

## VDOE Science Update

### January 25, 2015

#### NEWS

##### ***BioTeach – Save the Date***

The Virginia BIO Foundation, a not for profit foundation created to connect bioscience companies with teachers and students to stimulate career interest in the biosciences (BioSTEM), is pleased to announce it will be hosting BioTeach events on March 19, 2015. The locations will be announced in the near future.

##### ***Building Tomorrow's Thinkers***

The VAST Region 3 directors have organized the third annual Region Three Mini Conference featuring Kip Bisignano as the Key Note speaker. The conference will be held at the [University of Mary Washington](#) on March 14, 2015. ***New Date!***

Audience - K-8 teachers

Time - 8:30 a.m. – 2:00 p.m.

Registration open to all on the [VAST website](#)

Cost \$25

##### ***Governor McAuliffe and Virginia Council on Women Announce the 4th Annual STEM Essay Contest***

Governor McAuliffe and the Virginia Council on Women have announced the 4<sup>th</sup> annual STEM (Science, Technology, Engineering, and Math) Essay Contest for high school junior and senior girls.

The Council will award one \$5,000 scholarship to a female junior or senior who will be pursuing a STEM career at an institution of higher education. Other scholarships may be awarded at the discretion of the Council.

The STEM Essay Contest was launched in 2012 with 170 young ladies from across the Commonwealth submitting essays focusing on the student's vision for a future STEM education or career. The Council raised \$10,000 and made three scholarship awards.

Last year, the Council received nearly 300 essay submissions and thanks to the generosity of sponsors, was able to award five scholarships, with the highest award winner receiving a \$10,000 scholarship.

For more information, visit <https://commonwealth.virginia.gov/council-on-women/stem-essay-contest/>.

##### ***2015 Virginia General Assembly***

The Virginia General Assembly convened this week. The VDOE tracks and reports on proposed legislation, bills, and resolutions of interest to school superintendents and division personnel. The history of any bill or resolution, all amendments, and the text of the legislation are available by clicking on the bill or resolution number on the [Education Legislation](#) webpage.

All legislation becomes effective in July unless otherwise indicated. Any information about actions that may or must be taken by local school boards is included in the summary of each bill.

At the conclusion of the General Assembly, final tracking reports are compiled. These will reflect the final action on education-related legislation tracked by VDOE.

***Senate Votes 98-1 that Climate Change is Real*** by Laura Barron-Lopez

The Senate on Wednesday voted 97-1 in favor of an amendment stating that "climate change is real and is not a hoax."

The provision offered by Sen. Sheldon Whitehouse (D-R.I.) to put Republicans on record about climate change ahead of the 2016 election passed with near unanimous support, with only Sen. Roger Wicker (R-Miss.), the chairman of the campaign committee for Senate Republicans, voting no.

[Read more here.](#)

## Teacher Resources

***Speciation in Under 3 Minutes - BioInteractive***

The anole lizards of the Caribbean are a great case study in **speciation**. This fast-paced, engaging [animation](#) explores the roles of *geographic and reproductive isolation and adaptation* in the formation of new anole species.

***The Anthropocene: Human Impact on the Environment - BioInteractive***

Explore key human impacts on the environments and how they have affected Earth's landscape, ocean, atmosphere, and biodiversity with this engaging interactive.

Human activities are reshaping our planet in profound ways. The changes that have occurred in the last 50 to 200 years have led scientists to propose a new geologic epoch, called the Anthropocene. Use this interactive to see how human population growth, air pollution, agriculture, mining, water use, and other human activities have impacted the environment and the mark they will leave in the fossil record.

[Launch Click & Learn](#)

***Forest Products Presentation – We All Need Trees***

The *We all Need Trees* presentation, offered during the VAST PDI, has been improved and posted as a PDF on the Virginia PLT website, [www.cnre.vt.edu/plt](http://www.cnre.vt.edu/plt). You will find the link in the first row of headings: *We All Need Trees*. The presentation is intended to support the Science SOL 4.9, but may also be useful for 2.8, 3.10, 3.11, 6.9, LS.11, ES.6, as well as history SOL 2.7, 2.9, VS.10, and CE.12.

***AAAS Science Assessment*** <sup>beta</sup>

The assessment items on this website are the result of more than a decade of research and development by [Project 2061](#), a long-term science education reform initiative of the American Association for the Advancement of Science.

Here you will find free access to more than 600 items. The items:

- Are appropriate for middle and early high school students.
- Test student understanding in the earth, life, physical sciences, and the nature of science.
- Test for common misconceptions as well as correct ideas.

This website also includes:

- Data on how well U.S. students are doing in science and where they are having difficulties, broken out by gender, English language learner status, and whether the students are in middle school or high school.

- “My Item Bank,” a feature that allows you to select, save, and print items and answer keys (requires [site registration](#)).
- A feature that allows you to create and take tests online using items from the item collection (requires [site registration](#)).

Intended primarily for teachers, these assessment items and resources will also be useful to education researchers, test developers, and anyone who is interested in the performance of middle and high school students in science.

