



VAST's Vision:
*Excellence in Science Education
Through Innovation*

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VAST.Org or <https://vast.wildapricot.org>

Check the web for news, conference updates, registration, and forms.

The Science Educator

Late Spring 2017

A Publication of VAST, The Virginia Association of Science Teachers

Vol. 65, No. 5



VAST was founded in 1952 to promote excellence in science education.

In 2002 we celebrated our fiftieth anniversary. Do you recognize any of the educators and VAST leaders in the collage above?

**Celebrating 65
years of fostering
excellence in science
education in Virginia.
1952-2017**

This year we celebrate our 65th anniversary and look to the future with great anticipation.

Come celebrate with us, and let's work together to build a brighter future one student at a time.



End of the year...

It is SOL time and we are running around as if it is the end of the world.
Step back and take time for yourself.
This is the time when we say we deserve a break today.
We have done all we can to get those students where we need them.
We have taught and reviewed.
We have excited and made a difference.
Now, it is time for us.
So, get that registration in for the PDI in November.
Let your school division know you did make a difference.
You want to continue to make a difference so allow yourself to reap the rewards.
Ask now while there may be money left over and new monies coming in July.
See you soon!

Susan Booth, EdS
Executive Director

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Shirley Sypolt
VAST President 2017



We are Celebrating Science! at the 2017 VAST PDI

“As an organization, VAST is always stronger and better with your support”!

We have exciting speakers lined up and concurrent sessions are being chosen now. Thanks to everyone across the state that submitted proposals to present at the 2017 Professional Development Institute (PDI)!

VAST has a legacy of 65 years and this year we are “celebrating science” throughout our great state of Virginia and you are invited to come celebrate with us!

Congratulations to the three new appointed members of the VAST Board of Directors: **Elementary Committee Chair & Elementary Extravaganza Coordinator** Jaclyn Claytor, the **VAST Journal Editor** Christopher A. Pyle, and the **VAST Bookstore Coordinator** Jimmy Johnson.

We are still looking for a **Regional Director for VAST Region 8**, which includes the following counties: Amelia, Appomattox, Brunswick, Charlotte, Cumberland, Greensville, Halifax, Lunenburg, Mecklenburg, Nottaway, and Prince Edward. If you are willing, or know of someone else, that can assist our organization by getting science information out in this state region, please email me at ssypolt@hampton.k12.va.us.



The **mission** of the **Virginia Association of Science Teachers (VAST)** is to: inspire students, provide professional learning opportunities, build partnerships, and advocate for excellence at the school, local, state and national level.

Consider giving a “gift VAST membership” (\$25) to a friend or a colleague in 2017. To do this, contact our treasurer Matt Scott at treasurer@vast.org.

Our VAST website has a new look. Take a few moments to share with us, what we can do to help you, our Virginia science educators. How can we use our web site to better support you with science education and/or resources, at all levels?

Come celebrate science with us in 2017!

Shirley Sypolt, Vast President 2017

VAST
PreCon

CELEBRATING
SCIENCE



Sponsored
by Donna
Sterling
Institute

Success for All with Dinah Zike Strategies!!

Hotel Roanoke and Conference Center

THURSDAY, November 16, PRE-CONFERENCE

8:00 am - 3:00 pm

Preregistration is required. Register online at www.VAST.org

The Sterling Committee is excited to announce the Pre-Conference at the 2017 VAST PDI in Roanoke Virginia, on November 16, 2017 will feature the Dinah Zike strategies for successful science teaching. Please join us at the Hotel Roanoke from 8:30-3. You may register at VAST.org to reserve your place. The cost is \$125 and includes the professional development workshop, book, breakfast and lunch plus a materials packet.

Participants will make three-dimensional interactive graphic organizers that can be used to teach Virginia science curriculum standards. Attention will be paid to vocabulary development, as that is a major hurdle for understanding science concepts for struggling learners, including ELL. The activities presented are appropriate for use before, during, and after science instruction, and they are appropriate for recording basic concepts, observations, investigations, experiments, and assessment. Both independent graphic organizers (manipulatives) and dependent graphic organizers (note-booking strategies) will be featured. Teachers will leave the session with inexpensive activities that can be used immediately with their students.

