for education.



Spinal Cells that make up the motor (efferent) system, the respiratory and the feelings of the

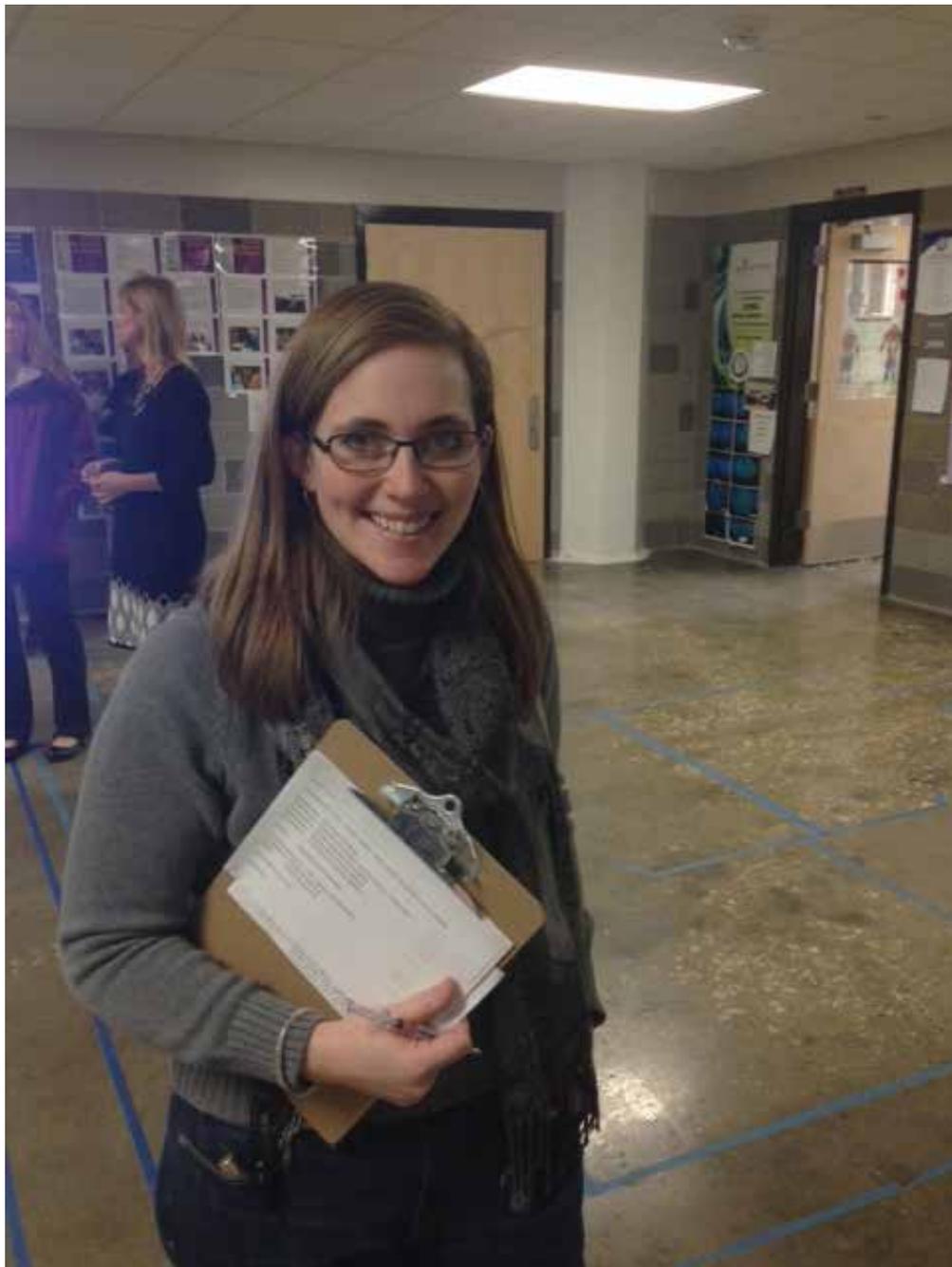
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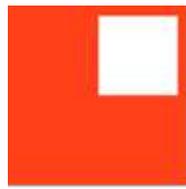










