This issue of the Science Matters eBlast is filled with Pre-K through high school opportunities and resources for both teachers and students. Please share the eBlast with your colleagues. It is also available by one of two methods, depending on how you receive this email. You can click on the attachment at the end of the message or locate it in the SAS Science Learning Community of SAS.

**Science Education in the News**

**Lebanon Valley College** is offering an [Integrative STEM Education Certificate](http://www.lebanonvalley.edu/programs/education-and-human-development/education/integrative-stem-certification-program) with a new cohort starting in March, 2017. For more information, including free credit hours, go to the [LVC STEM Education Certificate](http://www.lebanonvalley.edu/programs/education-and-human-development/education/integrative-stem-certification-program) web page.

**The Pennsylvania Math Coalition** is hosting an evening at Messiah College for an overview and discussion of the state plan for implementation of the [Every Student Succeeds Act](https://www.everystudentsucceedsact.org) (ESSA). Ms. Beth Olanoff, Special Assistant to the Secretary of Education will be leading the discussion. It will be held in Kline Hall Room 120 on the [Messiah College campus](http://www.messiah.edu) at 6:30pm, on Thursday, February 9, 2017. To help for planning purposes, an RSVP is requested: [https://goo.gl/forms/oWvNtVUmio5UgDO72](https://goo.gl/forms/oWvNtVUmio5UgDO72)

**The Updated Science Curriculum Framework** is posted in the Curriculum Framework section of SAS today. At this time, only pdf versions of the framework are available in the Curriculum Framework section of SAS. Word documents of the framework are available in the Content Repository of the Science Learning Community.

**Professional Opportunities**

**The NSTA Learning Center** has recently been updated with a sharp new look and enhanced features, including a simplified interface and navigation. [Check it out here](http://www.nsta.org/).

**The North American Association for Environmental Education** will offer a [free webinar](http://www.naee.org/events), Learning to Live with Climate Change: What Educators Need to Know, on January 24, 2017.

**American Association of Chemistry Teachers** has upcoming [webinars for K-12 teachers](http:// www.aact.org/). You do not have to be a member to participate. All webinars start at 7:00 PM ET.

Elementary and Middle School Resources from AACT, January 18 | [Register](http://www.aact.org/events/)

Chemistry Demos: Connecting the Molecular to the Macroscopic, Jan. 25 | [Register](http://www.aact.org/events/)

Chemistry in a Petri Dish: Time for Student Investigation, February 1 | [Register](http://www.aact.org/events/)

A Visual & Intuitive Approach to Stoichiometry, February 7 | [Register](http://www.aact.org/events/)
The 2017 PBS Digital Innovator Program is available for PreK-12 Educators. Applications are accepted through February 12, 2017. Join a community of PreK-12 educators, who set the bar for thoughtful tech integration in the classroom and who are not defined by the gadgets they use, but by the unique way they approach education. Their bold and enthusiastic perspective sets them apart as change makers, and unlocks new worlds for their students.

Teacher Research Associates (TRAC) program provides outstanding science, mathematics, computer science and technology teachers with professional scientific, engineering or technical experiences through summer research opportunities. Participants can transfer their increased awareness and understanding of cutting-edge science and technology back to the classroom. The eight-week appointments have a stipend of $700 per week. See details on the website. The application deadline is February 17, 2017.

The Research Experience for Teachers at Northwestern University has research opportunities available. Science teachers are invited to participate in 8 weeks of laboratory research in the group of one of Northwestern’s leading research professors. The Research Experience for Teachers carries an $8,500 stipend and runs from June 19 through August 11, 2017. Research topics include a wide range of materials science, physics, and chemistry areas such as polymers, nanoscience, biomaterials, molecular electronics, and photonics. The application deadline is March 15, 2017. Information and application.

The American Geosciences Institute’s Center for Geoscience and Society and the National Association of Geoscience Teachers are collaborating with other organizations and member societies to support implementation of the Earth and space science Next Generation Science Standards. Webinars and email lists are available on their website.

EQuIP Peer Review Panel is identifying and shining a spotlight on emerging high quality lesson and unit plans designed for the NGSS. Achieve launched and is facilitating an EQuIP Peer Review Panel for Science, a group of expert reviewers who will evaluate the quality and alignment of lessons and units to the standards. Learn how to submit your lessons and units today.

Pennsylvania Sea Grant’s 2017 Extreme Weather E-Forum has an exciting opportunity for both teachers and students. The Extreme Weather E-Forum has been created especially for high school environmental science and biology students, and provides an opportunity to investigate the relationship between climate and extreme weather and think more critically about what it means to become more resilient. Students can blog with other Pennsylvania classrooms to raise awareness about preparing for extreme weather events, share lessons learned, and inspire a community approach. Contact Ann Faulds (amf12@psu.edu). Registration deadline is February 3, 2017.

SAS Training delves deeper into resources available on SAS. Join the content advisors from PDE to delve deeper into resources for each content area. Registration is through IU 5.