## Teacher Opportunities

### ***Project CRESST: Enhancing Clinical Research Education for Science Students and Teachers Professional Development***

The CRESST Academy is a Professional Development Academy for Middle and High School Teachers utilizing an innovative curriculum designed to enhance students’ research skills and awareness of the importance of healthy lifestyle choices. The Academy combines a week-long summer workshop in the classrooms, labs and facilities of Virginia Commonwealth University with “in your classroom” implementation throughout the fall semester. CRESST is supported by a grant from SEPA (NIH), so there is no registration fee. Participants receive graduate credit or a stipend plus \$250 to purchase program related supplies.

The 2015 CRESST Summer Academy is grant-supported and offered free of charge to qualified participants. Future CRESST Summer Academies may require a registration fee.

**Dates:** 2015 Academy - July 13 - 17, 2015  
**Location:** Virginia Commonwealth University, Richmond, VA  
**Presenters:** VCU faculty, researchers and staff and CRESST Academy Fellows

No Registration Fee - Stipend or 3 Graduate Credits Available

More information about Project CRESST may be found at [www.cresst.vcu.edu](http://www.cresst.vcu.edu)

### ***NOAA Climate Stewards Education Project***

If you want to do more than just learn about climate science? Join educators who are supporting climate resilience and apply to be a part of the [NOAA Climate Stewards Education Project \(CSEP\) Stewardship Community](#).

In addition to having access to monthly webinars, book club discussions and face-to-face regional workshops, educators accepted into the Stewardship Community will:

- Be eligible for mini-grants support (up to \$2000);
- Be eligible to receive support for travel to attend and present at regional workshops &/or conferences;
- Have access to a community-wide participant-driven email list-serve;
- Receive continuing support for evaluation for their project; and
- Have their completed project highlighted on a NOAA website.

Applicants to the CSEP Stewardship Community will be committing to:

- Develop and implement a climate stewardship action project (definition below)
- Participate in a Stewardship Project Peer Review Group - meetings during evening hours (~ once/month).
- Use a newly developed CSEP Wiki to post stewardship project plans, progress updates, results, share resources, and comments with other CSEP educators.
- Participate in CSEP evaluation efforts i.e. online surveys.

The application for CSEP includes a proposed climate stewardship action project. Applicants will be selected based on the merits of their proposal. If accepted, participants will work with a peer review group and a peer mentor to refine their proposal which may be submitted for funding of up to \$2000.00 during the summer of 2015. Accepted refined proposals will be funded for the 2015/2016 academic year.

Go to <http://goo.gl/jCLVnm> to apply online. The deadline to submit an application is midnight **January 18, 2015**. Accepted educators will be notified by January 30, 2015

#### ***Library of Congress Accepting Summer Teacher Institute Applications: Primary Sources in Science***

The application for the Library of Congress Summer Teacher Institute for Primary Sources in Science is now available. This week-long professional development opportunity, taking place **July 20-24, 2015**, is designed for K-12 educators who teach science or collaborate with science teachers. In the Science Institute, participants will explore the benefits of using historical primary sources in the science classroom, particularly around the nature of science, the practices of scientists, and the relationship between science and society. Participants will build skills in teaching effectively with photographs, manuscripts, drawings, maps, and other formats from the Library's collections. [Full article](#)

#### ***Outstanding Earth Science Teacher (OEST) Awards***

These awards are given for "*exceptional contributions to the stimulation of interest in the Earth Sciences at the pre-college level.*" Any teacher or other K-12 educator who covers a significant amount of earth science content with their students is eligible. Ten national finalists are selected, one from each NAGT regional section. Some sections also recognize state winners. Individuals may apply themselves or nominate a colleague for the award.

Nominations can be made at: <http://nagt.org/nagt/awards/oest-nom.html>  
Virginia is in the Eastern Section.

#### ***Dorothy Stout Professional Development Grants***

Dottie Stout was the first female president of NAGT and was active as a strong supporter of Earth science education at all levels. In honor of Dottie's outstanding work and lifelong dedication to Earth science education, NAGT awards grants to faculty and students at two-year colleges and K-12 teachers in support of the following:

- Participation in Earth science classes or workshops
- Attendance at professional scientific or science education meetings
- Participation in Earth science field trips
- Purchase of Earth science materials for classroom use

Applications: [http://nagt.org/nagt/awards/stout\\_proposals.html](http://nagt.org/nagt/awards/stout_proposals.html)

### ***2015 National Youth Science Camp***

The National Youth Science Camp (NYSC) is an intense month-long camp for young scientists conducted during the summer after they graduate from high school. In a rustic setting in West Virginia, students from around the country are challenged academically in exciting lectures and hands-on studies on current science topics. The program also offers participants the opportunity to experience a wide variety of outdoor activities that have a minimal impact on the environment and are challenging for the experienced but accessible to those who have never participated in outdoor excursions. The NYSC is an all-expenses-paid program. The National Youth Science Foundation will arrange round trip transportation from an airport near the delegate's home to Charleston, West Virginia.

