

Iowa STEM Best Panel

Kristine Bullock

CAPS shifted to Best
Umbrella on a core concepts
Goal of uniting school, business and industry
Education driven by industry needs
Build on authentic partnerships
Some with 40 plus partners
Scale is not a deterrent to the Best model

IT Academy - Bettendorf / PV CS Academy

CS/PLTW Academy
Dual credit course (9-weeks in the academy and 9-weeks in the business)
Worked with chamber of commerce
Meet once per month
Application process to go beyond GPA towards aptitude
Academies set outside the classroom
Want their course work to be sequential
Interested in learning from industry, what skills are required
Curriculum driven by industry
Teach students to think, the process of coding and not coding itself

Iowa Blg - Cedar rapids and College Community

Putting students in a professional position
Co-working space in the community, people across multiple skill sets
Work in a creative environment
Feeder for 4 high schools

Asking business
What are you working on?
What is below your resource line?
What outbound projects are available?

39 initiatives
Focus on their resume
Grades are administered at the end of the semester
Custom build project tracking software and competencies - Portfolio

STEM Innovator - Kirkwood

4 years in the process
7 partner school districts
Driven by economic need
STEM Innovator is a capstone course after taking several courses in sequence

500 students everyday
STEM Innovators attached to the academies
Over 40 business partners
Business centric approach to course identification
Worked with caps to develop the skills and initiatives businesses are interested in participating in

Northeast STEM Education

Our current reality
IT Club
2-fold concept
Provide students with the innovative problem solving experience
Worked with hyper stream
First year - 9-students in the IT club, all boys
Second year - 30 students, 8 girls
Change space labs
Grant will support technology use
Help deepen relationships with partners
PD for Teachers

Rocket Manufacturing

Rural community
3,500 pop
Agriculture base
800 Pk-12 students
Student run manufacturing business
The key is the partnerships with local business
Real-world hands on experiences
School to work
Auto cad is offered
Open enrollment
Apply to the program
Interview process for enrollment
Working on 21st century skills
Secondary benefits - kids want to be in school
Companies are donating equipment
Need to think outside the box

Panel Q&A

How did they infrastructure get started (Chad - Rock Valley)

Sat down all the businesses to identify the needs, an investment in the community
Meeting with 40 business people
To develop a new list of needs
Started with partnerships then get resources

When do these programs take place?

All during the school day
Either onsite or separate center

What about credits?

Teachers come from all disciplines
Is this interdisciplinary
Will it match iowa Core and NGSS
Students get to choose
Rock Valley is an elective
Focus on interdisciplinary competencies

Do you see extra curricular activity?

Can extra curricular activity be embedded within these initiatives?
Considered a great compliment
The need for CS emerged from robotics
Rural schools is not a divide

How do you sell this to parents?

Let the resume drive student interest
Changing economy
Considered a parallel and valid model
Looking long-term
--how will their achievements abilities look down the road

How do you translate competencies?

Worked with counsellors
Admissions directors
Need to communicate your model on the website
Looking at the bank of standards
Track to 100% mastery



GREATNESS
STEMS
FROM IOWANS

Iowa STEM Best

Kristine Bullock – Southeast Regional Manager and
Committee Chair

STEM BEST Background

- RFP released in August 2014 with the goal of uniting expertise of public and private sector partners to strengthen the continuum from school to careers
- Based on three attributes:
 - Education driven by industry need
 - Rigorous, relevant and dynamic STEM curriculum
 - Authentic partnerships
- 5 programs awarded December 2014 with implementation by fall 2015

Agenda

- STEM Best Background
- Highlights of awarded programs
- Panelist Q&A
- Upcoming opportunities



GREATNESS
STEMS
FROM IOWANS

IT Academy

Bettendorf/Pleasant Valley

Presenter:

Bettendorf/ PV CS Academy

Bettendorf & Pleasant Valley Community School Districts are partnering to create a Computer Science Academy

Currently the two districts have around 9 academies that link students with community college and business partners

After completing coursework at the high school, students will work through a course at an area college before entering a real-world experience with industry professionals

- Bettendorf has adopted AP Computer Science Track
- PV is using PLTW Computer Science Coursework

