



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

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## Community STEM in the NEWS

### Toledo Zoo Named Best in the Nation

The Toledo Zoo is a partner of NWO and one of the lead organizations on the NSF funded iEvolve with STEM teacher professional development grant and it was recently named the **Best in the U.S. by USA Today Travel**. In April, USA Today Travel named it among the top 20 zoos in the nation and invited fans to vote online for their favorite from the list of semifinalists.

"We've never seen this level of participation in any previous 10 Best Readers' Choice contest," Libby McMillan, 10 Best Content Manager, said. "Despite the enormous level of participation by zoo nominees, Toledo's win was by a significant margin. 10 Best and USA TODAY feel privileged to have hosted a contest, which resonated so strongly with our readers. The votes for this category were over three times higher than the most popular contest held prior."



Jeff Sailer, the Toledo Zoo's Executive Director, praised a massive community-wide effort that inspired an outpouring of support for the Zoo. "I consider this a 'win' not just for the Zoo, but for the whole region. It's a great reminder of Toledo's many world-class cultural attractions, from the Toledo Museum of Art, University of Toledo and Toledo-Lucas County Public Library to Metroparks of the Toledo Area, Toledo Botanical Gardens and the Mud Hens," he said. "We couldn't have done it without the enthusiastic support from our community, and it proves what we can do when we all work together - even when



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we're competing against much larger metropolitan areas. This whole region loves its Zoo!"

The USA Today 10 Best organization covers 236 major metropolitan areas worldwide, offering travel tips and ideas, along with periodic top ten lists. Three other Ohio zoos made the top 20 list: Cincinnati at #3, Columbus at #5 and Cleveland at #12.

Three new exhibits at the Zoo recently opened to the public: Penguin Beach, Flamingo Key, and Keet Retreat.

For more information, please visit: <https://www.toledozoo.org>

*Photo credit: Toledo Zoo/Andi Norman*

**K-16 STEM in the NEWS**

**Penta Career Center to Hold STEM Summer Camp**

Penta Career Center, 9301 Buck Road in Perrysburg, will host its STEM Summer Camp June 16-20, for students in grades 7-9.



This year, participants will be exploring alternative energy, computers, construction, manufacturing, and geographic information systems.

**Alternative Energy Technology**

Students will investigate the field of alternative energy and learn how to calculate energy output of solar cells and wind turbines through exciting experiments.

**Computer Hardware/Networking**

Students will explore this fast-paced, expansive, high paying, and exciting technology industry, and learn how math, science and engineering are the keys to success.

**Construction Carpentry**

Students will experience construction activities to discover how math and art are blended together to build a 32-foot wooden dragon.

**Geographic Information Systems**

Students will explore interesting U.S. landmarks using ArcGIS software, and create smart phone applications and online mapping projects.

**Manufacturing Technology**

Students will experience careers in the manufacturing and transportation industry by building and testing water-powered rockets.

For more information on Penta Career Center please visit: <http://www.pentacareercenter.org>

**STEM Opportunities****National Conference on College and Career Readiness in the Age of the Common Core**

As the end of another school year is here, please consider unique PD opportunities such as "Bridging to Success," at this year's National Conference from the Center for College & Career Readiness™ and the Common Core Institute™, June 20-21 in Chicago. For more information:

[http://collegecareer.org/National\\_Conference.aspx](http://collegecareer.org/National_Conference.aspx)

**Join us for STEM in the Park!**

**Saturday, September 27, 2014, 10:00am - 2:00pm  
in the Perry Field House @ BGSU.**



A **free** event for all northwest Ohio families and the entire community. STEM in the Park features:



- Four hours of engaging, hands-on STEM activities from over 60 area businesses, schools and organizations,
- **Free** lunch and other refreshments (while supplies last),
- **Free** take-home activities,
- **Free** STEM materials, and best of all:
- Fun for the whole family!

Visit the website for more info at [www.nwocenter.org/STEMinPark](http://www.nwocenter.org/STEMinPark)

## BattelleEd Lauches Two Courses to Help Prepare Students for College and Career

BattelleEd, a division of Battelle, brings together innovative educators, leading STEM advocates, and policy makers to create education solutions that will foster America's next generation of innovators. BattelleEd is launching two courses for teachers in grades 6 - 12 to help prepare students for college and career.

Please direct questions to: **Kelly Gaier Evans** at [gaierk@battelle.org](mailto:gaierk@battelle.org) or 614-458-5548 or visit the overview of College Ready by BattelleEd: <http://www.osln.org/2014/05/trainings-open-to-ohio-teachers>

**Training in Math:** Turn students from recipients of teaching to math content leaders with these innovative classroom strategies. Piloted at nationally recognized Ohio schools including Metro Early College, this 8-day training series is open now to teams from Ohio schools. This training is based on the Math Design Collaborative method (MDC).