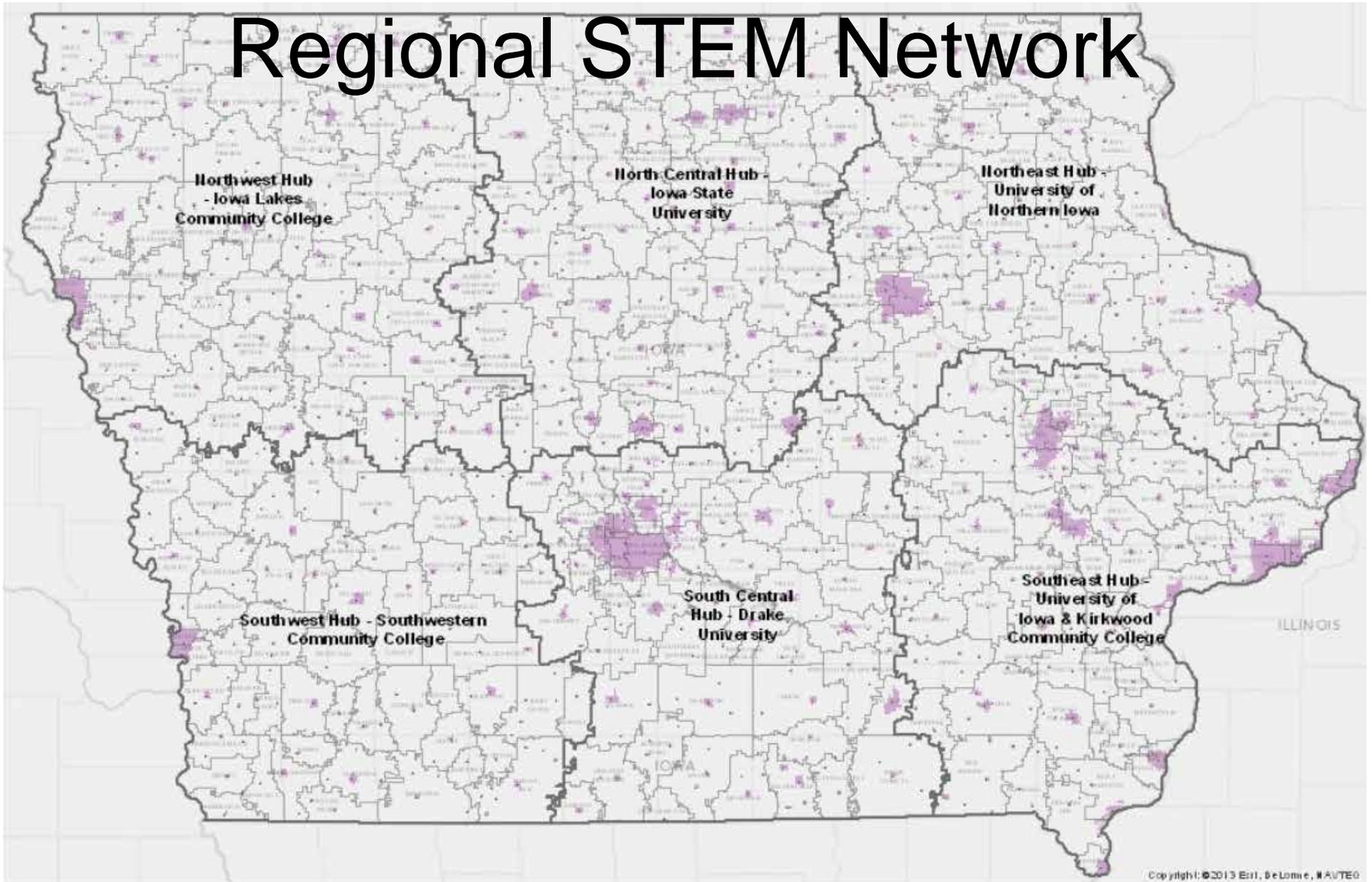


DLR Group

