



Vol. 7 Issue #1

January 2015

In This Issue**K-16 STEM in the NEWS**

[Toledo Technology Academy Ranked One Of The Best STEM Schools](#)

Community STEM in the NEWS

[Maumee Valley Country Day School Teacher Receives STEM Grant from FirstEnergy](#)

STEM Opportunities

[Ohio JSHS](#)

[Professional Development Opportunity: Climate Hope](#)

[Blizzard Bags For K-12 Available Through INFOhio](#)

[Electricity Common Core Workshop](#)

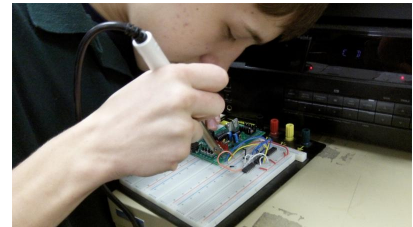
[The Ohio Educational Technology Conference](#)

[Lowe's Toolbox for Education Spring 2015 Cycle Is Now Open!](#)

K-16 STEM in the NEWS**Toledo Technology Academy Ranked One Of The Best STEM Schools**

Toledo Technology Academy (TTA) was recently named one of the best STEM schools in the country by the U.S. News and World Report. TTA placed in the top 15 percent or "Bronze" division of high schools in the nation.

U.S. News and World Report calculated the rankings based on student performance on state exit exams and internationally available exams on college-level course work. According to their website, the fourth annual Best High Schools for STEM rankings methodology was developed by U.S. News and World Report and is based on the key principle that students at the Best High Schools for STEM must participate in and pass a robust curriculum of college-level math and science courses. The publication reviewed 500 public high schools to identify the best in math and science education.



The Toledo Technology Academy is a 7-12 magnet school that utilizes a pre-engineering curriculum established by Project Lead the Way. The curriculum encompasses the traditional academic subjects of English, history, science, and math as well as a variety of technical courses such as: robotics; technical communications; technical sketching; CAD (computer-aided design); electromechanical devices; electronics; fluid power; mechanical power transmission devices; programming; machining, welding, and fabrication; and computer-integrated manufacturing.

[NCTM Announces Two Grant Opportunities](#)

[The DuPont Challenge - Science Essay Competition](#)

[2015 Discovery Education 3M Young Scientist Challenge](#)

[2015 E4U2 Video Competition](#)

Students at TTA obtain internships with local manufacturers such as General Motors and Ohio Belting and Transmission, which serve as business partners to mentor students. Additionally, students gain valuable hands-on work experience through the internships, which is an integral part of the school's success story.

Toledo Technology Academy was also recognized earlier this month as a "School of Promise" by the State of Ohio. State Superintendent Dr. Richard Ross visited the school and recognized the students for their performance on the 2014 state report card.

**NWO Hands-On
STEM Activity**

[Ice Cores](#)



Community STEM in the NEWS

Maumee Valley Country Day School Teacher Receives STEM Grant from FirstEnergy

Brian Soash, a fifth and sixth grade math and science teacher at Maumee Valley Country Day School (MVCDS), has been awarded a STEM Classroom Grant by FirstEnergy. The purpose of the grant is to encourage creativity in learning and teacher professional development in STEM education. Educators and youth group leaders in communities served by FirstEnergy's electric operating companies were encouraged to apply, and Soash's project "Maumee Valley Makerspace" was chosen as a grant recipient.

Soash's project is a year-long initiative for approximately 72 fifth and sixth grade students. Under the guidance of their teachers, the students will use the engineering process to create and refine their own inventions. The students will document this process of creating, evaluating, and refining their designs throughout the year, and they will share their documentation in a school blog, in presentations, and at the MVCDS Maker Faire to be held in March 2015. The Makerspace, in addition to being an area where students can pursue their passions and invent, will also enhance and support classroom instruction. As students investigate electricity, renewable resources, and circuitry, the Makerspace materials requested through the grant will allow students to create their own circuits, and investigate the properties of electricity.



In order to be considered for a FirstEnergy STEM grant, Soash had to submit an application detailing his idea, the major objectives of his project, how he will evaluate each of those objectives, the steps he will take to implement the project, a brief time schedule for the project, the state educational standards the project will support, the procedures that will be used to determine the success of the project, and how the project will be shared with other students and educators. Soash also had to submit a detailed list of the materials needed to complete the project. The Makerspace will inspire students to creatively problem solve as well as make meaningful contributions toward personally relevant issues.