Celebrate Science: Strengthening the 4Cs Using 3-D Interactive Graphic Organizers for Elementary Grades (K-5)

Join a Dinah Zike Certified Trainer in this fast-paced, hands-on presentation as s/he shares methods for strengthening Critical Thinking, Communication, and Collaboration Skills, while encouraging Creativity. This session will focus on 3-D graphic organizers, Visual Kinesthetic Vocabulary (VKVs) and interactive note booking that can be used for daily grades, group work, projects, and/or study guides. Participants will leave the session with inexpensive, easy to develop strategies that can be incorporated into any science curriculum. Materials packets provided, *Dinah Zike's Big Book of Science*.

Celebrate Science: Strengthening the 4 Cs Using 3-D Interactive Graphic Organizers for Middle/High School (6-12)

Same description as above except the book will be *Notebook Foldables for Spirals, Binders, and Composition Books*.



VAST PreCon Workshops

THURSDAY PRE-CONFERENCE HANDS-ON WORKSHOPS
November 16th, 3:15 pm - 4:45 pm

Preregistration is required. Register online at www.VAST.org

Register online at www.VAST.org. Deadline to register is October 31. Cost is \$5.00/workshop. Each workshop is limited to 25 participants.

ELEMENTARY WORKSHOP

GLOBE Elementary - Making the Science and Literacy Connection with Elementary GLOBE

Presenters: Tina Harte, Jessica Taylor, NASA

Elementary GLOBE develops literacy through Earth science-based storybooks that engage the natural curiosity of students through a variety of learning activities and science journaling experiences. In the hands-on learning session “Making the Science and Literacy Connection with Elementary GLOBE,” participants will discover how the Elementary GLOBE storybooks can improve student literacy skills while engaging them in science-based learning. The characters within the Elementary GLOBE storybooks actively apply the following science process skills: asking questions, carrying out investigations, and finding answers by collecting, analyzing, and interpreting data about the world around them. The science content within the storybooks introduces students to key science concepts in soil, water, clouds, seasons, aerosols, climate and Earth systems. Participants will be provided with a variety of learning activities, an implementation guide and science journal ideas that they can incorporate within their classrooms to promote the development of literacy skills while tapping into the natural curiosity of their students.

MIDDLE SCHOOL WORKSHOP

The Role of Reading and Writing in Inquiry-based Middle School Science Instruction

Presenter: Kip Bisignano, Delta Education

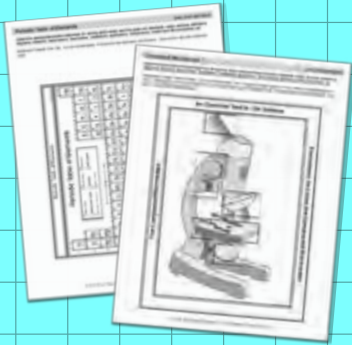
Enhance inquiry in the science classroom through reading and writing activities that complement hands-on science investigations. Scientists use reading and writing to confirm studies, explore applications, and communicate new evidence-based claims. During this session, participants explore energy transfer in a variety of activities and learn a process to embed reading and writing strategies within the context of inquiry-based investigations. Participants will receive resources and materials to begin implementing effective reading and writing strategies during science instruction.

HIGH SCHOOL WORKSHOP

Environmental Science with Vernier

Presenter: Jackie Bonneau, Vernier

Learn how to use Vernier technology to study environmental science in the field or in your classroom. Water quality, renewable energy, and other topics from our Investigating Environmental Science through Inquiry and Renewable Energy with Vernier lab books will be performed using LabQuest 2 in this hands-on workshop. Data Sharing with mobile devices and mapping on Logger Pro will be demonstrated. Explore our wide range of tools that promote understanding of environmental science concepts. Vernier will raffle (2) \$50 gift certificates at the end of the workshop. Copies of labs used during the workshop and Vernier catalogs will also be available for attendees to take home.