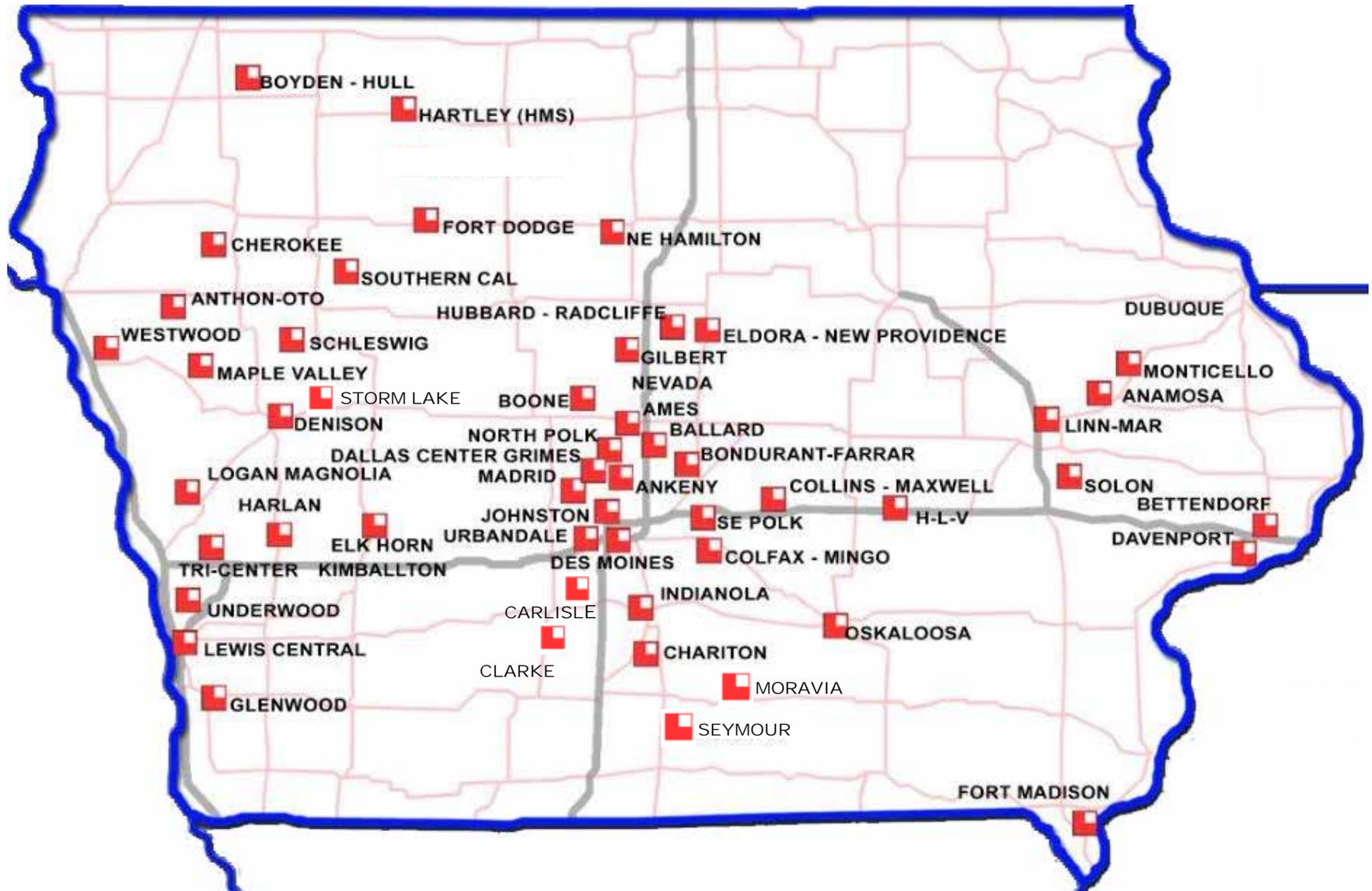
Architecture Engineering Planning Interiors

