



Vol. 9 Issue #4

April 2017

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BGSU once again served as the host university for the Ohio Junior Science & Humanities Symposium (Ohio JSHS) on March 15 - 17, 2017. This statewide event annually showcases the outstanding work of high school students in the state of Ohio who have accomplished cutting-edge research in the areas of science and the humanities.

The JSHS is patterned after research sessions at professional meetings where both paper and poster sessions take place.

A distinguished panel of judges selected the awards for presentations in the eight paper sessions held on Thursday and Friday. Poster judging occurred concurrently on Thursday. Each poster presenter interacted with a faculty member or graduate student in the discipline of the student's research project.



In addition to the student presentations, the symposium's activities encouraged students and their teachers to network, share, and gain knowledge on the diverse array of research topics represented. Faculty members from BGSU, Lourdes University, and the University of Toledo and staff from the United States Department of Agriculture, Forest Service served as judges for the competition. Undergraduate and graduate students served as session presiders with high school teachers serving as

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Sponsorship awards come from the United States Army, Navy, and Air Force, the Northwest Ohio Center for Excellence in STEM Education, BGSU's College of Arts and Sciences, College of Education and Human Development, Department of Biological Sciences, Department of Chemistry, and Department of Physics and Astronomy. The Army Educational Outreach Program (AEOP) and the Academy of Applied Science sponsor the National JSHS as well as the 48 regional symposia.

After an evening of ice-skating and social interaction on Wednesday, the program continued on both Thursday and Friday. BGSU's Pershing Rifles Color Guard initiated the program at 8:30 a.m. on Thursday with the presentation of the colors.

Opening remarks were given by: Dr. Rodney Rogers, Provost and Senior Vice President, BGSU; LTC Steven Hopingardner, U.S. Army, Commander/Professor, Military Science, BGSU; and Ms. Blythe Tipping, OJSHS Co-Coordinator, Sylvania Southview High School.

Many special events were also planned for the participants of the symposium. Students had the opportunity to tour laboratory research facilities and interact with university faculty and students.

On Thursday evening, the keynote speaker at the Ohio JSHS banquet was Dr. Andy Jorgensen, Associate Professor of Chemistry & Environmental Sciences, University of Toledo. His presentation on Climate Change both interested and excited the students and adults in attendance.

New to OJSHS this year was the presence of 44 Toledo Public Schools students and their teachers who participated in a poster showcase. The Army Educational Outreach Program (AEOP) provided the opportunity through a strategic outreach grant project for students to conduct scientific research, analyze data, and present their work in the poster format of Ohio JSHS. One of the goals of the grant project is to further the reach of students exposed to scientific research. The AEOP, in collaboration with Battelle,



moderators for the paper sessions.

At stake was more than \$18,000 in scholarship money and cash awards for the awardees of the Ohio JSHS. The top three paper presenters all receive scholarships and the top five presenters receive an all-expense paid trip to the National JSHS to take place in San Diego, CA from April 26 - 30.



The top two Ohio presenters will have the opportunity to present their research in the paper sessions at the National JSHS for more scholarship

opportunities. The third through fifth place paper awardees at the Ohio JSHS will represent Ohio in the poster session of the National JSHS.





awarded grants to three organizations and institutions to expand student participation in enriching STEM exploration and learning, particularly for underserved students. AEOP offers students and teachers Army-sponsored programs that effectively engage, inspire and attract the next generation of STEM talent.

Please visit: www.ojshs.org for information on the program and a complete list of winners for 2017 and <http://www.bgsu.edu/nwo/programs/ohio-junior-science-and-humanities-symposium.html> for photos from the event.

"I love this event," stated Jessica Belcher, Associate Director of Finance and Operations at NWO, co-coordinator of OJSHS. "It is great to see all the amazing research from these students."

Dr. Emilio Duran, longtime Ohio JSHS Director and BGSU Associate Professor stated, "It's always a pleasure to hold this competition each year and to see what these students have accomplished. We also enjoyed hosting the new participants to the competition from TPS. All the students are winners with bright futures, and we are already looking forward to next year!"

Community STEM in the NEWS

Record Breaking Year for Ohio STEM School Designation

On March 28, the Ohio STEM Committee of the Ohio Department of Education met to review applications for state designation as an Ohio STEM school. This panel of policymakers, agency directors, and business leaders considered 30 applications from schools. Designation recognizes a school's design as an effective place for STEM learning and invites the school into the OSLN network.

Thirty applications marks more than triple the number last year and a record for Ohio. This groundswell of interest in STEM practices follows a year of major advances for STEM in the state including a statewide campaign on solutions to the opioid crisis, a state law change allowing elementary schools to be recognized for STEM, and local stories of change in schools across the state.