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<th>Harrisburg PaTTAN – January 25</th>
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Registration is open for a FREE Organ & Tissue Donation Awareness Spring Institute in State College, PA on May 11-12, 2017. Secondary school teachers of all discipline areas, administrators, and school nurses are invited to attend. Act 48 credit is available and Act 58 credit for nurses is pending approval. Grants up to $5,000 per year are available for schools to assist in the implementation of Organ and Tissue Awareness into your curriculum. This is a great place to start to learn about organ and tissue donation and to learn about the grants for your classroom/school. Space is limited. The free registration includes lodging, meals, and the conference. To register go to: https://www.mylearningplan.com/WebReg/ActivityProfile.asp?D=10019&I=2315772

For questions: Sue Howes, OTDA Project Coordinator at sue_howes@iu13.org or (717) 606-1795.

PA State Parks continue to offer innovative, multi-modal educator workshops across the state. New sessions for after the first of the year have recently been added. Participants will receive Act 48 credit.

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<tr>
<th>Date</th>
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<td>February 16</td>
<td>Go Teach: GPS</td>
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<td>March 24</td>
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<td>April 8-9</td>
<td>Watershed Education</td>
<td>Presque Isle State Park</td>
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Expanding Your Horizons: STEM Career Day for Girls for middle and high school students will be held at Penn State University on January 28, from 9:00am – 4:00pm. It is an inspiring full-day event for middle and high school girls that will feature speakers and interactive workshops on STEM topics and careers. Registration and information: http://science.psu.edu/outreach/special-programs/EYH

Penn State CSATS Summer Workshops have been announced. Spend a week with Center for Science and the Schools getting an in-depth experience with Penn State researchers. CSATS week-long workshops focus on engaging teachers in activities designed around cutting-edge research projects. Workshop activities may include field trips to site locations, working with researchers and graduate students in their labs or in the field, and professional development tailored to bring research-based practices into your classroom! http://csats.psu.edu/overview-of-csats-programs/summer-workshops

Links/Resources

The Center for Global Environmental Education’s Watershed Action: Service Learning Projects for Students web site helps teachers of grades 6–12 design service learning projects that involve students in the protection and cleanup of watershed environments.

Wild Weather Adventure game for K-5 kids from NASA’s Space Place lets them board a weather research blimp to explore Earth and its weather.
NOVA’s collections with resources for a variety of subjects you may be teaching this year:

**Biology** — Use the Evolution Lab game and videos to teach students about natural selection, phylogeny, and more.

**Chemistry** — Unlock the secrets of nature’s building blocks with the Hunting the Elements collection.

**Physics and Engineering** — Take a tour of the material science that is changing our world with the Making Stuff collection.

**Earth Science** — Learn about the forces that have shaped the North American continent in the Making North America collection.

Lab Out Loud is a podcast and blog that discusses science news and science education with leading scientists, researchers, science writers and other professionals. Check out episodes on citizen science, science in film and more topics.

The Extreme Event webquest, a guided research activity in three customizable classroom modules! Students work individually and in groups to learn about disaster risk and resilience. Suitable for middle school through college.

Pennsylvania Learns has resources for all levels of students. Teachers from across the state put together the resources to be utilized in all classrooms with a focus on one to one schools. The biology teachers organized resources around the Assessment Anchors and Eligible Content of the Biology Keystone Exam. This is one of the hidden jewels of SAS located in the ‘Instruction’ section of SAS! [http://www.pdesas.org/Page?pageId=30](http://www.pdesas.org/Page?pageId=30)

## Grants, Awards, Contests

**The Presidential Awards for Excellence in Mathematics and Science Teaching** application will be available the first week of November. PAEMST is a phenomenal program that recognizes excellence in the teaching of science. By going to the PAEMST website, you can sign up for notification of information regarding the program.

**The Shell Science Lab Challenge** offers you a chance to compete to win a school science lab makeover, valued at $20,000, by sharing your creative approach. Middle and high school science teachers (grades 6–12) in the United States and Canada are encouraged to apply. The deadline for submissions is January 23, 2017.

**The Fund for Teachers Grant** provides preK-12 teachers with funds to support professional development activities during the summer. Check the web site for complete details. The application deadline is January 31, 2017.

**The Captain Planet Foundation** is accepting applications for small grants totaling $500-$2,500. Grant activities must be project-based, performed by youth and have real environmental outcomes. Visit the Web site to learn more about eligibility and restrictions and to fill out an application. The next deadline for applications is January 31, 2017.
Lowe’s Toolbox for Education offers grants to schools and parent/teacher groups. School projects should encourage parent involvement and build stronger community ties. Projects should fall into one of the following categories: technology upgrades; tools for STEM programs; facility renovations; and safety improvements. Application deadline is February 9, 2017.

Teacher Grants – What could you do with $1,000 for your classroom? K-12 classroom teachers can apply for a Technology Teacher Grant by writing a short essay on what new technology would mean to their classroom and how they would use the grant to address a learning challenge. The submission deadline is February 24, 2017.