Science Technology Engineering Mathematics

Regional STEM Network



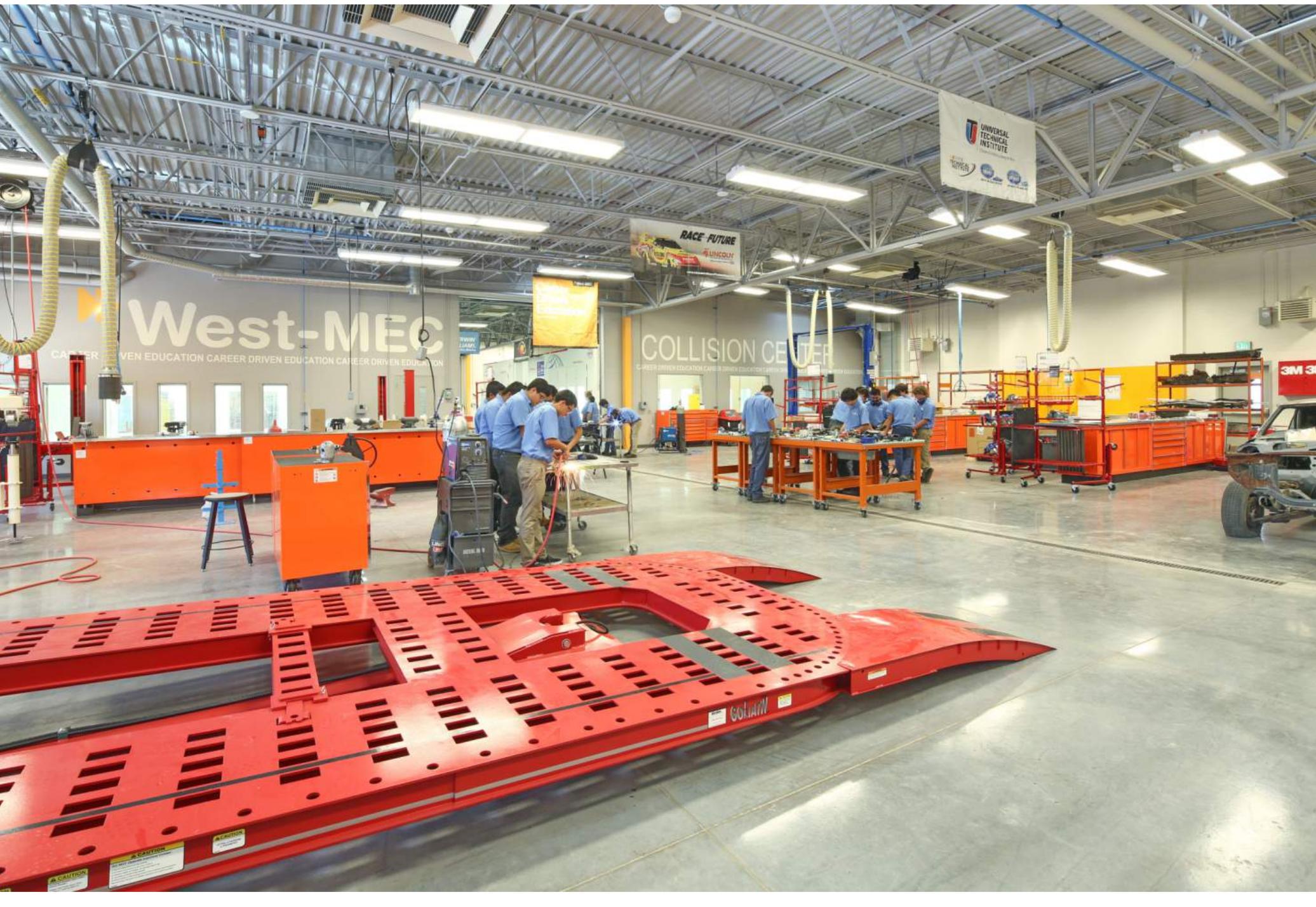
K-12 Partnerships





Construction & Engineering





West-MEC
CAREER DRIVEN EDUCATION CAREER DRIVEN EDUCATION CAREER DRIVEN EDUCATION

RACE-FUTURE
LINCOLN

COLLISION CENTER
CAREER DRIVEN EDUCATION CAREER DRIVEN EDUCATION CAREER DRIVEN EDUCATION

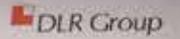
UNIVERSAL
TECHNICAL
INSTITUTE

3M

GOLIATH

WELCOME WAUKEE

STUDENTS, FACULTY, AND FRIENDS



collaboration with future employees



collaboration with future employees

A photograph showing two men leaning over a table, intently studying a large set of architectural or engineering plans. The man on the left is wearing a purple patterned sweater, and the man on the right is wearing a grey t-shirt. The plans on the table are detailed with various lines, grids, and some highlighted areas in yellow and pink. The background is a dimly lit room with wooden paneling and a door.