*More information is posted in Supts. memo #008-15 [2015 National Youth Science Camp \(NYSC\)](#)*

### ***EarthKAM Mission***

Schools and school divisions are invited to take part in the next EarthKAM Mission, scheduled to take place January 27, 2015 through January 30, 2015 (Please keep in mind that dates may be subject to change due to other events on board the International Space Station.)

**Sally Ride EarthKAM (Earth Knowledge Acquired by Middle school students)** is a NASA educational outreach program that enables students, teachers, and the public to learn about Earth from the unique perspective of space. During Sally Ride EarthKAM missions (periods when the Sally Ride EarthKAM camera is operational), middle school students around the world request images of specific locations on Earth. The entire collection of Sally Ride EarthKAM images is available in a searchable Sally Ride EarthKAM image archive. This image collection and accompanying activities are extraordinary resources to engage students in Earth and space science, geography, social studies, mathematics, communications, and art.

To sign up, please visit <https://earthkam.ucsd.edu>. If you have any concerns or questions, please do not hesitate to contact us at [ek-help@earthkam.ucsd.edu](mailto:ek-help@earthkam.ucsd.edu).

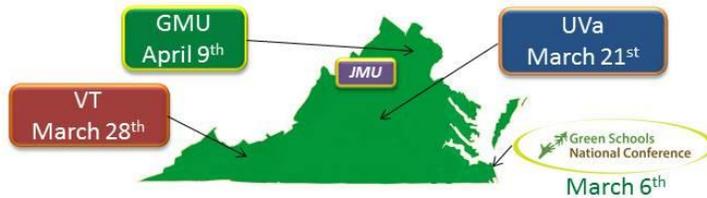
### ***Holiday Lake Forestry Camp***

Do you know students who are interested in natural resources? Please consider nominating them to attend Holiday Lake Forestry Camp, held June 15-20 at Holiday Lake 4-H Center near Appomattox. This residential camp immerses students in field-based learning and introduces them to careers in forestry, wildlife, and related fields. Forestry Camp is open to Virginia residents aged 13-16 who have not attended before. Nominations can be made by any non-related adult and are accepted Jan. 1- April 1. See <http://dof.virginia.gov/forestry/camp> for forms and information.

## 2015 VIRGINIA KIDWIND CHALLENGES

The KidWind Challenge is a wind turbine design competition for **teams of middle and high school students**. Students incorporate engineering and science to build powerful small-scale wind turbines and compete with students from around the state to generate the most electricity.

***This year we will be holding FOUR Regional Qualifying Challenges leading to the Eastern Finals at JMU on April 25<sup>th</sup>, 2015!***



The top three teams in each division at each Regional Qualifying Challenge will get an invitation to the **Eastern Finals** on **April 25<sup>th</sup>** at **James Madison University!**

**Register at [KidWind.org](http://KidWind.org) for only \$10!**

*\*When you register at KidWind you will receive a kit with some materials (hubs, generator, etc.) to get your team started. The website also has resources for you and your team including a blog and educational resources.*



### Highlighted Superintendent's Memos

- MEMO 015-15  
[Call for Nominations for the Virginia Board of Education's Advisory Board on Teacher Education and Licensure \(ABTEL\) to Fill Two Vacancies](#) 
- MEMO 011-15  
[Presidential Awards for Excellence in Mathematics and Science Teaching \(PAEMST\) Program](#)
- MEMO 003-15  
[Tracking Legislation During the 2015 General Assembly Session](#)
- MEMO 008-15  
[2015 National Youth Science Camp \(NYSC\)](#)

### Articles

***Classroom Observation Protocol: User Guide, AIM: K-8 Science MSP, December 2014.***

AIM: K-8 Science MSP created a classroom observation protocol explicitly tied to research on learning. The protocol was developed to assess student opportunity to develop conceptual understanding of a

targeted science idea across all instruction on that idea. This user guide includes an annotated version of the protocol describing how the protocol is intended to be used.

<http://hub.mspnet.org/index.cfm/27866>

### ***[AcademyScope: Free National Academies Resources](#)***

[AcademyScope](#) is a visualization of all of the reports that are available on the National Academies Press website, allowing you to browse through the reports of the National Academies by topic area and seeing relationships between titles. Check out resources on the biology, history, the future trends of infectious disease--and the Education section, which contains resources for K–12 teachers.

### ***[CEOs Report on Severity of STEM Skills Gap](#)***

In December, the Business Roundtable and Change the Equation released results from the 2014 national survey on workforce skills. Of the 126 CEOs who responded, the vast majority agreed that the skills gap is a problematic issue for their companies. Skills in advanced computer/IT and quantitative knowledge present the biggest gap in these companies. According to the CEOs, many of their companies' job applicants and new hires lack basic STEM literacy. When asked what types of activities are most effective at addressing STEM skills shortages, most CEOs ranked internship programs and curriculum development at educational institutions as their top solutions. Read more about the survey's findings [here](#).

### ***[Designing for Equitable Learning Across Settings](#)***

William Penuel, Tiffany Lee, Bronwyn Bevan, A Research + Practice Collaboratory, April 2014.

As always, please contact one of Science Team if you have questions.

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[Science Resources](#)