Notebooking Central® Templates

Content-specific Notebooking Central® templates available as inexpensive, downloadable pages in English, Spanish, and Dual Language.



Notebooking Central® Stackers

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Learn how to use these tools at our
Science Interactive Notebooking Session
June 23rd - 24th in Comfort, Texas!

www.dinah.com/about/DZA



VAST 2017 CONFERENCE SPONSOR
WE'LL SEE YOU THERE!
NOVEMBER 16-18TH



Receive \$50 OFF Dinah Zike Academy
+ Early Birds get 10% OFF tuition
when they register before May 26th!



1(800)99-DINAH



orders@dinah.com

Schedule-at-a-Glance



Wednesday, November 15, 2017

7:00 p.m.-8:30 p.m. VAST Board of Directors Meeting & Dinner

Thursday, November 16, 2017

Ticketed Dinah Zike Short Courses

7:30 a.m. – 8:00 a.m. Check-in Desk Open
7:30 a.m. Continental Breakfast
8:00 a.m.– 3:00 p.m. **Strengthening the 4 Cs Using 3-D Interactive Graphic Organizers for Elementary Grades (K–5)**
8:00 a.m.– 3:00 p.m. **Strengthening the 4 Cs Using 3-D Interactive Graphic Organizers for Middle/ High School (6–12)**
12:00 p.m. –1:00 p.m. Lunch

2:30 p.m. – 5:15 p.m. PDI Registration Desk Open

Ticketed Pre-Conference Workshops

3:15 – 4:45 p.m. ***Making the Science and Literacy Connection with Elementary GLOBE (NASA)***
3:15 – 4:45 p.m. ***The Role of Reading and Writing in Inquiry-based Middle School Science (Delta)***
3:15 – 4:45 p.m. ***High School Environmental Science with Vernier***

PDI Opens

5:30 p.m. – 6:45 p.m. **General Session I** – Welcome to the PDI
Keynote Speaker: Andrés Ruza, National Geographic Young Explorer
“STEAMY Lessons from the Boiling River of the Amazon”
(Door prize giveaway at the end of the session)

7:00 p.m. – 9:00 p.m. Night with the Exhibitors and Meet Your Regional Director
(Complimentary Snacks) (Cash Bar) (Winners of Exhibitor drawings posted at 8:30 pm)

Friday, November 17, 2017

7:15 a.m. – 5:15 p.m. Registration Desk Open
7:30 a.m. Continental Breakfast in the Exhibit Hall
7:30 a.m. – 10:30 a.m. Exhibit Hall Open (Winners of Exhibitor drawings posted at 5:00 pm)
8:30 a.m. – 9:30 a.m. Concurrent Session 1
9:45 a.m. – 10:45 a.m. Concurrent Session 2
11:00 a.m. – 12:30 p.m. **General Session II- Business Meeting**
Speakers: Andrés Ruza, National Geographic Young Explorer and
Kaleela Thompson, college student
“The Scientific Journey: How Bugs, Volcanoes and Curiosity Can Change the World”
(door prize giveaway at the end of the session)
12:00 p.m. – 1:30 p.m. Ticketed Lunch
12:30 p.m. – 5:30 p.m. Exhibit Hall Open (Winners of Exhibitor drawings posted at 5:00 pm)
1:45 p.m. – 2:45 p.m. Concurrent Session 3
3:00 p.m. – 4:00 p.m. Concurrent Session 4
4:15 p.m. – 5:15 p.m. Concurrent Session 5
6:15 p.m. – 8:15 p.m. Ticketed Dinner/Awards Ceremony (Cash Bar)
8:30 p.m. – 10:00 p.m. Auction and DJ (Cash Bar)

