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**K-16 STEM in the NEWS****Annual Symposium on STEM Teaching Draws Record Crowd**

"You had an amazing mix of topics that seemed to touch every grade level. How that happens is terrific! I honestly took something away from each session I attended. I'm an elementary teacher and am always looking for ways to challenge my top kids. We always seem to have those that can master the skills necessary and want to find ways to engage them further," stated a teacher attending the annual NWO Symposium on STEM Teaching, held last month on the campus of Bowling Green State University. BGSU Professor of Teaching Excellence Dr. Daniel Brahier delivered the keynote presentation titled: "Science and Mathematics for a New Generation". Over 400 people attended more than 50 presentations on various aspects of best practices in STEM teaching and learning to educators and administrators at all levels from pre-school through college.

A passionate and dedicated educator for 35 years, Dr. Brahier, in his keynote address, explored the role that critical thinking plays in the STEM classroom and how all educators need to work toward the same goals. He has had a tremendous impact on mathematics education



nationwide, and has written several books, including the top-selling textbook for middle and high school mathematics teacher preparation. He is also the co-author of *Principles to Actions*, an NCTM-published guidebook centered on mastering teaching practices with core principles for today's educators. Dr. Brahier has spent much of the last year traveling around the country speaking about *Principles to Actions* and where mathematics education is headed.

[Microsoft and ITIP Ohio Will Again Be Partnering](#)

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After the keynote address, participants attended presentations that addressed a wide variety of topics in all of the STEM domains and disciplines including engineering. Hands-on inquiry,

project-based learning, formative assessment, computational thinking, and cross-curricular connections linking to history and other non-STEM areas.

Presentations from 27 different STEM education professionals revolved around seven strands of disciplines and included:

- Teaching and Learning in ENGINEERING
- Teaching and Learning in Science
- Teaching and Learning in Mathematics
- STEM in the Community: thinking outside the classroom
- Integrating Technology in the Classroom
- Putting Creativity to Work: Teaching STEM with Innovation
- Research Based Instructional Practices in the College Classroom: Enhancing the Undergraduate Experience

Power Point presentations of Dr. Brahier's keynote address as well as "Work Smarter, Not Harder: Tools, Tips and Techniques to help students become more focused, organized and productive" by Dr. Jerry Schnepp and Mary-Jon Ludy can be found on the NWO website at: <http://cosmos.bgsu.edu/nwoSymposium/index.htm>.

Plans for next year's annual Symposium, which will be held on **November 16, 2016** are underway.



## Community STEM in the NEWS

### Maumee Valley Country Day School Named State Finalist in the \$2 million Samsung Solve for Tomorrow Contest

Maumee Valley Country Day School announced that it has become an Ohio state finalist in the Samsung Solve for Tomorrow contest, a nationwide competition to increase interest in science, technology, engineering

and math (STEM) by challenging teachers and students to take topics out of traditional classroom settings and into local communities. Maumee Valley will receive two Samsung Galaxy® Tabs and the opportunity to win additional prizes.

Maumee Valley Country Day School has moved onto this round of the competition for their interest in using STEM to address the health of Swan Creek and develop a Best Management Practice Plan for school fertilizing. Maumee Valley is one of five schools in Ohio to become a state finalist in the Samsung Solve for Tomorrow contest. During the next phase of the competition, Chris Ann Slye of Perrysburg, OH, a Middle School Science teacher at MVCDS, will create a lesson plan to address the issue in an educational setting. In December, 51 state winners will be announced.

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## STEM Opportunities



### From Science Activity to Supercharged Inquiry Back By Popular Demand!

- Are you searching for ways to go beyond simple science activities and further engage your students with supercharged science inquiry lessons that integrate powerful literacy strategies?
- Are you looking to better prepare your students for the more rigorous learning and assessment expectations that exist today?
- Do you need strategies for grasping your students' understanding of concepts in order to promote higher achievement in your classroom?

If so, you will want to be a part of this Science Mini-Series!

**Dates and Times:** A two day workshop; 8:30 am - 3:30 pm (14 hours total). Thursday, January 28 & Friday, January 29, 2016

#### Topics Covered:

- Science Inquiry (Observations/Inferences/Designing Experiments)

- Life Science (Food Chains, Energy Flow, Ecosystems)
- Physical Science (Force & Motion, Electrical Circuits)
- Earth/Space Science (Earth's Resources)
- Registration Fee and Space Limitations:
  - \$250/participant [\$225/participant for teams of 2 or more/ district].
  - Light breakfast, lunch, beverages, and snacks provided.
  - Each participant receives a science activity book and hands on science classroom materials valued at \$50.
  - Space is limited to 30 participants.

**Register today to guarantee your spot in the training!**

[Click here](#) to register

**Location:**

The 577 Foundation - Main House  
577 East Front St.  
Perrysburg, OH 43551

## Toledo Area Metroparks Nature Photography

A new exhibit, "The Fauna of America," by Bryce Denison, is now open at the National Center for Nature Photography at Secor Metropark. In this exhibit, Bryce, of Farmington Hills, MI, includes a wide variety of photos to illustrate some of the incredible diversity of animal life found in North and Central America. The NCNP is open Friday, Saturday and Sunday, 10 a.m. to 4 p.m. Free.