The training includes four parts: a two day MDC method overview training with teachers across the state, two rounds of three days at-school embedded professional development, and a team planning and goal setting day again with teachers from across the state. The 2-day overview training will take place August 4-5, 2014 in central Ohio.

**Training in Literacy:** In today's digital world, students need literacy more than ever. Modern careers and college require students analyze, synthesize, and communicate at great speed. While literacy education can be found in many classes like social studies and science, this teaching is only rarely coordinated in any consistent way with the expectations of English class. This training brings teams of teachers from across content areas together to lay a foundation of expectations and methods. By collaborating, teachers see the quality of student work rise in each class. This training is based on the Literacy Design Collaborative method (LDC).

**Part I:** Overview and focus on the LDC teaching task (2 days - August 4-5, 2014)

**Part II:** Focus on literacy skills and instruction (1 day - November 19, 2014)

**Part III:** Focus on quality assurance (1 day - March 18, 2015)

**Part IV:** Focus on goals and full implementation (1 day - June 17, 2015)



U.S. News Launches a New "STEM Index". Despite some signs of improvement, student aptitude for and interest in science, technology, engineering and mathematics has been mostly flat for more than a decade, even as the need for STEM skills continues to grow, according to the U.S. News/Raytheon STEM Index.

<http://www.usnews.com/news/stem-index>

## Schedel Gardens Science Camp

Schedel Gardens announces a new youth initiative, the Schedel Summer Science Camp, being held from July 21-25, from 10am to 3pm for 5th & 6th graders entering middle school. Registration is free.

Schedel recognizes that as society evolves and becomes ever more reliant on technology, the significance of science and nature is waning. This is of ever increasing concern in the lives of children who are becoming more and more tethered to electronics rather than valuing hands-on, real life experiences for both learning and stimulation; particularly when it comes to outdoor activities.

<http://www.schedel-gardens.org/2014/05/19/schedel-summer-science-camp/>

## Free New Program from OBOR and the Ohio Academy of Science

"Believe in Ohio" is a free new program from the Ohio Board of Regents and the Ohio Academy of Science designed to help prepare Ohio high school students for the future by:

- Introducing them to the "Innovation Economy of Future"
- Inspiring them to pursue their STEM educations and careers in Ohio
- Encouraging them to become the future innovators and entrepreneurs Ohio needs to help develop the new products, services, and jobs of the future.

Although **"Believe in Ohio"** includes many activities and incentives for teachers and students to participate, the centerpiece of the program is an "Annual STEM Commercialization & Business Plan Competition" that will begin in 2014-2015 in which students will compete for nearly \$2 million in cash awards and scholarships to Ohio's colleges and universities.

### **"Believe in Ohio" Summer PD for Teachers**

Teachers may enroll now in a free summer professional development course where they will explore the full benefits of Believe in Ohio for teachers, schools, and students. Financial incentives for teachers include grants of \$500 to \$2,500 to teachers and \$500 to \$2,000 to hold a local high school STEM Commercialization or Business Plan Competition. <http://www.believeinohio.org/biohome.html>

## **Imagination Station Upcoming Events**

### **Science Summer Camps**

Survival Science Camp is one of three summer camps we are offering this year. If you've ever watched the TV show Survivor and thought, "Hey, I can do that!," then Survival Science Summer Camp is for you! It'll test your survival skills and prepare you for unusual situations should such a moment ever arise. [Learn more and register here](#). *Presented by Libbey.*



### **Nano Days**

June 24 - 29

Join us as we celebrate everything nano! Nano is the scientific term meaning one-billionth (1/1,000,000,000). That's really small! Everything from non-stick pans to sun block are incorporating new nano-scale technologies and materials. Discover the science of the really small with nano activities all week long. [Learn more](#). *Supported by NSF and NISE Network.*

### **Stellar Sundays - NEW!**

2nd Sunday of the month, now - November

Lean back and enjoy the wonders of naked-eye astronomy in our very own planetarium, StarLab. The StarLab offers a unique setting for bringing the stars and planets indoors. Visit us on Stellar Sundays, and familiarize yourself with constellations and upcoming astronomical events! [Learn more](#).

## **Ohio Resource Center Summer PD Workshop on Scientific Arguments in Middle School**

Register for the **"Now I Get It!"** Scientific Arguments in Middle School workshop, to be given on July 28-31, 9:00am - 3:00pm, at the Metro School, 1929 Kenny Rd., Columbus. The workshop will consist of hands-on experiences, direct instruction, and participant collaboration. The process of argumentation will be framed through two standards-based middle school life science concepts: photosynthesis and respiration. Participants will receive copies of "Supporting Grade 5-8 Students in Constructing Explanations in Science: The Claim,

Evidence, and Reasoning Framework for Talk and Writing" and "Scientific Argumentation in Biology: 30 Classroom Activities" (\$80.15 value).