Photo: Left to Right

Brian Soash, 5th and 6th grade math and science teacher at Maumee Valley

Meg Adams, from First Energy/Toledo Edison

Gary Boehm, Head of School at Maumee Valley

Article and photo courtesy of Melissa Kuhl, Maumee Valley Country Day School

[\[back to top\]](#)

STEM Opportunities

Ohio JSHS

March 18-20, 2015

The 52nd Annual Ohio Junior Science and Humanities Symposium

***Attention Junior High and High School Students and Teachers:
Call for Research Papers and Posters!***

The Ohio Junior Science and Humanities Symposium is an annual event held on the campus of BGSU in which Ohio students in grades 7 to 12 compete for scholarships and recognition by presenting the results of their original research efforts before a panel of judges and an audience of their peers. The OJSHS is part of the national Junior Science and Humanities Symposia Program, which is jointly sponsored by the United States Departments of the Army, Navy, and Air Force, in cooperation with leading research universities throughout the nation.



More information can be found at www.ojshs.org

Professional Development Opportunity: Climate Hope



Presenters: Jodi Haney, BGSU & Xcite Learning & Sam Evans, Maumee High School

Climate change: It is real, it is bad, and it is us! And now for some good news ... we **CAN** do something about it! Join us in conversation and action planning to reduce the consequences of climate change. Develop "Do Something" strategies at the individual, local, regional, and national levels to combat this issue. Learn how to talk with others about climate change by instilling **HOPE over fear**. We HOPE to see you at this session! Teachers, invite your students to attend this talk with you to enrich the conversation by including tomorrow's leaders!

Cost: \$10

Wednesday, January 28, 6:30 - 8 pm

at 577 Foundation, 577 East Front Street, Perrysburg, Ohio

[Click here](#) to download a flyer (pdf)

You may register at: www.577foundation.org

(go to Get Involved/Take A Class/Climate Hope)



Blizzard Bags For K-12 Available Through INFOhio

While the Blizzard Bags for the different grade bands center on different themes, they all support Ohio's New Learning Standards, especially research standards. Following the Dimensions of Inquiry

(<http://imatrix.infohio.org/dimensions>) students create and explore essential questions, locate and evaluate information, apply and share information with others, and reflect on their learning.

Go to <http://libguides.infohio.org> to see a list of all the Blizzard Bags and choose the appropriate grade level. Review the tabs, especially the Teacher Guide, where information can be found on standards, differentiation, assessments, cross-curricular connections, etc.

Electricity Common Core Workshop

Presented by Cat's Science Club

January 27, 2015

4:00 - 7:00 PM

Robert Fulton Ag Center

Engage Students' Interest

Bring hands-on science into the classroom with exciting activities that will captivate students' interest. Why just read about it when you could do it?

Enjoy the shocking excitement kids will have learning while investigating and discovering about electricity.

Build your own batteries!

Make your own generator!

Construct your own mini wind turbine!



Participants will connect Common Core to their curriculum, discover new ways to peak students' curiosity, and build models to demonstrate basic principles of electricity.

[Click here](#) to download a brochure (pdf)

For more information visit <http://www.catsscienceclub.com>



P-20: Educating Ohio's Future

Ohio Educational Technology Conference

February 10-12, 2015 | Greater Columbus Convention Center

The Ohio Educational Technology Conference is the largest P-20 state educational technology conference in the nation. Each year, more than 5,000 educational technology professionals and enthusiasts come together to explore the forefront of P-20 learning and innovation in Ohio.

For more information: <http://oetc.ohio.gov/Home.aspx>



The Lowe's Toolbox for Education grant program Spring 2015 cycle is now open. The **deadline** for submitting applications for this grant cycle is **February 13, 2015 11:59pm EST**.

Lowe's will donate up to \$5 million to public schools and public school parent teacher groups - at as many as 1,000 different public schools per school year.

Lowe's Charitable and Educational Foundation (LCEF) is dedicated to helping teachers and parent-teacher groups achieve even more for schools.

<http://www.toolboxforeducation.com>

NCTM Announces Two Grant Opportunities

PreK-8 Pre-Service Teacher Action Research Grant

The National Council of Teachers of Mathematics is inviting proposals from pre-K teachers to support a collaborative action research project by university faculty, pre-service teachers, and classroom teachers seeking to improve their understanding of mathematics in preK-8 classrooms.