[www.metroparkstoledo.com](http://www.metroparkstoledo.com)



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## Picture-Perfect Science: Using Children's Books to Guide Inquiry

### A fully online professional development opportunity for K-5 teachers

The Oregon Coast STEM Hub held two of these web series last year, where the authors themselves provided the training through ZOOM video conferencing. It was highly successful, so the authors are holding another series on **Wednesdays, from 4:00pm-6:00 pm (PST), Feb. 10th- March 9th**. Because it is online, teachers nationwide can participate.

The course supports teachers in integrating science and literacy using children's books, with NGSS aligned lessons that follow the 5E model.

Teachers can register here: <https://pictureperfectsciencewinter2016.eventbrite.com> by January 29th, for \$170, which includes their choice of one eBook of Picture-Perfect Science. One (1) graduate credit is also

available for \$60.

<http://pictureperfectscience.com>

## Imagination Station Offerings During the Holiday Season

### Frostology: The Science of the Season

December 1 - January 3, 2016

Visit Imagination Station during the holidays and explore the slippery science of snow, make engineers out of elves and create masterpieces from paper with Imagination Station's holiday-themed activities and demonstrations.



[www.imaginationstationtoledo.com](http://www.imaginationstationtoledo.com)

## The 3rd Annual STEM Conference

### Best STEM Practices for the Next Generation

April 8, 2016

Cleveland Convention Center  
STEM Conference 2016

The STEM Conference 2016 conference tracks include:

- Skill-Ready STEM Teachers: Teacher Preparation and In-Service Training
- It Starts at the Top: Effective STEM Education Leadership
- Starting STEM Early: Early Childhood, Kindergarten, Elementary School, and Middle School
- Post-High School Paths to STEM Careers
- Ensuring Equal Access to STEM Education and Careers for Women and Minorities
- Public and Private Partnerships: Get Help Implementing a STEM Program

[www.stemcon.com](http://www.stemcon.com)

## Made with Code

Made with Code is an initiative to teach middle and high school girls to code. This website features coding events for girls, videos of mentors, and coding resources for girls, parents, and educators.



<https://www.madewithcode.com>



## Ohio Afterschool Network/Ohio Expanded Learning Summit

Monday, February 1, 2016 at 1:00 PM - Wednesday, February 3, 2016 at 2:00 PM  
Columbus, OH

### The Summit, Embark on A Fantastic Journey

Discover the Treasures of Afterschool is designed to provide a forum for strengthening professional knowledge, sharing best practices, linking after school activities to school day instruction, preparing students for 21st century skills, and developing a peer based network.

<http://www.ohioafterschoolnetwork.org/events.php>



**Microsoft** and **ITIP Ohio** will again be partnering to provide teachers and education leaders with exciting new technology solutions for K-12! Best practices and strategies to build a successful classroom around Office 365, Windows 10, Minecraft, Windows devices, Microsoft Azure, and more will be covered. **Register by December 31 for the Early Bird Rate!**

### Microsoft Symposium Call for Presenters

Please consider sharing your knowledge & experience during a 60 minute concurrent session. Those invited to present a session will receive free conference registration, lunch and free parking. **Deadline for proposal submissions is December 22, 2015.**

*Presenters will be notified of acceptance no later than January 11*



The 2015-16 Instructional "Blizzard Bags" from INFOhio for K-12 are here! Each bag includes:

- A complete, customizable research unit with four, self-contained lesson plans with assessments and activities.
  - A teacher guide with differentiation tips, standards alignments, extension activities, cross-curricular options, technology skills supported, and time needed to complete the lessons, and materials for in-class instruction and home exploration.

Information about the career cluster covered in the unit along with links to related Career Connections on the ODE website.

Teachers may use these lessons as Blizzard Bags, sub plans, or any time a plug and play lesson is needed.

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## NWO Hands-On STEM Activity

# The Tragic Mystery of the Mushy Apple

*This month's Hands-on Activity is from [www.sciencefriday.com](http://www.sciencefriday.com).*

**What determines whether apples are crisp and juicy or mealy and dry? THEIR CELLS!**

What makes some apples crisp and juicy while others are dry and mealy? The answer is in their cells. Like all living things, apples are composed of cells. Because apples come from trees, the cells that make up the edible tissue of an apple share features with other types of plant cells. To understand how apples get their texture and juiciness, it helps to become familiar with the components of an apple cell.





## Conduct an Apple Texture Test

Perform a good old-fashioned taste test to decide which varietals are the juiciest and crunchiest.

## Materials

1. Knife (have an adult help with the cutting)
  2. Cutting board
  3. 3-6 different varieties of apples

#### 4. Apple Crispness Observation Chart

<http://www.sciencefriday.com/educational-resources/the-tragic-mystery-of-the-mushy-apple/>

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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.

### Print and eNewsletters from the past!

Looking for past articles from our print and eNewsletters?

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Try it FREE today.

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