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**K-16 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. Together, these groups 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 18. Twenty-Four 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 5th grader Daniel Lui from Ottawa Hills Elementary and earning 2nd Place was Nathan Shan of Old Orchard Elementary in Toledo. All participants earned certificates and trophies were awarded to the top three students. PVS-Nolwood Chemicals also distributed technical devices to 1st & 2nd place students and a gift card to the 3rd place student.



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 questions ask the students to connect concepts and apply their knowledge of chemistry to both familiar and unfamiliar situations.

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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. "It is wonderful to see young students so excited about chemistry," stated Susan Stearns from NWO. "Not only that, the program is continuing to grow in Ohio with YBTC challenges being held in Ashtabula, Cleveland, Cincinnati and

Toledo."

Dr. Robert Mendehall, Curriculum Director for 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. I thought the event went extremely well due to everyone's efforts. I look forward to making next year even better and bringing more schools on board."

The local and state challenge events were sponsored by NWO, The University of Toledo's American Chemical Society, Toledo Public Schools, PVS-Nolwood Chemicals, Inc. and Imagination Station.

## Community STEM in the NEWS

### Undergraduate Students Show Research Prowess

From medical research to investigations of literary theory, undergraduate students are conducting serious scholarly work with faculty mentors. On May 6, President Mary Ellen Mazey presented awards to the winners from the recent Northwest Ohio Undergraduate Symposium for Research and Scholarship.

"What we find about students today is that it's all about being involved and being engaged, so undergraduate research and creativity projects are what it's all about," Mazey said. "It's the future of this country and the future of higher education."

Hosted on April 18 by BGSU's Center for



Undergraduate Research and Scholarship (CURS) and the Northwest Ohio Center for Excellence in STEM Education (NWO), the inaugural event brought together student researchers from BGSU and four regional partner institutions: The University of Toledo, Heidelberg University, University of Findlay and Ohio Northern University. Faculty volunteers from various BGSU departments judged student presentations. The BGSU winners were recipients of CURS grants.

The winners were presented a hand-blown glass award created by BGSU faculty member Joel O'Doriso.

"It symbolizes the student (sphere) being embraced by BGSU (orange and brown falcon talons) with the award as a whole also resembling an abstract eye, symbolizing knowledge," said Dr. Cordula Mora, CURS director.



### The top three oral presentations were given by

- BGSU education major Danielle Rains, on "Telescopes and Spyglasses: Using Literary Theories in High School Classrooms," a pedagogy book that provides information about literary theories in a way that can be applied directly to a classroom. Her faculty mentor was Dr. Tim Murnen, education.
- The University of Toledo student Alisha Sangal, on "Treating Polycystic Ovarian Syndrome with Anti-Inflammatory Therapy," a study with the potential to identify an anti-inflammatory therapy that may reduce the health risks faced by women with the condition. Her faculty mentor was Dr. Jennifer Hill, physiology/pharmacology.
- BGSU fine art (sculpture) major Shelby Sweinhagen, titled "Independent Fine Art Exhibition," which took the audience through her journey of being a curator - her career goal - and the task of creating an exhibition promoting fellow artists. Her faculty mentor was Ben Lock, art.

### The top three poster presentation winners were:

- BGSU student Nadejda Mirochnitchenko, on "Chemical Contamination Suggests Rising Ecosystem Threat in the Portage River Watershed." Her faculty mentor was Dr. Kevin McCluney, biology.
- BGSU student Diau'Monique Warner, on "Racial/Ethnic Disparities in Attachment to School and Teachers among U.S. Adolescents." Her faculty mentor was Dr. Kei Nomaguchi, sociology.
- BGSU student Jane Powell, on "Addressing the Needs of Chinese International Students: a Guidebook to BGSU." Her faculty mentor was Dr. Yiju Huang, German, Russian, and East Asian languages.