Saturday, November 18, 2017

7:30 a.m. – 10:00 a.m. Registration Desk Open
7:30 a.m. Continental Breakfast in the Exhibit Hall
7:30 a.m. – 11:30 a.m. Exhibit Hall open (Exhibitor raffle results posted at 8:15 am)
8:30 a.m. – 9:30 a.m. Concurrent Session 6
9:45a.m. – 10:45 a.m. Concurrent Session 7
11:00 a.m. – noon Concurrent Session 8
noon – 12:30 p.m. Pickup ticketed box lunch on your way into General Session III
12:30 p.m. – 2:00 p.m. **General Session III** – Meet Your New VAST Officers
Speaker: Callan Bentley, Northern VA Community College
“Astonishing Insights: How Science Helps Us Get Out of Our Heads and See the Real World”
(Door prize giveaway at the end of the session)

May, 2017

VAST 2017 Professional Development Institute

“Celebrating Science”

General Session Speakers



Thursday, November 16, Evening

Andrés Ruza, National Geographic Young Explorer

STEAMy Lessons from the Boiling River of the Amazon

In 2014, National Geographic Explorer Andrés Ruza gave VAST a sneak-peak into his work at the Boiling River of the Amazon prior to its world-wide release. This year Andrés is back and eager to share exclusive behind-the-scenes updates-- highlighting new experiences and advancements in the scientific work and conservation efforts at this sacred geothermal site. Join us for a journey into the Amazon, that started with a childhood legend, and a spark of curiosity!

Investigating a childhood legend led him to the Shan-ay-timpishka, the “Boiling River” of the Amazon, and a sacred site to the indigenous tribes, where the water can reach over 95 °C (203 °F). The greatest mystery of this place: How can a “boiling river” exist 700 km (435 miles) from the nearest volcanic center?



Friday, November 17, Evening

**Andrés Ruza, National Geographic Young Explorer
and
Kaleela Thompson, Student**

***The Scientific Journey:
How Bugs, Volcanoes & Curiosity Can Change the World***

Truly “Celebrating Science” means acknowledging that there is a personal journey behind every new discovery and research paper. With the goal of exploring how to better connect students and adults to science, this session will explore the “scientific journey” from childhood curiosity to impactful initiatives. This session will open with an interview-style format moderated by National Geographic Explorer, Andrés Ruza, and featuring budding butterfly expert, Kaleela Thompson. The latter part of the session will be a town hall style discussion where we will learn from each other as VAST educators, identifying tips and tricks that have worked in the classroom to keep students engaged on their scientific journeys.

Andrés Ruza - Geoscientist - A National Geographic Young Explorer, scientist, author, science communicator and educator, who in 2011 became the first geoscientist granted permission to study the sacred Boiling River of the

Amazon. He believes that environmental responsibility and economic prosperity can go hand in hand, and uses science to unite both aims.

Kaleela Thompson is currently a 17-year-old high school senior at Kecoughtan High School in Hampton, Virginia who plans to attend college this fall. She was the 2013 recipient of the National Science Teachers Association’s Angel Award, which is given annually to honor one female student in grades 5-8, who has a strong connection to science Kaleela has also won a Prudential President’s Volunteer Service Award and an Office Depot Adopt a Small Business Award (having founded her own organization ***My Home, My History and Our World***, an online site where kids can go to learn about places and their history. As a sixth grader, Kaleela was a published author, with her first book ***Oh Where Oh Where is my Swallowtail***. She won a full scholarship and spent a whole week as a 2013 Teen Ambassador to SeaWorld in San Antonio, Texas.

VAST 2017 Professional Development Institute
“Celebrating Science”
General Session Speaker

Saturday, November 18, Afternoon



**Callan Bentley, Chancellor’s Commonwealth
Professor of Geology,
Northern Virginia Community College**

“Astonishing Insights:

***How Science Helps Us Get Out of our Heads and
See the Real World”***

Callan Bentley currently is an assistant professor of geology and Chancellor’s Commonwealth Professor of Geology at Northern Virginia Community College’s Annandale campus. He received a BS in geology at the College of William & Mary (1996), an MS in geology from the University of Maryland, College Park (2004), and an MS in Science Education from Montana State University (2009). He currently is an assistant professor of geology and Chancellor’s Commonwealth Professor of Geology at Northern Virginia Community College’s Annandale campus.