**teacher and business partner designing
manufacturing tech lab**

A man in a blue shirt and glasses is standing and presenting to a group of about ten young people seated around a long white conference table. The room is modern with large windows on the left, a projector on the ceiling, and glass-walled offices on the right. The scene is brightly lit, suggesting a professional and collaborative environment.

Lake Washington STEM Built Environment Series 2014-2015



opportunities for all students

DLR Group

nsdi
T44
EXHIBITOR



1 10%
GREATNESS
STEMS
FROM IOWANS

listen.DESIGN.deliver



MARSHALLTOWN

**BUSINESS-EDUCATION
ALLIANCE**

OUR STUDENTS. OUR FUTURE.

MBEA - MISSION

Mission Statement: The Marshalltown Business-Education Alliance is a partnership between the Marshalltown Community School District, Iowa Valley Community College District, and the local business community committed to drive the successful execution of the partners' strategic plans, achieve measureable results, and be the education system of choice.

MARSHALLTOWN BUSINESS-EDUCATION ALLIANCE
OUR STUDENTS. OUR FUTURE.

MBEA COMMITTEE STRUCTURE

Goal 1:

Remove barriers and expand educational opportunities and career pathways for students.

Goal 2:

Actively engage business leaders and educators to determine the skills needed in the workplace.

Goal 3:

Improve community perceptions and attitudes about education.

Goal 4:

Develop a unified front to ensure parents recognize the value of education.

Goal 5:

Provide “one voice advocacy” for policies and issues affecting education excellence.

Goal 6:

Communications & Metrics to guide and define success.

Goal 5

- § We will organize/sponsor a Post Legislative Session Debrief upon completion of the Legislative Session.
- § We will provide a Business/Education briefing on “Key Education Topics” to teachers at their Teacher Appreciation Event at the beginning of the school year in August.
- § We will develop opportunities to begin to engage our parents at Student Teacher Conferences.
- § We will work to develop “white papers” on the key business/education topics.

MBEA COMMUNITY INVOLVEMENT

§ State of the Schools Luncheon

§ Post Legislative Session Debrief

§ State Legislative Priority Visit

§ Educator Recognition Initiative

§ STEM Camp

ALLIANCE BOARD MEMBERS

Iowa Valley Community College District:

- Dr. Chris Duree, Chancellor
- Robin Shaffer Lilienthal, MCC Provost
- Jennifer Wilson, Director of Adult Literacy Programs
- Cindy Schulte, Director of Government Affairs

Marshalltown Community School District:

- Dr. Marvin Wade, Superintendent
- Dr. Susan Pecinovsky, Associate Superintendent of Student Achievement
- Aiddy Phomvisay, MHS Principal

Marshalltown Education Consultants:

- Sue Cahill
- Carlos Portes

Business leaders:

- Terry Buzbee, Fisher Controls/Emerson
- Paul Gregoire, Fisher controls/Emerson
- Alan Anselman, Lennox
- John Hughes, Central Iowa Healthcare
- Chris Clover, Mechdyne
- Mike Miller, RACOM
- Paul Beals, Independent Insurance Services
- Troy Mulgrew, JBS Representative
- Pete Charboneau, JBS Representative

Marshalltown Regional Partnership Leadership:

- David Barajas, CEO - Marshalltown Regional Partnership
- Lynn Olberding, Executive Director - Marshalltown Area Chamber of Commerce

