

An intersection point for stakeholders in STEM education

April 2016

Akron Training Center

2016 Summer & Fall
Workshop Offerings

PBL Design
June 20-22

Digital Literacy
October 18-20

PBL Design
November 15-17

Limited seats remain!
Register today at
www.akronstem.org

Inside this issue:

<i>Akron Welcomes International Leaders</i>	2
<i>ASM Sponsors Free Materials Teachers Camp</i>	2
<i>How to Model a Collaborative Classroom</i>	2
<i>Akron, Central Ohio and Dayton Hubs Share Best Practices</i>	3
<i>Around the Hub...</i>	3
<i>Spotlight on Healthcare Introduces New Pathways</i>	3
<i>Training Center Spotlight: Digital Literacy</i>	4

The EX[L] Center at the University of Akron Dives into Problem-Based Learning

Twenty two area high school students recently participated in a community-centered problem-based learning unit sponsored by the EX[L] Center at the University of Akron called “What’s Your Problem?”. The Experiential Learning Center for Entrepreneurship & Civic Engagement is designed to help students gain hands-on experience on projects by working with faculty and community partners.

This program brought together students from Akron STEM, Archbishop Hoban, Buchtel, Our Lady of the Elms, and St. Vincent St. Mary High Schools. Students were split into four teams and asked to identify a community problem that was important to them, understand the range of potential solutions, develop a solution based on the strengths of the team and name a community partner working on the same issue.

Homelessness, hunger, opiate abuse, and urban



“When they see problems, they will be able to say they actually know how to attack problems.”

EX[L] Founding Director, Jeff Hoffman

farming topped the list of issues to attack during the one week immersion. After identifying a community partner already addressing the issue, every group was given a \$1,250 grant to support new programming.

Group Overtake Hunger designed a soup kitchen to feed the homeless, providing culinary experience to the population they would serve. “South Street Ministries provides emergency food and shelter,” said Archbishop Hoban High School student

Alex Sapp, 16, of Barberton. “But we would all be working for the greater good even if there is some overlap.”

Project Director, Ian Schwarber, said real-world problem solving experience was his goal for the high school learners. “These students stepped up to the challenge and exceeded all expectations because they actually learned how to listen and collaborate. We have shed light on how real change can occur when we decide to put taking credit aside and work as a team to improve our community.”

For more information on UA’s EX[L] Center, visit uakron.edu/exl.

Akron Welcomes Women Leaders in International Visitor Leadership Program

Learners at the National Inventors Hall of Fame® STEM Middle and High School recently learned firsthand that education around the world looks much different than in their classrooms, but one thing is certain—everyone loves a design challenge.

Nine female entrepreneurs from Europe, Africa and Asia got to try their luck in a typical 5th grade design challenge while visiting the NIHF schools to see how Akron encourages creativity and entrepreneurship in the classroom. Engineering Learning Coach, Perkins Pringle, gave the leaders a simple challenge to design the tallest free standing structure using 30 K'Nex pieces in just three minutes. The leaders squealed with excitement

and got right to work.

“Encouraging creativity in the classroom creates a culture of collaboration and teamwork,” said Pringle. “These international business leaders had the chance to exercise their creative muscle and I think they had a lot of fun doing it.”

In addition to engineering, the delegation experienced an 8th grade art presentation of learning, met with 9th grade learners working on an international peace project, and heard from student entrepreneurs designing personal health awareness t-shirts. Learner-led tours of the schools ended with lots of hugs, selfies, and email exchanges.

The two-week trip was sponsored by



the US Department of State's International Visitor Leadership Program and Global Ties Akron to provide examples of entrepreneurial efforts in the U.S., particularly those initiated by women.

ASM Sponsors Free Materials Teachers Camp

The Akron-chapter of ASM International is inviting all middle and high school science and engineering



teachers to attend their *free* summer materials camp, which will be held at the University of Akron July 18th through the 22nd.

Participants will learn how to engage students using simple, low-cost experiments that can be integrated into existing lesson plans. Topics include metals, polymers and plastics, ceramics and composites, and applied career fields in materials.

The camp is completely free, includes lunch and snacks, and provides 4 CEUs for full participation. Two graduate credits may be purchased upon completion for \$250 through the University of Missouri-Kansas City.

Spots are limited and filling up fast.

For more information, visit www.asmfoundation.org

How to Model a Collaborative Classroom

Much to the chagrin of teachers everywhere, collaborative learning doesn't come naturally to most students. In order to prepare learners to be 21st century problem solvers, we must model collaborative learning in the classroom. Here are some quick strategies to give you a leg up.

1) Think- Pair- Share: Introduce a topic to the students. Require them to think quietly about the top-

ic, then pair with a partner to discuss. The partners may then share out their ideas to the class. This differentiated instruction strategy requires learners to formulate individual ideas.

2) Jigsaw Technique: This strategy puts some small responsibility on each learner in a way that makes students dependent on one another for success. Divide the learners into

groups and give each student an authentic role. No group can complete the assignment without full participation from each member.

