

Advancing science, technology, engineering, and mathematics education for people of all ages.



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K-16 STEM in the NEWS

Ohio Students Earn Awards at National Junior Science and Humanities Symposium

The National Junior Science and Humanities Symposium (JSHS) is a Department of Defense (DoD) - U.S. Army, Navy and Air Force - STEM competition that brings together 230 high school students who qualify for attendance at 47 regional symposia held on university campuses nationwide, in Puerto Rico, and in cooperation with the DoD Dependents Schools in Europe and the Pacific. JSHS encourages high school students to conduct original research in STEM and aims to prepare and support students to contribute as future scientists and engineers on behalf of or directly for the Department of Defense or to advance the nation's scientific and technological progress.

The National JSHS was held in Albuquerque in April, with students competing in both oral and poster research presentations. The event offered unique activities for JSHS participants which included:

- DoD Research Program Panel, a panel of graduate-level researchers in DoD-sponsored programs to address undergraduate and graduate level opportunities for JSHS alumni;
- Education and Career Round Table Discussions
- Tours of U.S. Air Force Base Laboratory, University of New Mexico laboratories, Sandia National Laboratories, New Mexico Institute of Mining and Technology, and others
- Opportunities to attain a sense of achievement and self-confidence resulting

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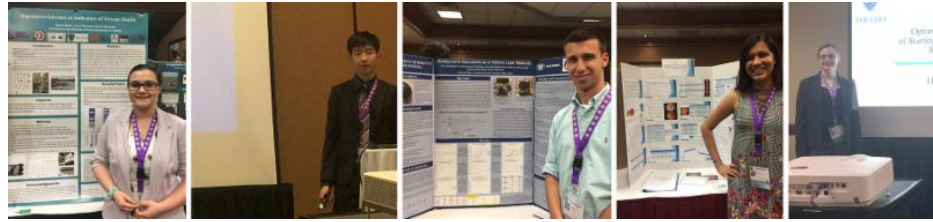
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from interaction with students from other schools and regions and with professional researchers and educators



The event culminated with a Banquet and Awards Ceremony that featured recognition for all participants and the announcement of undergraduate, tuition-based scholarships awarded to 24 students in eight categories of National JSHS competition.

Five students from the Ohio JSHS earned the all-expense paid trip to National JSHS by placing in the Ohio regional Symposium held at Bowling Green State University on March 13-15.

The JSHS Program is a collaborative effort between the research offices of the United States Departments of the Army, Navy, and Air Force, the National Science Teachers Association, and leading research universities throughout the nation. The Department of Defense generously provides funding for the National Symposium and JSHS scholarships.

Two of the five students from Ohio won awards at the national competition:

Poster /Mathematics and Computer Science

1st place: Laalitya Acharya, William Mason High School, Mason, Ohio

"Ocula A Neural Network to Detect the Severity of Diabetic Retinopathy for Early Prognosis of Diabetes"

Poster/ Engineering and Technology

3rd place: Garrett Blum, University School, Hunting Valley, Ohio

"Honeycomb Structures as A Helmet Liner Material: Use of Neural Network Modeling to Predict Helmet Liner Safety for Known and Experimental Helmet Liner Materials"

For more information on JSHS, please visit: <http://www.jshs.org/about.html>. Ohio will hold the annual JSHS competition in March of 2020.

Community STEM in the NEWS

Chase STEMM Earns STEM Designation and Other Awards

The Ohio Department of Education recently named the Chase STEMM Academy of Toledo Public Schools a national "School to Watch" and an Ohio "School to Watch". Chase STEMM principal Jack Hunter and other school leaders will travel to Washington D.C. in June to receive the awards and to be nationally recognized for academic excellence.

These awards demonstrate the school's



remarkable improvement under Mr. Hunter's dynamic leadership. CHASE also received the Ohio Department of Education's Momentum award, which recognizes schools for exceeding expectations in student growth for the year.



In addition, Chase STEMM, along with thirteen other schools across the state and three from northwest Ohio, earned the Ohio Department of Education's STEM school designation. Chase is the first school in the Toledo Public Schools District to earn the designation.

The Ohio STEM Committee of the Ohio Department of Education met to review applications for state designation as an Ohio STEM or STEAM school. The committee is a panel of policymakers, agency directors, and business leaders.