MBEA STATE LEGISLATIVE PRIORITY VISIT



Pictures provided by: Bennet Goldstein - Marshalltown Times-Republican

MBEA STATE LEGISLATIVE PRIORITY VISIT



Pictures provided by: Bennet Goldstein - Marshalltown Times-Republican



GOVERNOR'S STEM ADVISORY COUNCIL

dedicated to building a strong STEM education foundation for all Iowans

2015 Statewide STEM Summit

Business Engagement Breakout - Panel Members

Adriana D'Onofrio, Sr. Community
Relations Specialist, Rockwell Collins
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Email: Adriana.donofrio@rockwellcollins.com

Kenneth E. Hagen, Architect
DLR Group
O: 515-276-8097 M: 515-473-8426
Email: khagen@dlrgroup.com

Kacia Cain, Anatomy & Biotechnology Teacher
Des Moines Central Campus
O: 515-242-7846
Email: Kacia.cain@dmschools.org

David Barajas, CEO
Marshalltown Regional Partnership
O: 641-753-6645 M: 641-990-4161
Email: dbarajasjr@marshalltown.org

Guidelines for Business-Education Partnerships in STEM

GREATNESS STEMS FROM IOWANS

GOVERNOR'S STEM ADVISORY COUNCIL

www.iowaSTEM.gov



An engineer demonstrates computer numeric-controlled robotic manufacturing at Vermeer Corporation, Pella.

Table of Contents

BUSINESSES & EDUCATION HOW TO GET INVOLVED:

- 1 Iowa Governor's STEM Advisory Council Programming
- 2 Regional STEM Networks & Corporate Partners
- 2 STEM Partnership Examples

MAKING THE CASE:

- 3 Supporting a STEM Pipeline
- 4 Acknowledgements

Building Connections Between Education and Business

A student tries MIG welding at Hoover High School, Des Moines.

Business and Education: How To Get Involved

The Iowa Governor’s STEM Advisory Council is a public-private partnership representing education, business and industry, nonprofits, students and families, and state government. It is focused on raising student interest and achievement in STEM subjects and improving STEM economic development in Iowa.

Below are some of the key programs that engage business and education through the Iowa Governor’s STEM Advisory Council. Iowa businesses are invited to invest in a variety of ways, whether in the form of time, talents, or in some instances, treasures. By working together we can evaluate STEM education in Iowa.

PROGRAM	BUSINESS ROLE	CONTACT
Real World Externships	<ul style="list-style-type: none"> Real World Externships provide educators with the experience to expose students to STEM careers. Accomplished by teachers working side-by-side with local businesses and organizations in or near the communities they serve. Business hosts are committed to STEM education in their communities and are able to provide teachers with inspiring, meaningful projects, working with mentors, enjoying strong return on investment. For more information, visit www.iowastem.gov/externships. 	Contact Kari Jastorff, Program Manager at Jastorff@IowaSTEM.gov .
Iowa STEM Scale-Up Programs	<ul style="list-style-type: none"> STEM Scale-Up Programs are top-notch kits and curriculum distributed to educators across Iowa. See the list of current sites at www.iowastem.gov/2014-2015-stem-scale-programs. Each program prizes mentorships with local professionals. STEM Scale-Up education programs are selected by an expert review panel who recommend and approve programs based on demonstrated success while offering the flexibility to be implemented in any size community. More than 100,000 students participated in the 2013-2014 school year. 	Your regional STEM Manager—learn who this is at www.IowaSTEM.gov/hubs or contact Kari Jastorff, Program Manager at Jastorff@IowaSTEM.gov .
STEM Festivals	<ul style="list-style-type: none"> Each Iowa STEM region conducts at least one STEM Festival per year. The regional managers engage a broad range of partners throughout the region with the intent in raising awareness and interest in STEM-related curriculum and opportunities for students at all grade levels. Business Partners can support STEM Festivals by exhibiting, displaying, investing or serving on a planning committee. 	Regional STEM Managers at www.IowaSTEM.gov/hubs or contact Kari Jastorff, Program Manager at Jastorff@IowaSTEM.gov .
Iowa STEM Businesses Engaging Students and Teachers (BEST)	<ul style="list-style-type: none"> The Council launched a district- or region-wide approach called Iowa STEM BEST. Iowa STEM BEST is an innovative high school program model built on the partnerships of businesses, k-12 and higher educational institutions Students solve real-world problems by using industry standards and are mentored by employers. Iowa STEM BEST programs are an example of how business and education can partner to produce personalized learning experiences that prepare students for a knowledge-based economy. 	Contact Kari Jastorff, Program Manager at Jastorff@IowaSTEM.gov .
Connect with Educators	<ul style="list-style-type: none"> Advise school teachers, administrators, college faculty, etc. by joining committees, establishing working relationships to grow career awareness, etc. 	Regional STEM Managers at www.IowaSTEM.gov/hubs or contact Kari Jastorff, Program Manager at Jastorff@IowaSTEM.gov .
Other STEM Council Programs	<ul style="list-style-type: none"> A total of 14 active programs of Iowa’s STEM Council are viewable at www.iowastem.gov/targeted_priorities 	Contact Kari Jastorff, Program Manager at Jastorff@IowaSTEM.gov .