*Photo: Award winners (from left to right) Jane Powell, Shelby Sweinhagen, Danielle Rains, Nadejda Mirochnitchenko, Alisha Sangal, Diau'Monique Warner, and Cordula Mora, CURS director*

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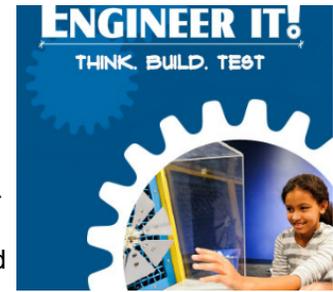
## STEM Opportunities

### Imagination Station - Engineer It! Back This Summer



## May 2 - August 9

Engineer It! is back temporarily inside Imagination Station's flexible gallery. Engineer It! will inspire and teach the whole family how to approach difficult problems with a good attitude and how to come up with new, out-of-the-box ideas. Engineer It! has everything from boats and airplanes to bridges and buildings. Participants can construct a perfect building to withstand an earthquake or to build the farthest flying paper airplane.



[Click here](#) for more info.

## Project WET & Healthy Water, Healthy People and The Wonders of Wetlands Facilitator and Educator Workshop

**When:** Wednesday and Thursday, June 10 and 11, 2015, 9am - 4pm

**Where:** Battelle Darby Creek Metro Parks Nature Center  
1415 Darby Creek Drive, Galloway, Ohio 43119

**Fee:** \$30 Registration Fee (covers 2 breakfasts, lunches and snacks. Curriculum provided by the Ohio EPA, OEE)

**Deadline to Register:** June 5, 2015

**Please register online at WMAO Registration Website:** <https://co.clickandpledge.com/advanced/default.aspx?wid=78308>



## Northwest Ohio Soil and Water Conservation District 19th Annual "Educators Extravaganza"!

**June 16-18 2015**

**SOIL: THE ROOT OF IT ALL**

**LOCATION:** 577 Foundation-577 East Front Street, Perrysburg, Ohio 43551

**COST:** This year participants may choose to attend all three days for a total of \$125, or may choose individual days at a cost of \$60 per day. Fee includes meals, refreshments, and all workshop materials! Payment must be included with your registration.



**EDUCATORS EXTRAVAGANZA**

**REGISTRATION:** Attendance is limited so pre-registration is required.

Registrations must be post-marked on or before Friday, June 5, 2015. (First come - first served basis). Further information and a map will be sent upon receipt of registration

<http://www.woodswcd.com/wp-content/uploads/2014/08/Save-the-date-flyer-BSE.jpg>



**The National Council of Teachers of Mathematics is accepting applications for its Equity in Mathematics Grants program for middle school classrooms.**

The purpose of the grant is to incorporate middle school classroom materials or lessons designed to improve the achievement of student groups with previous records of underachievement. For 2016-17, grants of up to \$8,000 each will be awarded to teachers currently teaching mathematics in grades 6-8.

The award is intended for individual classroom teachers or small groups of teachers collaborating in one grade or across grade levels. Proposals must address the following: the mathematics content as defined in the Principles and Standards for School Mathematics of NCTM; the plan for improving the achievement of targeted students; and the anticipated impact on students' achievement.

[http://www.nctm.org/Grants-and-Awards/grants/Equity-in-Mathematics-Grants-\(6-8\)/](http://www.nctm.org/Grants-and-Awards/grants/Equity-in-Mathematics-Grants-(6-8)/)



The NSTA New Science Teacher Academy is now accepting applications for the 2015-16 program year. U.S. science teachers who will be entering their second through fifth year of teaching and whose schedule includes a minimum of 51% middle or high school science are encouraged to apply. NSTA Fellows-whose participation in the Academy this year is being funded by Lockheed Martin-receive a comprehensive membership package, online mentoring, and a variety of web-based professional learning activities. Fellows will also receive financial support to attend and participate in NSTA's 2016 National Conference on Science Education in Nashville, Tennessee.

<http://www.nsta.org/academy/>

## STEM Is Elementary

### 1. Free integrated STEM lessons for grades PREK-6

<http://www.stemiselementary.com/free-integrated-lessons-grades-prek-6.html>

**2. Online elementary STEM course** will be offered beginning June 8. The course will help educators understand and experience the integration of STEM lessons into the pre-K - 6 science curricula.

