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In This Issue**K-16 STEM in the NEWS**[Another Amazing Ohio JSHS!](#)**Community STEM in the NEWS**[You Be the Chemist Challenge Offers Students Exciting Competition](#)**STEM Opportunities**[Pre-Registration Is Now Open For Literacy In The Park!](#)[Looking For State Of The Art Project Based Learning \[PBL\] Professional Development?](#)[NASA Mission Earth: Fusing GLOBE with NASA Assets to Build Systemic Innovation in STEM Education](#)[The Maker Movement and Maker Promise](#)[GLOBE SATELLITES](#)**K-16 STEM in the NEWS****Another Amazing Ohio JSHS!**

Each year, Ohio's top high school students and selected eighth-grade students arrive on the campus of Bowling Green State University to participate in the annual Ohio Junior Science and Humanities Symposium (Ohio JSHS). The 53rd annual event was patterned after research sessions at professional meetings where both paper and poster sessions are presented, and was held on March 16 through March 18. In addition to the student presenters, area high school students, teachers, and administrators attended the sessions to network and learn about cutting-edge research. More than 100 students from throughout the state presented their research on topics from all areas of science, technology, engineering and mathematics (STEM). Faculty members from BGSU, Lourdes



University and the University of Toledo, judged the Paper and Poster sessions, with more than \$18,000 in scholarship money and cash awards for the winners at stake. The top three paper presenters all received scholarships, and the top five paper presenters receive an all-expense-paid trip to the National JSHS to take place in Dayton, Ohio, April 27-28. The top two presenters at the National JSHS will have the opportunity to compete for additional scholarships. Please see complete list of winners below.



The event is sponsored

[Conference and GLOBE REGIONAL SCIENCE FAIR SATELLITES Conference](#)

[Ohio Academy of Science Needs Judges!](#)

[Battelle Education Literacy Design Collaborative Free Science Modules](#)

[Fueling Education Program](#)

[Connected Science Learning](#)

[Research Experience for STEM Educators and Teachers \(RESET\)](#)

[Connected Math Training \(CMP3\)](#)

[SUMMER STEM CAMP INFO](#)

NWO Hands-On STEM Activity

[See How IT GROWS: Earth System in a Bottle](#)



by the U.S. Army Research Office, U.S. Office of Naval Research, and U.S. Air Force Research

Office, with continued support from Bowling Green State University (BGSU) and the Northwest Ohio Center for Excellence in STEM Education (NWO). The event began with a traditional and patriotic presentation by BGSU's Pershing Rifles Color Guard, followed by welcoming remarks from BGSU President Dr. Mary Ellen Mazey, Lt. Col. Steven Hopingardner, U.S. Army Commander and BGSU Professor of Military Science; and Blythe Tipping, Ohio JSHS Co-Coordinator and Science Teacher at Sylvania Southview High School.

While the focus is on presenting the research they've conducted, students do have time to have fun and socialize while experiencing a college campus. The students enjoyed ice-skating at the BGSU Ice Arena and on Thursday evening, keynote speaker Dr. Gabriel Matney, Associate Professor in the School of Teaching and Learning, entertained the students with an engaging lecture on **STEM and the Humanities: Greater than the Sum of Their Parts**. "I love this event," stated Jessica Belcher, Associate Director of Finance and Operations at NWO, coordinator of the OJSHS. "It is great to talk with all the kids about their amazing research and to see them making new friends while at the event."



Ohio JSHS concluded on Friday, March 18 with an awards ceremony that began with the closing presentation from the BGSU Pershing Rifles Color Guard. Dr. Emilio Duran, Ohio JSHS Director and BGSU Associate Professor stated, "We bring such wonderfully talented students to our campus each year, and it is truly astonishing to see what these students have accomplished. They are all winners with bright futures."

Congratulations to the 2016 OJSHS Poster and Paper Research Award Winners!