3) Fish Bowl: Emphasizing listening and thoughtful contributions, half of the learners sit in a circle while the other half stand behind and observe. Only one learner may speak at a time. After contributing, they rotate with their observer.

Akron, Central Ohio and Dayton Hubs Share Best Practices

Akron Hub learning coaches took a whirlwind tour through the Central Ohio and Dayton Hubs last month to visit their colleagues and swap best practices.

Nineteen teachers and administrators spanning grades 5 through 12 visited seven STEM schools in five districts in just 36 hours. Some volunteers even gave up an in-service compensation day!

Akron Hub Manager, Annie Hanson, organized the trip. “The goal for the trip was to introduce our STEM learning coaches across the state so that they could share and learn from one another. Our coaches returned to Akron ready to tackle



NIHF STEM Middle School learning coaches take a selfie break at the Global Impact STEM Academy in Springfield, Ohio.

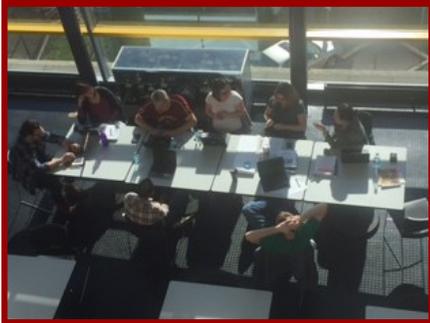
challenges with a renewed energy and enthusiasm.”

“Our network of STEM schools in Ohio is exceptional and when our teachers can collaborate and share best practices, everyone wins.”

Annie Hanson, Akron Hub Manager

There are seven Hubs in the Ohio STEM Learning Network dedicated to enhancing STEM teaching and learning. More information may be found at: www.osln.org/hubs

Around the Hub...



Valley STEM + ME2, slated to open in Fall 2016 in Youngstown, sent teachers and administrators to the Problem-Based Learning Design workshop in March at the Akron Training Center.



Wadsworth Franklin Elementary 4th graders learn about circuitry in this cardboard house project.



NIHF STEM Middle School learners pose with their roller coaster design for the Genius Rally held at the Cultural Center for the Arts in Canton by Arts in Stark. The teams from Akron Public Schools won the “Best School District” trophy.

Spotlight on Healthcare Introduces Students to New Pathways

STEM High hosted its first in a series of Spotlight Career Fairs during advisory in January. The goal was to introduce learners to the range of career paths in a single field. Learners assembled in the gymnasium for an hour-long career fair where they interacted with representatives from a wide range of careers, including veterinary, dentistry, and medicine,

environmental health, chemical engineering, athletic training, nutrition, biomedical sales, mental health, and more. Over twenty community organizations participated.

The career fair was followed by an hour-long hands-on session hosted by each community organization. Gavin Scott Salon of Stow sent an esthetician to demonstrate facials

while Akron General Hospital brought training mannequins to exhibit emergency medical procedures in the field. Learners discovered that the range of career offerings related to healthcare is much broader than just being a doctor or a nurse. Future spotlight days are planned to include topics such as engineering, computer science or art and design.

OHIO STEM LEARNING NETWORK AKRON HUB

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Founded in 2009, the OSLN Akron Hub is one of seven regional hubs across Ohio facilitating STEM partnerships between schools, higher education institutions, businesses, non-profits, government organizations and community groups. The OSLN Akron Hub primarily oversees and creates educational opportunities and community collaborations across a 13-county region in Northeast Ohio, and the Hub works with STEM stakeholders in other parts of the state and beyond.

As part of its mission, the OSLN Akron Hub provides high quality, effective STEM professional development services to educators wanting to learn relevant and sustainable STEM practices to incorporate innovative and creative concepts in their classrooms. Ultimately, the goal is to impact students, so they may become creative problem solvers, 21st century thinkers and entrepreneurs through the use of rigorous STEM content.

For more information, contact:

Annie Hanson, Akron Hub Manager

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Training Center Spotlight: Digital Literacy

Provided by the Ohio STEM Learning Network (OSLN)-Akron Hub, this three-day, 21st Century learning professional experience focuses on designing a digitally informed environment of collaboration among learners. Visual art, information literacy, and technology standards integrate to support learning using creative and critical thinking in PBL, STEM, research, and technology, as well as inquiry settings in all content areas.

This course sets the stage for the use of technology, internet, research applications, instructional tools,

and Web 2.0 presentation resources. Working in a collaborative environment, participants will be able to directly translate these techniques and tools into their classroom setting. This workshop provides participants with time to develop and incorporate the digital literacy model and will include time for assessment and reflection.



Workshop participants will:

- Design, organize and implement protocols for technology use
- Identify tools and resources to generate a cyber safety unit
- Determine digital learning outcomes and develop a web evaluation process
- Explore and create using Web 2.0 tools in order to communicate in multiple formats
- Initiate an online PLC and communicate in a sustainable professional setting

**October 18-20, 2016
8am to 4pm**

Register:
<http://tinyurl.com/DigLitFall2016>