The course's 10 sessions will include discussing the benefits of developing STEM literacy in school-age students; defining STEM; experiencing hands-on activities that serve as exemplars for integrating STEM concepts with academic standards for science; understanding how scientific inquiry and engineering design can guide implementing STEM projects in elementary science lessons; and reviewing resources for elementary STEM. Attendees will also develop their own integrated STEM lessons based on a science standard they teach at their grade level.

The course can be taken for non-credit for \$150 or for a semester hour of graduate credit through Ashland (OH) University for \$325. To register, visit: <http://greatpd.com/connect/course/index.php?categoryid=1>. For more information, please contact : [bob@stemiselementary.com](mailto:bob@stemiselementary.com) or **614-816-9627**.

## Summer Fun with Beach Bags and Camp INFOhio!

Parents have an easy, fun way to keep their children's reading skills sharp this summer with four new "Beach Bags" for K-3 and the first ever Camp INFOhio for grades 4-6.

The Beach Bags feature stories and activities that let children practice reading skills while learning about careers and helping the environment.



### The Beach Bags are:

- Explore the World of Work: Police Officer
- Explore the World of Work: President
- Explore the World of Work: Veterinarian
- Where Does the Garbage Go?

Camp INFOhio contains five days of reading, activities, and experiments centered on STEAM topics. STEAM stands for Science, Technology, Engineering, the Arts, and Math. Kids can try their hand at code breaking,

conduct science experiments with items they find in the kitchen, learn about roller coasters before designing their own, and create their own musical instruments.

The Beach Bags and Camp INFOhio are offered free to all Ohio families and schools by INFOhio and the Ohio Department of Education.

<https://www.infohio.org/events/news/203-summer-fun-beach-bags-for-k-3-and-camp-infohio-for-4-6>



Registration is now open for the Community Resources Workshop, a weeklong PD opportunity to be held June 15-19 that is designed to increase participants' awareness of area educational hands-on, standards-aligned, research-based teaching resources.

During the week, participants will visit The Toledo Blade, Lourdes University, Metroparks of the Toledo Area, Imagination Station, Toledo Museum of Art, Toledo Zoo, Challenger Learning Center of Lucas County, and others for special programs and more. Times for each day will be approximately 8am-4pm.

Each venue introduces exciting curricula and resources to enhance K-12 teaching in science, mathematics, language arts and social studies and introduce ways to infuse the arts, technology and 21st century skills into lessons. The registration fee is \$150 and more information <http://cosmos.bgsu.edu/CRW/CRWhome.htm>

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## Job Opportunity

### Imagination Station STEM Education Manager - Full Time

**DESCRIPTION:** This full time position is responsible for managing the development, execution and refinement of a variety of programs both inside and outside the facility. These programs include (but are not limited to): Summer camp, scout workshops, early childhood workshops, home school workshops and outreach. This position manages a team of people to deliver these programs. This position reports directly to the Assistant Director of STEM Education and requires a willingness to work flexible hours, including weekends and

evenings. For more information, please see: <http://imaginationstationtoledo.org/content/join-the-team/>

## NWO Hands-On STEM Activity

*This activity is used with permission from the U.S. Environmental Protection Agency Office of Water.*  
[www.epa.gov/safewater](http://www.epa.gov/safewater)

**There is much talk about the safety and supply of water in our community. Teachers can use this activity to help students (grades 4 - 8) explore and learn how water is filtrated.**

### Water Filtration

#### Background:

Water in lakes, rivers, and swamps often contains impurities that make it look and smell bad. The water may also contain bacteria and other microbiological organisms that can cause disease. Consequently, water from most surface sources must be "cleaned" before it can be consumed by people. Water treatment plants typically clean water by taking it through the following processes:

(1) aeration; (2) coagulation; (3) sedimentation; (4) filtration; and (5) disinfection. Demonstration projects for the first four processes are included below.



#### Objective:

To demonstrate the procedures that municipal water plants may use to purify water for drinking.

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](mailto:nwo@bgsu.edu). We are always looking for great STEM education stories to feature in upcoming newsletters.

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Find Even More Ohio STEM Education Resources

Visit our STEM clearinghouse, [nwostemresources.org](http://nwostemresources.org), for more STEM activities, programs, and information.

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