Research Poster Awards: Junior High Division

Best in Show: Katelynn Smith, Hilltop Junior High School

People's Choice Award: Aspen Schneller, Buckeye Valley Middle School

Research Poster Awards: High School Division

1st Place 9th - 10th Grade: Gretchen Lee, Pettisville High School

2nd Place 9th - 10th Grade: Daniel Wolfe, Louisville High School

Honorable Mention 9th - 10th Grade: Alexander Serpen, Sylvania Southview High School

1st Place 11th - 12th Grade: Sarah Yu, Gahanna Lincoln High School

2nd Place 11th - 12th Grade: Veronica Roth, Hilltop High School

Honorable Mention 11th - 12th Grade: Kameron Clinton, Sylvania Northview High School

"Best in Show" 9th - 12th Grade Overall: Arukshita Goel, Sylvania Southview High School

Research Paper Awards

1st Place: Graham Lane, University School

2nd Place: Savannah Cofer, Columbus Academy

3rd Place: Dhweeja Dasarathy, Hawken School

4th Place: Rama Balasubramaniam, Dublin Coffman High School

5th Place: Chinmay Bakshi, William Mason High School

1st Alternate: Alan Fong, Sylvania Southview High School

2nd Alternate: Jacob Dennis, Pettisville High School

Thomas Alva Edison Award: Jordan Skates, Pettisville High School

Next year the event will be held on March 15 - 17, please visit: www.ojshs.org for more information.

Community STEM in the NEWS

You Be the Chemist Challenge Offers Students Exciting Competition

The You Be The Chemist Challenge® (YBTC) is a fun and innovative academic competition that engages 5-8 grade students in learning about important chemistry concepts, discoveries, and chemical safety. Challenge competitions are exciting events that take place across the country, encouraging the collaboration of community organizations, schools, and the chemical industry, as together, they educate students about the benefits and value of chemistry and its place in everyday life.

This year's statewide competition took place at Bowsher High School in Toledo on April 9. Students from all over Ohio came together to try to earn the top prize of representing Ohio at the national YBTC in Philadelphia in June. This year's winner was Tom Shlomi from Palmer Holland who is home schooled, and earning 2nd Place was Pranav Jois from Lakota Schools in Lakota, Ohio. Earning third place was Aristo Liu from Copley Fairlawn Middle School in Copley, OH and Fourth place was awarded to Priya Bhatt from Ottawa Hills School in Toledo. All participants earned certificates, and prizes were also awarded to the top three students.



Students prepared for the challenge by studying free online study guides from The Chemical Education Foundation. Students are also encouraged to study the Periodic Table and Periodic Table of Atomic Weights,

as well as find additional examples and explanations of chemistry concepts from outside resources. YBTC Challenge questions ask the students to connect concepts and apply their knowledge of chemistry to both familiar and unfamiliar situations.

The Chemical Education Foundation aims to help students succeed at every level of the Challenge and expose them to the fascinating world of chemistry as it applies to everyday life. Competition questions are based on an overall understanding of chemistry and science concepts presented in these study materials, as well as the relationships among concepts. The materials align to the Next Generation Science Standards (NGSS) and include science concepts covered in many state assessments.

Jeff Stevenson from Toledo's Imagination Station entertained the students with exciting chemistry demonstrations in between the rounds of questions. Dr. Robert Mendehall, Curriculum Director of Toledo Public Schools, who helps sponsor the program stated, "I would like to thank the sponsors for their generosity and continued support of You Be The Chemist. It's wonderful to see young students excited about chemistry. I look forward to making next year even better and bringing more schools on board."

The Local and State Challenge events were sponsored by BGSU's NWO, the Toledo Section of the American Chemical Society, Toledo Public Schools, PVS-Nolwood Chemicals, Inc., and Imagination Station.

Photo: (L to R) - Pranav Jois, Tom Shlomi, Priya Bhatt, and Aristo Liu

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

STEM Opportunities

Pre-Registration Is Now Open For Literacy In The Park!

SATURDAY, APRIL 23, 2016

10 a.m. - 1 p.m.

Perry Field House, Bowling Green State University

Beat the lines and pre-register your family for the 2016 Literacy in the Park



Visit our website at bgsu.edu/LiteracyinthePark and click on the **PRE-REGISTER** link to sign up.

Literacy in the Park is a free family event with activities and presentations geared for the entire family. This year's event features notable children's author **Todd Parr**. Each family receives a goodie bag with a Todd Parr book to take home.

Looking For State Of The Art Project Based Learning [PBL] Professional Development?

May 11 - 12, 2016 in Perrysburg, OH provided by Xcite Learning

Space is Limited to 24 participants [8 spots left]

REGISTER TODAY @ <http://goo.gl/forms/GMLDnSM3y0>

Designed for Grades 4 -12 Science Teachers & Informal Educators -
However, this is very much a Multidisciplinary TEAM Experience - bring
your peers!



PBL in the Science Classroom [Grades 4 -12]

Examine PBL as a powerful and effective inquiry-based and interdisciplinary learning framework. Learn how to:

- Access a national database of hundreds of ready- to-go multidisciplinary PBL units
- Modify and/or design your PBL units to meet the needs of your students and satisfy state and national learning standards for your subject area and grade level
- Implement PBL EFFECTIVELY
- Design PBL assessments to show what your kids actually know!