"This is a day of celebration." stated David Burns, Director of Battelle STEM Innovation Networks and the Ohio STEM Learning Network (OSLN).

The OSLN network started in 2008 with five schools. The addition of new schools mean OSLN has grown more than nine-fold to 47 different schools across the state. The model brings local businesses, colleges and educators together to create schools that bring STEM to life in a unique way in each community.

For more information on OSLN, please visit: www.osln.org

NWO is one of seven designated OSLN STEM hubs in Ohio.

The following are the newest members of the Ohio STEM Learning Network:

1. Herbert Mills Elementary
2. Mater Dei Academy
3. Northwestern Elementary School
4. Springmill STEM Elementary
5. St. Mary of the Immaculate Conception (Avon)

6. St. Sebastian Parish School
7. Summit STEM Elementary
8. Willoughby Eastlake School of Innovation
9. St. Ambrose School*
10. Hull Prairie Intermediate School*
11. Canal Winchester Middle School*
12. Ranger High Tech Academy*



* These schools are designated with a requirement to host a site visit when the proposed programs are fully implemented.

Hull Prairie Intermediate School (HPI) in Perrysburg is an intermediate school currently under construction that will open next school year and will house approximately 800 fifth and sixth graders. The unique and state-of-the-art school will have collaborative learning and technology enhances spaces as well as an innovate STEM Learning Center and Makerspace on each floor. The building will also have an outdoor prairie lab, art studio and physical education center.

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STEM Opportunities

Summer Camp Information

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.

Challenger Learning Center of Lake Erie West

Challenger Center for Space Science Education is a global nonprofit organization created in 1986 by the families of the Challenger 51-L crew tragically lost during the Challenger's tenth mission. Dedicated to the educational spirit of that mission, the network of centers engage students in STEM education.

Summer camp info: <http://www.eslakeeriewest.org/challenger-learning-center>

BGSU and Imagination Station Summer Camps

<http://imaginationstationtoledo.org/workshops-camps/summer-camp>

Toledo Zoo Summer Camps

<https://www.toledozoo.org/summer-camps>

Penta Career Center STEM Camp

www.pentacareercenter.org

Schedel Arboretum

<http://www.schedel-gardens.org/event/summer-science-camp-entering-middle-school/>

Toledo MetroParks

<https://metroparkstoledo.com/discover/special-events-and-programs/summer-camps/>

Lourdes University

<http://www.lourdes.edu/academics/college-of-arts-and-sciences/summer-science-camps/>

Notre Dame Academy

<http://www.nda.org/summer-academy-2017/>

Toledo Technology Academy

<https://sites.google.com/toledotechnologyacademy.org/tta/summer-camp>

STEMx Webinar: Fund STEM Instruction

April 19 @4pm



DonorsChoose.org strives to make it easy to help a classroom in need, moving the nation closer to where students in every community have the tools and experiences they need for a great education. Teachers in 75% of the country's public schools have requested classroom materials through DonorsChoose.org, receiving more than half a billion dollars in classroom supplies over the last decade.

Join Katie Vallas, DonorsChoose.org's School & Partnership Engagement Manager, to learn about how STEM teachers can get the funds needed for everything from graphing calculators and microscopes to field trips. Special funding initiatives that specifically support STEM educators, like the recent Science Everywhere Innovation Challenge will also be discussed.

For more information: <https://goo.gl/zPcxVu>

Literacy in the Park at BGSU

Free Family Event to be held **Saturday, April 29, 2017**, from **10:00 a.m.** - **1:00 p.m.** at the Perry Field House

**FEATURING THE WORK OF POPULAR CHILDREN'S AUTHOR
PATRICIA POLACCO**



Literacy in the Park has expanded to address all of the different ways literacy is important in our lives. Families will have opportunities to engage in activities about financial literacy, nutritional literacy, physical education literacy and many other forms of literacy that can be found in their lives and communities. Enjoy a snack and literacy-based activities for the entire family!

For more information: <http://www.bgsu.edu/events/literacy-in-the-park.html>

Full STEAM Ahead: A Week of Make U and Make U Jr. Programs @

Toledo Library

The Toledo Lucas County Public Library system, in partnership with area organizations and with generous support from the Library Legacy Foundation, will be celebrating **STEAM - Science, Technology, Engineering, Art, and Mathematics, throughout the week of May 1 - 7**. The Library will offer STEAM-based Make U programming, speakers, and activities for all ages throughout our libraries as well as in the community!