GREATNESS
STEMS
FROM IOWANS



GREATNESS
STEMS
FROM IOWANS

Iowa BIG

Cedar Rapids/College Community

Presenter: Trace Pickering & Shawn Cornally

BIG



IOWABIG.ORG

- 83 *Enrolled* Students from 5 high schools
- Custom software for full CBE immersion
- All 39 projects built with a community partner
- On average 800 extra human-hours committed weekly
- 100 Active Business, Nonprofit, & Gov't Agencies

GREATNESS
STEMS
FROM IOWANS



GREATNESS
STEMS
FROM IOWANS

STEM Innovator

Kirkwood/University of Iowa/College Community/Clear Creek Amana/Iowa
City/Regina/Solon/Tipton/West Branch

Presenter: Leslie Flynn & Dawn Bowlus

The logo for STEM Innovator features a stylized sunburst or starburst design on the left, composed of several curved, overlapping shapes in shades of orange, yellow, blue, and green. To the right of this graphic, the word "STEM" is written in a large, bold, black sans-serif font, followed by the word "Innovator" in a smaller, regular weight of the same font.

STEM Innovator

Course connecting students with STEM industry partners to engage in innovation and entrepreneurship while developing solutions to problems of student and community interest.

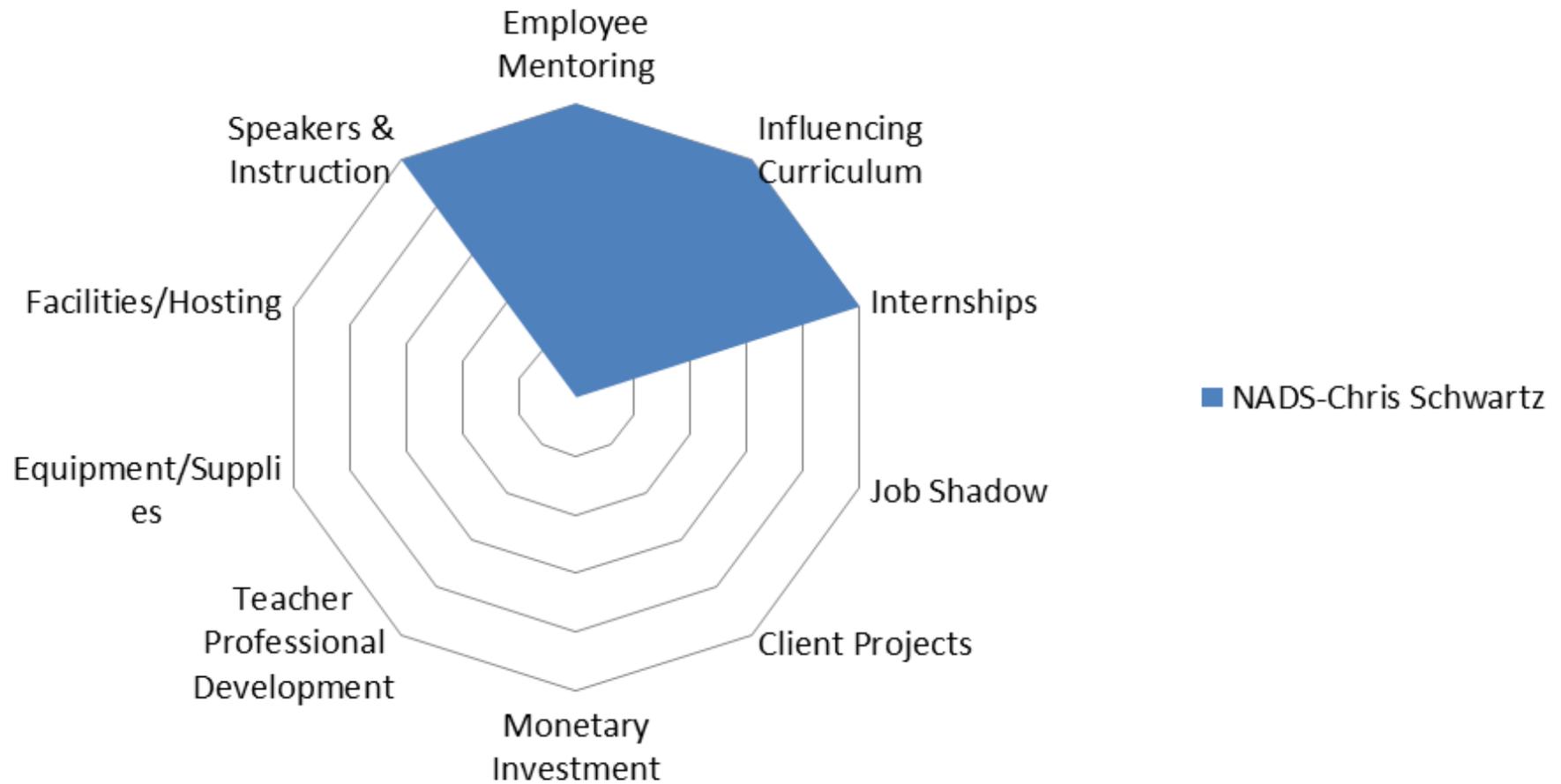
- New UI/KCC Center opening fall 2015, 500 students, at UI Research Park
- 7 school districts, 40+ STEM community partners UI/KCC/District faculty
- Curriculum designed by all partners
- Triple Credit: UI/KCC/HS
- **Example Project:** National Advanced Driving Simulator, UI Hospital Emergency Medicine, Communications, Computer-Aided Design Center