According to Battelle, thirty applications from schools across Ohio were considered. The designation recognizes a school's design as an effective place for STEM learning and invites the school into the Ohio STEM Learning Network, a public-private partnership managed by Battelle. The Northwest Ohio Center for Excellence in STEM Education at BGSU is one of the seven OSLN hubs in Ohio.

STEM education provides students with a deep understanding of STEM subjects while incorporating inquiry-based learning and design thinking in all subjects. Several schools earned a STEAM designation in place of STEM to emphasize their inclusion of the arts.

The list of schools approved for STEM or STEAM designation includes:

- Bigelow Hill Intermediate (Findlay City Schools)
- Chase STEMM Academy (Toledo Public Schools)
- Chillicothe Primary School (Chillicothe City School District)
- East Canton High School (Osnaburg Local School District)
- Franklin Elementary School (Wadsworth City Schools)
- Gearity Professional Development School (Cleveland Heights-University Heights City School District)
- Herbert Mills STEM Elementary (Reynoldsburg City Schools)
- John Marshall IT (Cleveland Metropolitan School District)
- Northeast Ohio IMPACT Academy (Campbell City Schools) - with conditions
- St. Angela Merici Parish School (Cleveland Catholic)
- St. Mary School-Vermillion (Toledo Catholic)
- St. Paul School (Columbus Catholic)
- Waterville Primary (Anthony Wayne Local Schools)
- Winchester Trail Elementary School (Canal Winchester Local Schools)

The Ohio STEM Learning Network was created in 2008 with five STEM schools. With the addition of the new STEM schools, the network grows to 69 total STEM schools. The schools are supported by seven regional hubs throughout the state. More information on OSLN can be found on their website at: <https://www.osln.org/>

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STEM Opportunities

Leveraging the TI-84 Plus CE Graphing Calculator for ACT[®] Test Success

This workshop is designed for **mathematics educators** who want to learn to leverage TI-84 Plus CE technology skills to drive student success on the ACT[®] test by exploring released test items. Educators will cover the main elements of the ACT[®] test, discuss strategies for helping students to better understand key topics, and emphasize techniques for teaching with TI-84 Plus CE technology.



By the end of the workshop, participants should feel comfortable with:

- Leveraging the TI-84 Plus CE graphing calculator for exam questions in key categories such as Number & Quantity, Algebra, Functions, Geometry, and Statistics & Probability
- Highlighting the key content areas on the ACT[®] test and adjusting mathematics instruction accordingly
- Implementing test preparation strategies in the mathematics classroom and using pre-made activities that reinforce technology skills and deepen student understanding of key topics

Location: NWO: Northwest Ohio Center for Excellence in STEM Education at BGSU (room location TBD)

Date: June 4-June 5, 2019

Time: 8:00am -3:00pm

Host: Jenna Pollock, jpolloc@bgsu.edu

Cost: \$350 with technology included, \$300 without technology

Register: <https://education.ti.com/en/professional-development/teachers-and-teams/summer-workshops/leverage-ti-84-act-bowling-green>

BGSU Ignite Mathematics Camp

Ignite Math Camp will be offered for two dates: **June 14-15th, 2019** and **July 19-20th, 2019**.

The 2019 Ignite Mathematics Camp is a two-day camp at BGSU for 5th and 6th graders where students will engage in fun-filled experiences about teamwork, problem-solving, mathematics, and the connections between mathematics and the real world. The camp curriculum aligns with the Ohio Learning Standards for Mathematics.

Contact Chelsea Caswell at: ccaswel@bgsu.edu

To register: <https://bgsu.wufoo.com/forms/m1a2uqrb1xgpgct/>



Imagination Station Summer Camp at BGSU

Using engineering and creativity, campers design challenges with catapults, roller coasters and cars - but that's just the tip of the iceberg! Campers will also have the opportunity to make a rocket blast off, create a protective device for an egg and much more! [Click here](#) to download a flyer and registration form.

Call 419.244.2674 ext. 250

or online at <https://www.imaginationstationtoledo.org/off-site-summer-camp>



Picture Perfect STEM Lessons for Ohio Educators K-5

June 6, 2019 from 8:30 - 4:00

Sabin Hall at Liberty Center
West Chester, OH
\$199

Includes two books: Picture-Perfect STEM Lessons, K-2 and Picture-Perfect STEM Lessons, 3-5

Register by May 31 at: www.regonline.com/PPSTEMOhio

Questions? Email: workshops@pictureperfectscience.com

Graduate Credit Available!