How to Connect to STEM in Your Region

The Council's network of six regional STEM hubs delivers first-rate STEM opportunities to students and teachers across Iowa. Any business, nonprofit or education entity that would like to be included as a partner in STEM for Iowa or want more information on activities, please identify and contact your regional manager at www.iowastem.gov/hubs or contact the STEM Council directly at Info@IowaSTEM.gov.



Current Corporate Partners

Numerous companies have partnered with the Governor's STEM Advisory Council to host externs, serve on a committee, invest in programs, partner with a STEM school, etc. To see a representative listing, visit www.iowaSTEM.gov/corporate-partners. We are greatly appreciative of the numerous resources of time, talent and even in some instances, treasures that many Iowa businesses provide to support the STEM Council and STEM education in Iowa.

STEM Partnership Examples from Business and Education across Iowa

The following business and school leaders exemplify partnerships and offer to be contacted for additional information.

Name: Eric Ernst
Organization: John Deere Dubuque Works
E-mail: ErnstEricJ@JohnDeere.com
Phone: 563-589-6131
Region: Northeast
Activity: Supports **FIRST Tech Challenge** through sponsorships and volunteerism in the Dubuque schools.

Name: Tim Felderman, Principal
Organization: Crestwood High School
E-mail: tfelderman@howard-winn.k12.ia.us
Phone: 563-547-2764
Region: Northeast
Activity: Back to school Industry Tours for grade 7–12 teachers at start of school year

Name: Greg Olenick
Organization: Acieta LLC
E-mail: golenick@acieta.com
Phone: 712-388-6420
Region: Southwest
Activity: Partners with Council Bluffs CSD to start a Technology Academy in the high schools.

Name: Adriana D'Onofrio
Organization: Rockwell Collins
E-mail: amdonofr@rockwellcollins.com
Phone: 319-295-6519
Region: Southeast
Activity: Partners with United Way and AmeriCorps to host a free summer camp for low-income middle school students.
Rockwell Collins Education Outreach Plans

Name: Carrie Baird
Organization: Pella Corporation
E-mail: bairdcd@pella.com
Phone: 641-621-3626
Region: South Central
Activity: Supports the **PEERS program** and facilitates STEM classroom activities.

Name: Teri Vos
Organization: Vermeer Corporation
E-mail: terivos@vermeer.com
Phone: 641-621-7908
Region: South Central
Activity: Supports student internships, teacher externships, student and classroom visits, STEM-related organizations and childcare at **Yellow Iron Academy**