He is a frequent contributor to EARTH magazine and is the author of the geology blog Mountain Beltway. Callan was a contributor to five geology and Earth science textbooks published by Pearson and is under contract to write another as lead author. He has become known as an innovator in

digital geology, in particular for the use of GigaPan images of outcrops and samples, a technique that allows “virtual field experiences” for distance learners and students with disabilities.

Callan was a 2010 Fellow of the Fine Outreach for Science initiative. The Virginia Community College System named him as the recipient of the 2012 Chancellor’s Award for Teaching Excellence. NOVA honored him with the Presidential Sabbatical Award in 2013. He received the Biggs Award for Geoscience Teaching Excellence from the Geoscience Education Division of the Geological Society of America in 2014. The State Council of Higher Education for Virginia recognized Callan with the Outstanding Faculty Award in 2015.

IMPORTANT INFORMATION ABOUT THE VAST PDI

Registration for the preconference, short courses and workshops are not available on site. [LINK](#)

Meal purchases are not available on site. Sign up for them when you register. [LINK](#)

The Hotel reservation link is now open on the PDI page at [vast.org](#). [LINK](#)

PDI registration link is now open on the PDI page at [vast.org](#) [LINK](#)

A Link to purchase an exhibit hall booth is now open on the PDI page at [vast.org](#). [LINK](#)

PDI Booklet [LINK](#)

**Questions: contact John Kowalski (pdi@vast.org) or
Susan Booth (susan.science@gmail.com)**



Hotel Roanoke, Roanoke, Virginia

**Register for the PDI and
Your Hotel Room
Hotel Roanoke, Roanoke, VA**

Online PDI Registration: [Click](#)

Online Hotel Information: [Click](#)

Virginia Tech

College of Natural Resources and Environment



Preparing students through career-oriented programs

- | | | |
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| • Packaging systems
and design | • Fish and wildlife | • International development |
| • Sustainable biomaterials | • Forestry | • Conservation and recreation |
| • Environmental informatics | • Geospatial technologies | • Environmental management |
| | • Environmental education | |

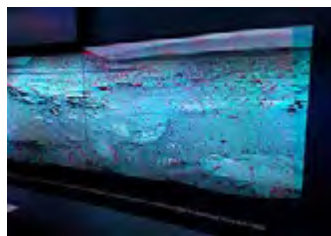
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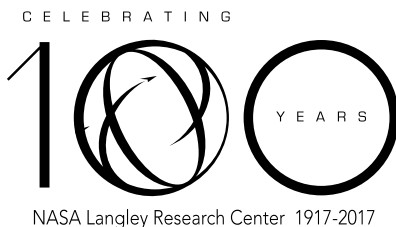


NASA Langley's Centennial Experience Exhibit



NASA Langley Research Center's Centennial Experience lets visitors ride along to discover its past 100 years of historic accomplishments related to aeronautics, science and space research and exploration. Showcasing a variety of NASA artifacts, audiovisual technology and unique 3D imagery, visitors are immersed in Langley's early beginnings as the first civilian aeronautics lab to becoming the birthplace of the National Aeronautics and Space Administration. Visitors also have an opportunity to go with NASA as we take the next giant leaps - to make airplanes fly faster, cleaner and quieter, to improve our understanding of our home planet, Earth, and to have humans journey to Mars. From their experience, visitors will come away excited about Langley's storied legacy and ready to be a part of its soaring future.

The new GLOBE Observer app will accompany the Centennial Exhibit. Explore and join the GLOBE community by contributing important scientific data to NASA and GLOBE, your local community, and students and scientists worldwide.



A Storied Legacy, A Soaring Future

www.nasa.gov/langley/10

#NASALangley100

Visit NASA' Centennial Experience Exhibit at VAST:

Thursday, November 16th, 2017
7:00 p.m. - 9:00 p.m.