GREATNESS
STEMS
FROM IOWANS

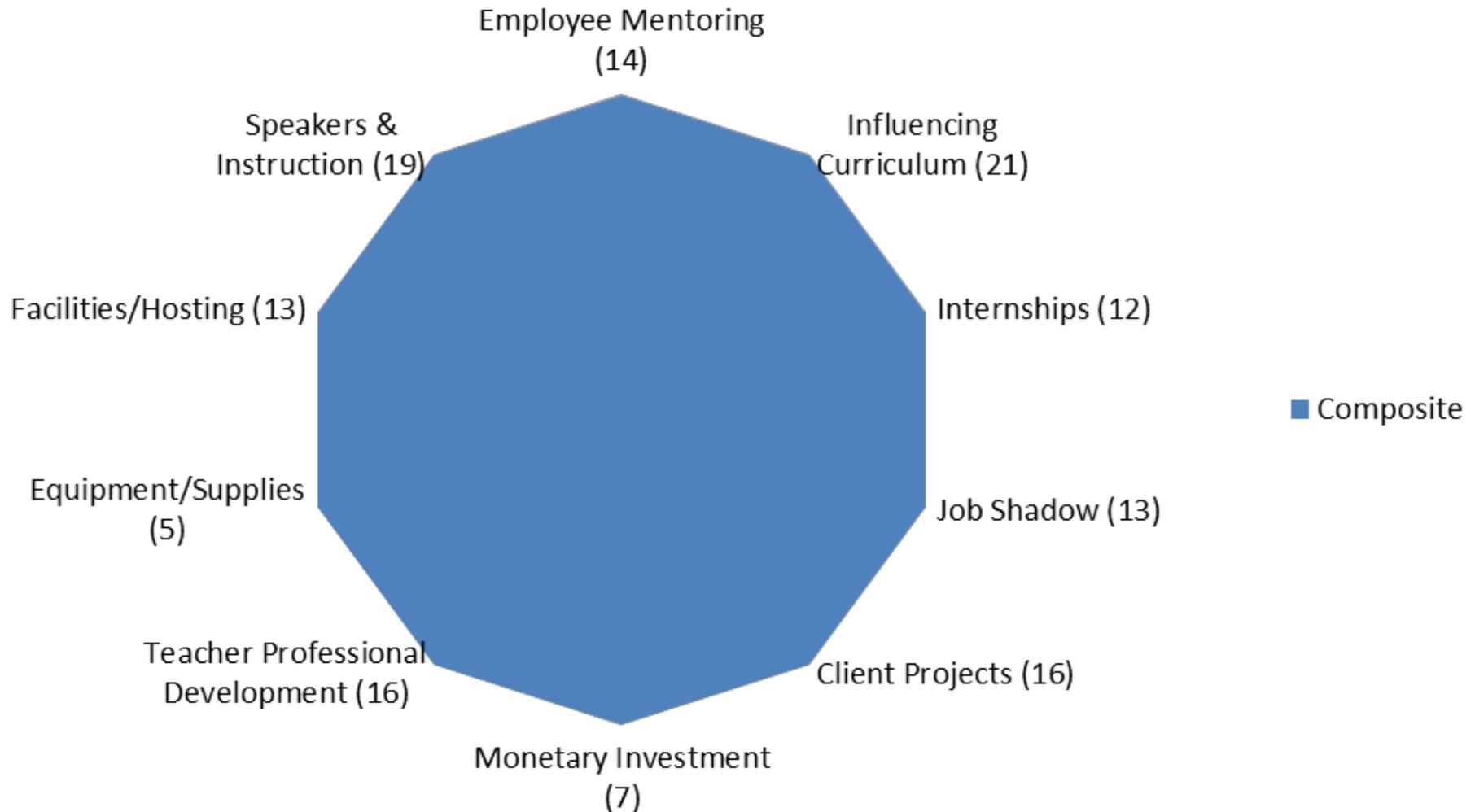
Partner Collaborative Efforts

NADS-Chris Schwartz



Additions: career guidance, International/Diversity collaboration, role models, foundational content knowledge (IT, STEM), outreach to underrepresented groups, supply data for analysis, pilot ideas, advisory board, advertisement, project management adviser, assessment development (feedback, 29 partners to date)

Composite





GREATNESS
STEMS
FROM IOWANS

Northeast CSD

Presenter:

Northeast STEM Education

Our mission is to provide our students with an innovative, problem solving and discovery based environment that focuses on real world application!

Our current reality.....

- IT Club
 - Game App Design
 - Cyber defense
 - Multi-Media
 - Robot Competition

GREATNESS
STEMS
FROM IOWANS

Northeast STEM Education

Our Vision

- Create an Active Learning Center to support the STEM “way of thinking”
- Develop and sustain business partners to provide innovative and authentic learning opportunities for all
- Engage staff in professional development opportunities



GREATNESS
STEMS
FROM IOWANS



GREATNESS
STEMS
FROM IOWANS

Rocket Manufacturing

Rock Valley

Presenter:

Rock Valley

- City Population of 3,500
- Manufacturing/Ag Economy
- Enrollment = 800 PK-12