The Presidential Innovation Award for Environmental Educators Program recognizes outstanding K-12 teachers who employ innovative approaches to environmental education and use the environment as a context for learning for their students. Teachers from each U.S. Environmental Protection Agency region will be selected to receive the award. The deadline for application is March 1, 2017.

The Research Experience for Teachers program is inviting science teachers are invited to participate in 8 weeks of laboratory research in the group of one of Northwestern’s leading research professors. The Research Experience for Teachers carries an $8,500 stipend and runs from June 19 through August 11, 2017. Research topics include a wide range of materials science, physics, and chemistry areas such as polymers, nanoscience, biomaterials, molecular electronics, and photonics. The application deadline is March 15, 2017.

AACT and ACS ChemClubs have partnered with C&EN's Chemistry in Pictures blog to provide an exclusive photo contest for K-12 teachers of chemistry. Submit your photos for a chance to win new lab equipment, including an electronic balance, hot plate, glassware set, and classroom set of goggles. Visit the AACT website to learn more.

For Students

The U.S. Department of Energy (DOE) National Science Bowl is a nationwide academic competition that tests students’ knowledge in all areas of science and mathematics. Argonne National Laboratory serves as a regional competition site for area middle school students only. Student teams face-off in a fast-paced question-and-answer format, being tested on a range of science disciplines including biology, chemistry, earth science, physics, energy, and math. Middle School programs. High School Programs.

The Bright Schools Competition engages students in STEM education. In this free competition, middle school students (grades 6–8) explore the links among light, sleep, and student health and performance. Registration is now open, and projects are due on February 6, 2017.

Toshiba/National Science Teachers Association (NSTA) ExploraVision registration is open for the 2016 competition. This is the 25th year of the world's largest K–12 science competition. Student
participants will have a chance to win a number of great prizes, including $10,000 U.S. Series EE Savings Bonds (at maturity). Learn more and register by February 6, 2017.

The World of 7 Billion video contest challenges students to create a short (60 seconds or less) video illustrating the connection between a world population of seven billion and one of the three challenges of the contest – climate change, ocean health and rapid urbanization. The submission deadline is February 23, 2017.

The Cassini Scientist for a Day essay contest is open to all students in grades 5-12. Students may work alone or in groups of up to four students. Students write an essay of up to 500 words about one of three possible imaging targets that the Cassini spacecraft has taken during the past few years. The contest deadline is February 24, 2017.

Action for Nature seeks applications from students ages 8-16 for its International Young Eco-Hero Awards Program. The awards program recognizes the accomplishments of young people whose personal actions have significantly improved the environment. Projects must concern advocacy, environmental health, research or protection of the natural world. The application deadline is February 28, 2017.

The President’s Environmental Youth Awards program recognizes outstanding environmental projects by K-12 youth. The application deadline is March 1, 2017.

Witnessing Change Video Competition from the Climate Cost Project gives high school and college students an opportunity to document local impacts of climate change. Submissions due April 1, 2017. In addition to the video contest, the Climate Cost Project provides interdisciplinary educational materials on the economics of climate change, including a specialized climate change economics game and an environmental economics chapter.

The KidWind Challenge is an event developed to allow students to explore the power of wind by building and testing their own wind turbines. Teams from can register to participate in the Pennsylvania KidWind Challenge held at PSU through the KidWind website. The KidWind Challenge at PSU will be held on March 15, 2017, from 9:00-3:30pm. Over 10,000 have participated in KidWind Challenges all over the US! Teams from can register to participate in the Pennsylvania KidWind Challenge held at PSU through the KidWind website. Contact Ashley Rapsinski at adb236@psu.edu or 814-865-1713.

Young Scientist Challenge is open to students students enrolled in 5th through 8th grade. The contest period commences on December 15, 2016 and ends on April 19, 2017. Eligible students shall have the opportunity to create a video in accordance with the Challenge outlined on the website. Students should identify a solution to an everyday problem that directly impacts them, their families, their communities, and/or the global population. The idea must be a new innovation or solution, and cannot simply be a behavioral change or a new use for an existing product. https://www.youngscientistlab.com/

National Youth Science Camp – The National Youth Science Camp is now accepting applications for graduating high school students from Pennsylvania. The camp is limited to two students from each state, which is an amazing honor. This is a phenomenal experience for students that will take place in
West Virginia, June 14-July 8 . . . and all expenses are paid! Applications are now available online. Start the process immediately!

Science Matters Information

If someone sent you this eBlast, you can become a member of Science Matters to receive it directly! Go to: http://pascience.org/Science-Matters.php

Science Matters is an initiative of the Pennsylvania Science Teachers Association and the National Science Teachers Association to promote quality science education, through the sharing of information, resources, and professional development opportunities. The Pennsylvania state coordinator is Dave Bauman: davbauman@pa.gov.