Full STEAM Ahead A Week of Make U and Make U Jr. Programs @ Your Library May 1 - 7

A list of all the great programs at various Library locations can be found [here](#).

The week will also feature a special author event and Creativity Lab open house.

Nicholas Provenzano, aka "**The Nerdy Teacher**," will be our Maker Week keynote speaker at Main Library on the evening of **Wednesday, May 3rd**. The event is open to the public and we look forward to having area makers, DIYers, students, and STEM/STEAM educators and leaders attend. A reception with light refreshments will precede the presentation in the Library's new Creativity Lab. A book sale and signing will follow the presentation.



An Evening with Nick Provenzano
FREE admission
Wednesday, May 3, 2017
6:00 p.m. Creativity Lab Open House (w/ refreshments)
7:00 p.m. Presentation
McMaster Center, Main Library
325 Michigan St.

For more information on Nick Provenzano, aka "The Nerdy Teacher" [click here](#).

For more information on this event, please contact: Ben Malczewski, Media Relations Coordinator,
419.259.5193 / 419.343.4109

ITIP (Instructional Technology Integration Partnership) Ohio Teacher Grant

ITIP Ohio provides grant opportunities to Ohio teachers to reward excellence in teaching and to promote innovative practices. ITIP invites all Ohio PreK-12 teachers to submit an application.



The process is simple: create a video/screencast that showcases an exemplary lesson and demonstrates the innovative ways you are using technology with students; summarize the next tech-enhanced lesson you want to facilitate in a classroom; and explain how you will utilize the technology resource you are asking this grant program to fund. **Grant cycle closes on May 15.**

For more information: <https://sites.google.com/a/itipohio.org/itip/teacher-grant>

Xcite Learning STEM Professional Development Opportunity

**The GLOBE Program for Grades PreK - 12 Teachers & Informal Educators
GLOBE - Atmosphere & Aerosols**

\$100 SCHOLARSHIPS available to the first 20 participants to register ~ REGISTER TODAY!

This program is aimed at helping young children be excellent sky watchers by observing clouds and the colors of the sky. Older students can study other atmospheric measurements such as temperature, precipitation, humidity, and pressure. Students can report their sky and weather observations as citizen scientists to projects that share student generated data with the world... including NASA!!

The program integrates literacy with science, and all teachers will get a classroom set of storybook readers and hands on materials to DO GLOBE back in the classroom. JOIN US and MAKE THIS HAPPEN FOR YOUR STUDENTS!



Wednesday & Thursday, May 3rd and 4th

The 577 Foundation, Perrysburg, OH
8:00 am - 3:00 pm

COST: \$175 [Regularly \$275/teacher, but Xcite Learning earned a grant from The GLOBE Program & NASA allowing us to offer a \$100 scholarship to the first 20 teachers!]

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

REGISTER TODAY @

<https://goo.gl/forms/HURlqVB19QXdusUh1>

North2H Augmented Reality Sandbox for Grades 3-12

Hands-in workshop for teams to build an Augmented Reality Sandbox. STEAM appropriate workshop for up to 3 teachers per team. Sandbox includes travel base wagon, wood for sandbox construction, mounting brackets, projector, Xbox Kinect,

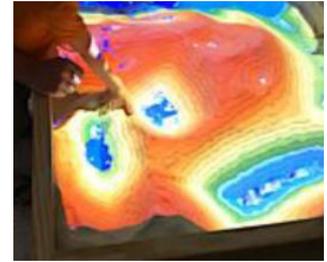


desktop computer pre-loaded with Linux. Learn more about reality sandboxes at:
<http://tinyurl.com/NORT2HSand>

Cost is \$3,500 for 3 teachers with additional teachers \$99 each
Summit County ESC on May 3

For registration, please contact Sally Gibson @ **330-945-5600**,
sallyg@summitesc.org.

For more information see website at: www.summitesc.org.



Lourdes University - Appold Planetarium

A Solar Eclipse is coming this summer! Be prepared with special teacher resources from the Appold Planetarium

Visit the webpage: www.lourdes.edu/Eclipse

Coordinator of the Appold Planetarium

Lourdes University

419.517.8897

www.lourdes.edu/planetarium

www.facebook.com/AppoldPlanetarium



FREE K'nex Teachers' Guides And Lesson Plans

Each product in the K'NEX Education line comes with a comprehensive Teachers' Guide with lesson plans and extension activities. For students, the easy to follow color-coded instructions allow them to work independently or in groups. Teachers can download comprehensive lesson plans in PDF with key terms, definitions, work flows and more. The Teachers' Guides are also available on CD Rom with most K'NEX Education products.