Dates: Wednesday & Thursday, May 11 & 12

Location: The 577 Foundation, Perrysburg, OH

Time: 8:00 am - 3:30 pm

COST: \$275/participant

[Team Discounts. \$250/participant for school districts sending 2+ to the workshop]

Each Participant Receives:

- The PBL Starter Kit, the leading Buck Institute on Education (BIE) "how to" book to guide classroom design and implementation
- CEU Certificates [14 contact hours]
- An OPTION to earn 1 graduate credit hour thru Ashland University (\$195 additional cost)
- Plenty of good food and great conversation
- An unforgettable retreat experience hosted at the beautiful 577 Foundation Main House located in historic Perrysburg.

Contact **Jodi Haney** at jhaney@xcitelearning.com or **419.350.8469** for more information, or visit the website at <http://www.xcitelearning.com/> for upcoming workshops.

REGISTER TODAY @ <http://goo.gl/forms/GMLDnSM3y0>

NASA Mission Earth: Fusing GLOBE with NASA Assets to Build Systemic Innovation in STEM Education

The purpose of the grant is to train grades 5 -12 teachers in the GLOBE protocols and NASA resources and assist in the implementation of these resources into the classroom curriculum.



GLOBE SATELLITES Training

When: June 27-July 1, 2016, 8 am to 5:00 pm each day

Where: The University of Toledo, Main Campus

Who: Science, Mathematics or Technology Teachers (grades 5-12)

<https://www.surveymonkey.com/r/SATELLITES2016>

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

The Maker Movement and Maker Promise

Digital Promise and **Maker Ed**, as part of President Obama's Nation of Maker's Initiative, are challenging school leaders around the country to sign the "Maker Promise" (<http://www.makerpromise.org/>), a concrete commitment to do three things; (1) dedicate a space for maker learning in schools or in the community; (2) designate a staffer or community member as the point person on developing the school's approach to maker learning; and (3) host or participate in one showcase event where students can demonstrate what they made to the community.

Participating schools will then become part of a national network of maker schools, and have access to many resources. The results of the campaign will be announced during the National Week of Making in June.

Only school leaders can actually sign the Promise. District leaders can sign on behalf of one or more schools in their district. Educators and other interested parties can still sign-up to stay engaged, but they can't sign the Promise.



Maker learning is any learning activity that incorporates student creativity and results in a novel physical or digital creation. So, in this context, a "makerspace" can include anything from a computer lab used to teach coding to an innovative school library to a full-scale fab lab.

Additionally, if a school can fulfill the three obligations, it should only take 30-60 seconds to sign up.

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

GLOBE SATELLITES Conference and GLOBE REGIONAL SCIENCE FAIR SATELLITES Conference

SATELLITES Conference

When: Friday May 6, 2016: 4-8 pm

Where: Penta Career Center, Perrysburg, Ohio

Who: SATELLITES Teachers and their students

Projects must use some type of data and geospatial technology

GLOBE Regional Science Fair - includes 10 states in the Midwest

When: Friday and Saturday, May 13-14, 2016, poster presentations Saturday morning.

Where: University of Toledo

Who: Each teacher may bring 6 students maximum

Projects must use GLOBE data

Contact: **Kevin P. Czajkowski**; Department of Geography and Planning, MS 140, University of Toledo; **419-530-4274**

kevin.czajkowski@utoledo.edu

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

Ohio Academy of Science Needs Judges!

STATE SCIENCE DAY - Saturday, May 14, 2016, French Field House at The Ohio State University, Columbus Ohio. Entering its 68th year, State Science Day remains one of the largest Science Fairs in the country. Over 1,200 students will again compete at OSU for sponsored scholarships and awards. For complete information visit: <http://www.ohiosci.org/ssd-2016>



This event requires over 400 judges, and Judge Registration will be handled through STEM Wizard. Please visit: <http://www.ohiosci.org/ssd-judge-form> for instructions on how to register.

Battelle Education Literacy Design Collaborative Free Science Modules



BATTELLE Education

Battelle has partnered with the Literacy Design Collaborative to create a free collection of standards-aligned, literacy rich STEM lessons & modules for middle and high-school students based on the work Battelle designers, engineers, and scientists do every day. Those templates were then given to five amazing teachers who brought them to life in the classroom. For more information and to access the modules, please visit:

<http://sciencecollection ldc.org/>

Fueling Education Program

CITGO Petroleum Corporation invites elementary and middle school teachers to enter its fourth annual **Fueling Education Program**, focusing on the importance of engaging young students in the STEM subjects.