### Registration Options

- Individual early bird registration (on or before June 26): \$300
- Individual registration (after June 26): \$325
- Team registration: \$300/teacher. Teams of 4 or more teachers from the same district are eligible for the discounted team fee.
- One semester of graduate credit may be available from Ashland University. The fee for the graduate credit is \$175.

All fees are nonrefundable. Lunch will be provided, and parking is free.

For more information and to register, go to the "Now I Get It!" webpage at: <http://www.ohiorc.org/professional-development/details/13.aspx> or contact **Gale Martin**, [gmartin@ohiorc.org](mailto:gmartin@ohiorc.org), 614-247-6342.



Sylvan Learning is now offering STEM programs, with a new Robotics course for 2nd through 4th graders which teaches students to build and program robots using LEGO® Education's award-winning WeDo™ software.

Sylvan Learning Center  
 Toledo, Oregon, Point Place, Sylvania & Westgate  
**419-867-1331** or [sylvantoledo@sbcglobal.net](mailto:sylvantoledo@sbcglobal.net)  
[sylvanlearning.com](http://sylvanlearning.com)

## Three Professional Development Opportunities from the Ohio Energy Project for Ohio Science Teachers!

Energy Efficiency Education School Program for Grades 5-12  
[Click here](#) to view a brochure (pdf)

Professional development training on the new 3rd grade science content standards focused on energy sources, heat, light and states of matter.  
[Click here](#) to view a brochure (pdf)



Professional development training on the new 4th Grade science content standards focused on electricity,

circuits and thermal energy.

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



### **Manufacture Your Future: New Online Portal Offers Free, Dynamic STEM Lessons and Resources**

Discovery Education and Alcoa Foundation are excited to introduce Manufacture Your Future, a new, online destination designed to inspire students in grades 6-12 to explore modern manufacturing careers through STEM-based exploration.

Manufacture Your Future's standards-based, cross-curricular resources include:

- **FOR TEACHERS:** Comprehensive lesson plans including "Manufacturing in the 21st Century" and "Design a Robot"
- **FOR COUNSELORS:** Career guide with job assessment tools
- **FOR FAMILIES:** Discussion starters to extend the conversation beyond the classroom

Learn more at: <http://www.manufactureyourfuture.com/>

## **Fall 2014 Math Enrichment for Hancock County**

The University of Findlay, in cooperation with Findlay City Schools, presents: **Math Clubhouse** on Monday evenings, 6:00-7:00 pm, Sept. 15 - Dec. 11, 2014.

Sessions will be held at:

Donnell Middle School  
301 Baldwin Ave.  
Findlay, Ohio

### **Math Intervention & Enrichment for Kindergarten - 3rd Grades**

Registration will be accepted through Sept. 5, 2014

Please contact **Shelly Gilbert** to register: [sgilbert@fcs.org](mailto:sgilbert@fcs.org).

**"The Clubhouse"** is a free outreach service provided to the children of Hancock County and surrounding

areas sponsored by The University of Findlay "Clubhouse" College of Education. The purpose of this program is two-fold: to provide mathematics instruction and support for primary school-age children and to provide an authentic experience for the University's teacher education candidates. The mission of "The Clubhouse" is to provide children with a safe and encouraging environment for specific standards-based intervention and enrichment.

The program serves both the children and their parents/guardians. University tutors use the first session to discover each child's likes and dislikes, perceptions of math, areas of particular interest, and learning styles. This information helps tutors select materials related to the group's interests. Each small group becomes a learning community. Tutors provide the children with a calendar of events for the remaining weeks of the program. Tutors will present rich problems for the children to solve each week following the standards in the Common Core Standards for Mathematics. Problem-solving strategies and mathematical reasoning and sense-making will be a major focus. The program ends with an evening of sharing and celebration.

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## NWO Hands-On STEM Activity

### Make Your Own Rainbow

from Science Kids (<http://www.sciencekids.co.nz/>)

Learn how to make a rainbow with this fun science experiment for kids. Using just a few simple everyday items, find out how rainbows work while enjoying an interactive, hands-on activity that's perfect for kids.

#### What is needed:

- A glass of water (about three quarters full)
- White paper
- A sunny day

#### Instructions:

- Take the glass of water and paper to a part of the room with sunlight (near a window is good).
- Hold the glass of water (being careful not to spill it) above the paper and watch as sunlight passes through the glass of water, refracts (bends) and forms a rainbow of colors on your sheet of paper.
- Try holding the glass of water at different heights and angles to see if it has a different effect.

#### What's happening?



While you normally see a rainbow as an arc of color in the sky, they can also form in other situations. You may have seen a rainbow in a water fountain or in the mist of a waterfall and you can even make your own such as you did in this experiment.

Rainbows form in the sky when sunlight refracts (bends) as it passes through raindrops, it acts in the same way when it passes through your glass of water. The sunlight refracts, separating it into the colors red, orange, yellow, green, blue, indigo and violet.

<http://www.sciencekids.co.nz/experiments/makearainbow.html>

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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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