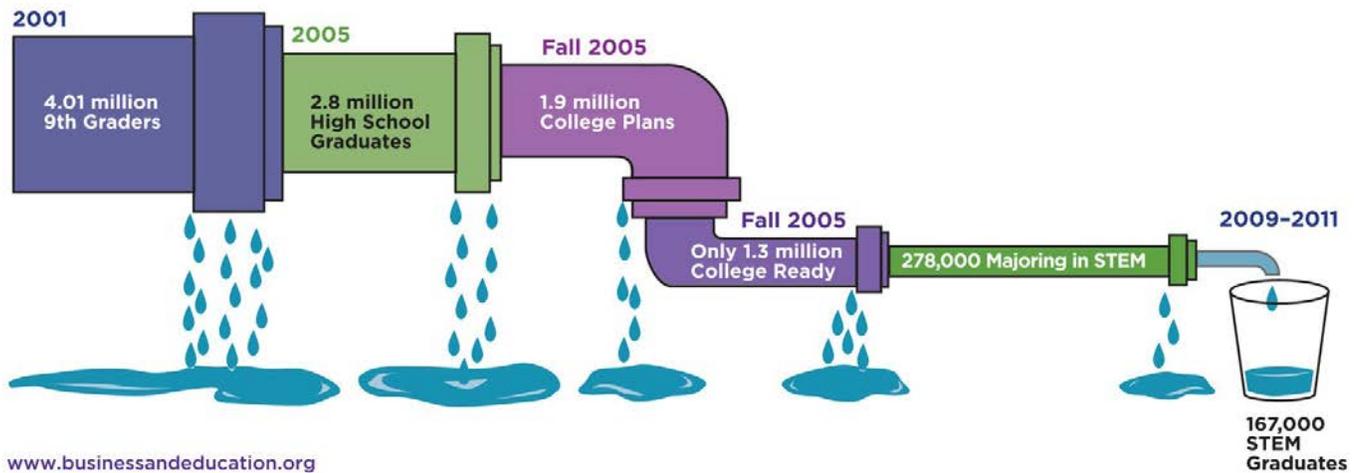
For additional examples, contact the STEM Council at info@iowastem.gov. Please provide us with your great partnership examples at <http://iowastem.gov/toolkit-examples>

Making the Case: Supporting a STEM Pipeline

Why We Need Business Engagement in STEM Education

1. The talent pipeline is today's bottom line.
2. Companies are competing for a limited number of workers graduating in STEM fields. We must secure Iowa's future by supporting high-quality STEM education to prepare a skilled workforce and strengthen our state's competitiveness.

A Leaking STEM Pipeline



Iowa depends on a sound STEM education system to bolster the employment prospects within Iowa and to enhance the overall quality of life in the state.

STEM educators need Iowa businesses that support STEM programming to help build a solid education and career path for Iowa's youth because:

- Most of Iowa's high-demand occupations for the period 2010–2020 are in the STEM fields of medical/agricultural science, financial systems, advanced manufacturing and information technology (Iowa Workforce Development b, 2013).
- Iowa will demand a total of 67,330 STEM jobs by 2018, up from 57,830 in 2008 (Carnavale, 2011); especially in the priority sectors of bioscience, information technology and advanced manufacturing.
- Iowa's STEM employment sector is projected to grow by 18% and pay better than any other job sector through 2018 (Iowa Workforce Development b, 2013).
- Iowa students can perform better in STEM subjects. Iowa's 8th graders ranked 25th in mathematics in 2013 and 17th in science in 2011 on the NAEP, whereas in 1992, no other state outperformed Iowa (National Center for Education Statistics, NCES; 2013).
- Iowa needs to diversify the talent pipeline in STEM, however, the proportions of minority students, those of low socioeconomic status, and students with disabilities that exhibit proficiency are consistently lower than the overall rates of achievement in mathematics and science, creating barriers that need to be dismantled.

More education is associated with higher earnings and higher rates of employment in Iowa.ⁱ

Mean Income	Education Level	Unemployment
\$11,075	HS Dropout	15%
\$29,224	HS Graduate	8%
\$30,057	Some College	7%
\$51,506	Bachelor's and above	2%

References:

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Iowa Workforce Development b. (2013). Occupational breakdown of STEM projections. Des Moines, IA: Communications and Labor Market Information Division, Iowa Workforce Development.

National Center for Education Statistics, National Assessment of Educational Progress (NAEP). (2013). 1992 and 2013 Mathematics Assessments. Retrieved from <http://nces.ed.gov/nationsreportcard/statecomparisons/acrossyear.aspx?usrSelections=1%2cMAT%2c0%2c13%2cacross%2c0%2c0>

Acknowledgements:

Iowa Governor's STEM Advisory Council

Iowa Governor's STEM Advisory Council Business Engagement Committee:

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- Sharon Rosenboom, Northwestern College

Iowa Governor's STEM Advisory Council—Business Engagement Focus Groups

- Educator Group
- Economic Development
- Business and Industry Group

Workplace Learning Connection at Kirkwood Community College