Through April 30, teachers in grades K - 8 are encouraged to visit: www.fuelingeducation.com for the chance to win STEM-related prizes to benefit classrooms, including the Grand Prize of an in-school teacher training session with 'America's Science Teacher,' best-selling author, and Emmy-award winning television personality, Steve Spangler.



Connected Science Learning, a free online journal for STEM educators, seeks to bridge the gap between informal and traditional education settings by highlighting effective programs that enhance STEM learning. The inaugural issue, released March 15, includes articles on a museum partnership with Denver schools and Omaha's "Zoo Academy." Sign up to receive the newsletter at <http://csl.nsta.org/>

Research Experience for STEM Educators and Teachers (RESET)

RESET is a new Army Educational Outreach Program that is designed to provide teachers and educators, from high need areas working with underserved populations, a summer research experience at participating Army Laboratories. The goal is to reinforce teachers' content knowledge through research experience



and interactions with Army and DoD scientists and engineers and translate this knowledge and experience into enhanced STEM research curricula. There will be an online PD curriculum during the summer as well as an opportunity for a select number of teachers to conduct research at an Army lab. Stipends will be provided and travel will be covered for those selected for the on-site research.

More information about the program can be found: <http://goo.gl/F1maAO>

Connected Math Training (CMP3)

This training will be hosted by the Dayton Regional STEM School Training Center and Wright State University. Math teachers in **grades 5-8** are welcome, as well as others interested in learning more about CMP. CMP3 has been written to accommodate Common Core and is available to the public this summer. Teachers new to CMP, teachers who have used CMP2, and teachers who are adopting CMP3 will benefit from this professional development.

When: Monday, August 1 - Thursday, August 4, 8:30-4:30 each day

Contact: Dr. Brian Boyd, Mathematics Education, Wright State University: brian.boyd@wright.edu, 937-775-3275 and Jim Mamer, Middle School Math Teacher and CMP Teacher Trainer: caraandjim@woh.rr.com

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

SUMMER STEM CAMP INFO

There are numerous opportunities to enhance summer STEM learning for students of all ages at a variety of camps all over northwest Ohio. Below please find a sampling of STEM camps; please click on the appropriate link for more information and to register.

Notre Dame Academy is offering girls entering grades 5-12 a fun way to explore STEM this summer! Learning STEM in a welcoming all-girl environment gives girls a chance build confidence about their skills. For more details about the camps: www.nda.org and click on the Summer tab. Camps include Introduction to Robotics, Girls Code, and CSI!

Toledo MetroParks: <http://metroparkstoledo.com/discover/special-events-and-programs/summer-camps/>

Imagination Station: <http://imaginationstationtoledo.org/content/summercamp/>

BGSU and Imagination Station: BGSU will offer an Imagination Station summer science camp on their campus : <http://files.ctctcdn.com/2fa10179001/a2760d2b-d202-4895-a4fd-15852143e990.pdf>

Toledo Zoo: toledozoo.org/camps

Lourdes University: <http://lourdes.edu/sciencecamp>

Maumee Valley Country Day: MaumeeValleySummerTime.org

Penta Career Center STEM Camp: www.pentacareercenter.org

Schedel Gardens Summer Science Camp: <http://www.schedel-gardens.org/2014/05/19/schedel-summer-science-camp/>

St. Francis DeSales High School Robotics and Summer Camp: www.sfsknights.org

St. John's Jesuit: www.sjtitans.org/summercamps

Toledo Technology Academy & TPS offer STEM, Natural Science camps and other camps, please inquire by email: careertech@TPS.org or 419.671.8301.

Toledo Botanical Garden: toledogarden.org/summer2016

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

NWO Hands-On STEM Activity

A Swing and a Miss: The Mathematics of Baseball

Grade Level: 4-9

What you need:

- Ruler (one for each team of 2 students)
- Table to record student information

What you do:

1. Divide the students into pairs. One student holds the ruler by its end between the other student's separated thumb and index finger. (Make sure the ruler is facing the same way for each attempt.)
2. The student releases the ruler and both carefully measure at what increment the second student is able to catch the ruler.
3. Do this ten times and calculate an average "time" (the inch or centimeter mark where the students caught the ruler).
4. All teams then share their data to find an average value for the entire class, for boys only, for girls only, or other parameters. Graph results in a scatter plot



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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