Download these guides as PDFs for free at <http://www.knexeducation.com/education-resources/>

Project Based Learning Ohio Institute

This summer, teachers can be students too! Take a few days out of summer and sign up for the 2017 Project-Based Learning Ohio Institute, July 25-27 on the campus of New Albany-Plain Local Schools near Columbus. The Institute is an internationally attended academy that gives teachers a chance to learn and create new ways of educating and engaging students to get them ready for college and careers.



The [Educational Service Center of Central Ohio](#) has partnered with the [Buck Institute for Education](#) since 2009 and started PBL Ohio in 2015. The PBL Ohio Institute offers four different academies, all taught by nationally certified Buck Institute for Education staff. Learn the basics of project-based learning including experiencing a project's process firsthand, video-analyzing good teaching habits and putting those habits to use, discovering PBL tools, exploring project libraries and more.

<http://www.pbloho.com/schedule1.html>

Ohio Corn and Wheat Summer workshops/Free Professional Development

Each workshop includes: 18 contact hours/1.8 CEUs or the opportunity to purchase 1 Ashland Graduate Credit, free hotel/food, over \$400 worth of free lab materials to take back to your classroom, industry dinner, industry tour, and 2 days of STEM lab activities centered around Ohio agriculture.



Event dates:

June 22-23, 2017 at Global Impact STEM Academy,
Springfield, OH

July 13-14, 2017 at University of Findlay, Findlay, OH

These questions will be explored:

- How can the science of agriculture be incorporated into our classrooms?
- How will agricultural careers shape our students' future?
- How will biotechnology, changing climates, and increasing populations impact agriculture?
- How is agriculture Improving soil integrity and water quality?
- Participants will participate in an industry field trip, talk with experts, and practice a variety of labs related to biotechnology, water, soil and plant science. Each participant will receive over \$400 worth of free classroom science materials. Ashland graduate credit is available with on-site registration. All expenses paid, including materials, food, and one-night shared hotel room. Sponsored by Ohio Corn & Wheat.

The event registrations are listed at: Ohiocorneducation.org/events Or the website: Ohiocorneducation.org

MakerMinded is Coming To Ohio

In August, the MakerMinded program will launch to show Ohio students the STEM side of modern manufacturing. In MakerMinded, students complete interactive lessons where they learn about STEM and manufacturing, earning points for their school.

Tennessee STEM Innovation Network launched the program there just last year. They've already attracted 100 schools and 1,000+ active users.

If a free portfolio of STEM lessons sounds like something that would be right for your school, sign up here: <https://goo.gl/9bJmVa>

The program was jointly announced by Lightweight Innovations for Tomorrow (LIFT) and Battelle.

Shell Science Teaching Award

The National Science Teachers Association, with support from the Shell Oil Company, is inviting nominations for the Shell Science Teaching Award, an annual program that recognizes an outstanding classroom science teacher (K-12) who has had a positive impact on his or her students, school, and community through exemplary classroom science teaching.

The award includes a \$10,000 cash prize and an all-expense paid trip to attend NSTA's national conference; two finalists will also receive all-expense-paid trips to the conference.

Nominees must be classroom teachers whose responsibilities include teaching science. In addition, nominees must have a minimum of eight years of experience (not including the current school year) as a teacher of science, and must teach in a private or public school in the United States, U.S. Territories, Department of Defense schools, or in Canada.

Visit the [NSTA website \(need link\)](#) for complete program guidelines, information about previous winners, an informational webinar, and nomination instructions.

<http://static.nsta.org/pdfs/awards/Shell.pdf>

Toshiba America Foundation is Accepting Applications

Toshiba America Foundation is accepting applications from middle- and high-school teachers who are passionate about making science and mathematics more engaging for their students.



Grant proposals for amounts of up to \$5,000 are accepted on a rolling basis. However, the foundation will consider larger grant amounts twice a year - on August 1 and February 1. Summer projects or afterschool programs will not be considered, nor will salaries, facility maintenance, textbooks, video production, audio-visual equipment (e.g., electronic white boards, Smartboards, document projectors, student response systems), or education research. In addition, grants will not be awarded for the purchase of computer hardware.

Science and math teachers in public or private (nonprofit) schools are eligible to apply. Endorsement from a school official is required.

See the Toshiba America Foundation website for complete program guidelines and application instructions. <http://www.toshiba.com/taf/612.jsp>

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NWO STEM Activity

This month's STEM activity is an introduction to human reaction times and their role in hitting baseballs and brought to you by Rachel Clink.

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 To 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!](#)

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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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