- 75% Caucasian
25% Hispanic
- Over 40% Free/Reduced



GREATNESS
STEMS
FROM IOWANS

Rocket Manufacturing



- Student-run manufacturing business
- Parts low in number & low in liability
- Marketing, Design, Production, Accounting
- Aleva-Strum, WI – Cardinal Manufacturing
- Real-world, hands-on experience...*no more widgets*
- AIW
- Students – school-to-work, 2yr degree, 4yr degree

- 2 years of planning – construction and program
- Community Needs
- Key to success: Community Support
 - Community Support
 - Local Partnerships

GREATNESS
STEMS
FROM IOWANS

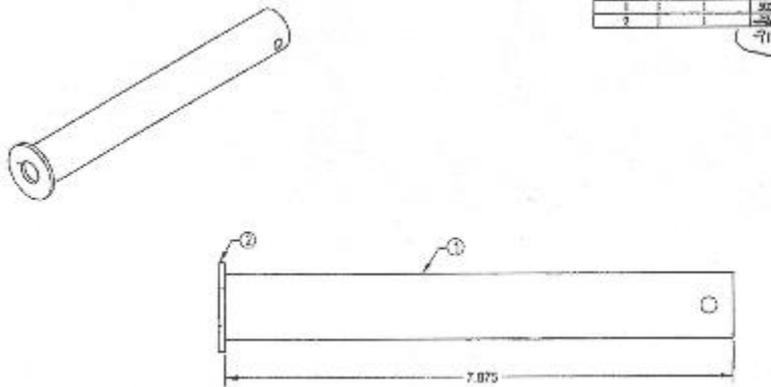
Rocket Manufacturing

- It's a job
- 20 students
- Prerequisite Coursework
- Application Process
- 21st Century Skills
- Secondary Benefits already seen
- 10,000 square foot building



GREATNESS
STEMS
FROM IOWANS

Rocket Manufacturing Parts



GREATNESS
STEMS
FROM IOWANS

Panel Q&A

- Tammy Chelf & Chris Like – Bettendorf/Pleasant Valley
- Trace Pickering & Shawn Cornally – Cedar Rapids/College Community
- Leslie Flynn & Dawn Bowlus – University of Iowa
- Alicia Christiansen – Northeast
- Chad Janzen – Rock Valley

Contact

Kristine Bullock

SE STEM Hub Manager

University of Iowa and Kirkwood Community College

Kristine-bullock@uiowa.edu

319-335-4042

se.iowastem.org

GREATNESS
STEMS
FROM IOWANS