Sustainable Science & Green Chemistry Workshop for High School Science Teachers

June 8, 2019

Location: Boman-Oddy Laboratories (BO 2059) University of Toledo

Time: 8:30am-1:30pm

Deposit: \$25

Register by: May 31 (see attached form)

For more information contact: Mollie Enright, Beyond Benign Graduate Student Liaison

Mollie.enright@rockets.utoledo.edu

Are you looking for safe engaging lessons to teach chemistry in unique affordable ways?

Join us at the University of Toledo for a hands-on live stream of Beyond Benign: Sustainable Innovations during the Central Regional Meeting of the American Chemical Society.

Green chemistry, the science of creating safe, energy efficient and non-toxic processes and products, can catalyze sustainable solutions for the environmental problems by providing an exciting lens for learning, teaching and investigating chemistry. Beyond Benign Lead Teachers alongside a live facilitator will guide you through a variety of hands-on lessons and lab activities based on real-world technologies for your classroom as you address questions like: What if we were able to grow our own packaging? How does the surface chemistry of shark scales prevent bacteria growth? Can we use blackberries to make solar cells?

Additionally, teachers learn about the opportunities for students within the Department of Chemistry at the University of Toledo and participate in a tour of the Instrumentation Center.

Download a flyer [here!](#)

Cleveland State University STEM Education Conference

The STEMM Education Center at Cleveland State University in collaboration with the Ohio Stem Learning Network (OSLN) is holding a two-day STEM conference. Engage and learn with other K-12 educators with hands-on, interactive STEM-related lessons and ideas for each of the K-4, 5-8, and 9-12 grade band levels.

When: June 12 - 10:00 am - 4:15 pm



June 13 - 9:00 am - 2:30 pm

**Where:** Cleveland State University - Wolstein Center<https://www.campusce.net/csucasal/course/course.aspx?C=1409&pc=17&mc=&sc>

Free STEM Inquiry Workshop with Texas Instruments

June 10th - 12th from 9a.m.-3p.m.

Genoa Christian Academy
 7562 Lewis Center Rd
 Westerville, OH 43082



This workshop is for educators who are starting a STEM course or after-school program in '19/'20 & educators who are looking to incorporate STEM projects into their existing classroom.

Session Content:

- Day 1: Coding Project: Learn to Code with Easy to use 10 Minute Lessons; Basic Coding Skills; Micro-controller Intro
- Day 2: STEM Project: Breadboard / Sensor Intro will include Project Ideas & Materials that you can take Back to the Classroom.
- Day 3: STEM Project/On-Ramp to Robotics: Continue developing engineering design projects; Put Math & Science in Motion while introducing a robotic vehicle to explore STEM concepts & extend Coding Opportunities.

Register by May 24, 2019

Email Michelle Grooms @ mgooms@ti.com

Please include the following:

- Name
- Email
- Phone
- School/District
- Grade & subject you teach

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

Battelle Innovation in Teachers

FREE Professional Development Fellowship Opportunity for
 Elementary Educators in Environmental Science
 Online PD - P3 Applied - June 2019



THE
 PAST FOUNDATION

Participate in 3 live, virtual discussion classes (6/4, 6/11, & 6/18)
Explore podcasts, videos and discussion forum at your own pace.

<https://www.pastfoundation.org/battelle-it-2019-elementary>

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NWO STEM Activity

Seed Germination

This month's activity was featured at the 2018 STEM in the Park and is brought to you by Anthony Wayne FFA

Objective

To observe seed germination in different environments.

What You Need

- * Ziploc bags (34)
- * Paper towels (34)
- * Seeds

What To Do

1. Dampen the paper towels.
2. Fold each paper towel into a quarter.
3. Place each paper towel into an individual ziploc bag (one folded paper towel per bag).
4. Place one to two seeds onto each paper towel in each bag and seal each bag.
5. Lay bags flat.
6. Put bags into different environments (warm, cold, dark, light, etc.)
7. Observe seed germination rates in each environment.



Questions

1. Which environment produced the fastest germinating seed?
2. Which environment produced the slowest germinating seed?
3. Why do you think you reached these results?

[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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