Primary emphasis will be placed on collaboration among a team of researchers consisting of university, elementary/middle school teachers, and pre-service teachers from the undergraduate ranks. Research should be designed, implemented, and completed with a focus on enhancing the teaching and/or learning of mathematics in grades preK-8.

A single grant of up to \$3,000 will be awarded. Grant funds should be used to support project expenses to plan and carry out the research.

<http://www.nctm.org/resources/content.aspx?id=15479>

Prospective Middle School Mathematics Teacher Course Work Scholarships

The purpose of this scholarship is to provide financial support to college or university students preparing for teaching middle school mathematics. For 2014-2015, one scholarship, with a maximum value of \$3,000, will be awarded to a person currently completing their junior year of college or university, scheduling for full-time study at a four- or five-year college or university in the next academic year, and pursuing a career goal of becoming a certified teacher of middle school mathematics.

<http://www.nctm.org/resources/content.aspx?id=15899>



The DuPont Challenge, North America's premier science essay competition, encourages students to delve deep into interests in science, technology, engineering, and math with creativity and purpose. This is a growing world that faces new challenges each day, and DuPont wants students to share ideas for how science can help keep the global population supplied with food, safety, and clean energy.

Essays must be between 700 to 1,000 words in length, include a list of research sources, and fall under one of these four categories:

- Together, we can feed the world.
- Together, we can build a secure energy future.

- Together, we can protect people and the environment.
- Together, we can be innovative anywhere.

<http://thechallenge.dupont.com/essay/index.php>

2015 Discovery Education 3M Young Scientist Challenge



Now Open for Entries!

The Discovery Education 3M Young Scientist Challenge is the nation's premier science competition for grades 5-8. This one-of-a-kind video competition has sparked the imaginations of hundreds of thousands of students and enhanced science exploration, innovation and communication across the United States.

The Discovery Education 3M Young Scientist Challenge is now open for entries. By registering young scientists today, they'll get a jumpstart on the 2015 competition - including extra time to brainstorm, access to registrant tip emails, and more!

<http://www.youngscientistchallenge.com/about>

Call For Video Submissions - 2015 E4U2 Video Competition



The National Academy of Engineering has outlined 14 game-changing opportunities for the 21st century called the Grand Challenges for Engineering. They invite individuals or teams to review the 14 Grand Challenges, and then create and submit a 1 to 2 minute video that shows how achieving one or more of the NAE Grand Challenges for Engineering will lead to a more sustainable, healthy, secure, and/or joyous world!

The E4U2 Video Contest is open for video submissions from January 5, 2015 to March 2, 2015.

Visit www.e4uvideocontest.org to learn more!

[\[back to top\]](#)

NWO Hands-On STEM Activity

This month's hands-on activity is from Discovery Educations' Siemens Science Day

<http://www.siemensscienceday.com/pdf/IceCores.pdf>

Ice Cores

Hands-on Activity 4th - 6th grade students

Summary:

Students will evaluate water ice balloons to reconstruct recent climate history by sorting different layers of evidence.

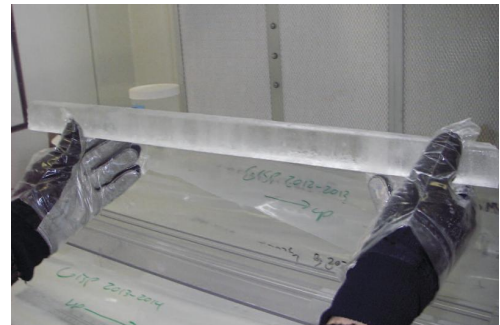
Overview:

Topic: Climate Trends

Real World Science Topics: A comparison of the ice balloon to an ice core taken from a glacier. An understanding of how glaciologists remove ice cores from glaciers.

Objective:

After completing this activity, students should have a better understanding of the way scientists study ice cores in order to learn the history of Earth's climate change.



Download a pdf of the complete hands-on activity by [clicking here!](#)

[\[back to top\]](#)

Share Your Story!

Thank you for your support of NWO, our programs, our activities, and our partners. Please send us updates, press releases, and news of STEM happenings at your school, district, or organization. Please submit to nwo@bgsu.edu. We are always looking for great STEM education stories to feature in upcoming newsletters.

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