Friday, November 17th, 2017
7:30 a.m. - 10:30 a.m.,
12:30 p.m. - 5:30 p.m.

Saturday, November 18th, 2017
7:30 a.m. - 11:30 a.m.

*Located in Hotel Roanoke parking lot

In addition, NASA Langley's Office of Education and Science Directorate are teaming up with your fellow Educators to demonstrate seven new activity kits related to each of the NASA communication priorities:

- Earth Right Now. Your Planet is Changing. We're on it.
- Technology. Technology drives exploration.
- ISS. Off the Earth, for the Earth.
- Aeronautics. NASA is with you when you fly.
- Mars. Join us on the journey.
- Solar System and Beyond. NASA: We're Out There.

Accessibility: This exhibit is ADA compliant and offers motorized and non-motorized wheelchair accessibility.

Engaging Tough Topics

Chuck English

Science Museum of Virginia Educator

VAST Board Member

www.smv.org



Data are our friends. Good, solid data and their scientific interpretation is what we rely upon at the Science Museum of Virginia. Focusing on what the scientific community has collected, observed, analyzed and reviewed creates the foundation by which we teach topics that often receive critical review – like climate change.

The Museum has several programs that highlight the differences between weather and climate and demonstrate how we can identify that our climate has already changed using data sets from federal science agencies like NOAA (The National Oceanic and Atmospheric Administration) and NASA (The National Aeronautics and Space Agency). These changes are not impacting every area around the globe equally or at the same rate; however, there is an undeniable change occurring worldwide.

Climate change is not only observed in air temperature, species habitat shifts and precipitation extremes, but can also be studied through ocean temperatures. The increase of certain compounds in the air or water allows scientists to identify how these recent changes are more dramatic than they were through other global climate changes and shifts.

The Museum has received a grant from the NOAA Office of Education to study, interpret and communicate these critical facts to the public. To help spearhead these resiliency efforts, the Museum hired Paleoclimatologist Dr.

Jeremy Hoffman whose expertise and studies focus on how the world has changed through environmental evolutions in its past and how we can identify the significance of the shift occurring today relative to Earth's natural history.

By measuring air trapped in ice core samples and shells in the mud at the bottom of the ocean, researchers have determined that carbon dioxide and methane gas is being released at a rate at least 10 times faster than during any other time period in the past 66 million years. This empirical data points to a new global variable that is driving this change... humans.

By sharing the growing wealth of data via digital platforms and developing classroom materials for educators, the Museum is providing access to resources that will help the greater community better communicate and understand climate change. Museum staff is currently creating a sports and psychology comparison that will be featured on our YouTube channel – comparing weather and climate to batting average and being 'at bat' or your mood to your personality. To see many other original videos on topics from climate change to da Vinci's anatomical study of the foot, we encourage you to visit:

[Youtube.com/ScienceMuseumVA](https://www.youtube.com/ScienceMuseumVA).



Icebergs float off the port of Ilulissat, Greenland, as U.S. Secretary of State John Kerry passes by aboard HDMS Thetis on June 17, 2016, so he and Danish Foreign Minister Kristian Jensen could take a cruise through an iceberg field created by the Jacobshavn Glacier Front, receive a briefing from climate change scientists, and meet with Greenlandic Premier Kim Kielsen and Foreign Minister Vittus Qujaukitsoq. [State Department photo/ Public Domain]

Nominations Open for the VAST RISE Awards

VAST RISE Awards are presented to spotlight the excellent work done by science educators across the Commonwealth. They recognize service to science education in the individual's school, school system, and the VAST district in which they work. The awards are grouped in twelve distinct categories:

- Elementary (preK-5)
- Middle school (6-8)
- Biology
- Chemistry
- Earth Science
- Physics
- Environmental Science
- At-Risk Students (K-12)
- Resource Teacher (examples: Technology, Science Resource, Etc.)
- Science Educator (non K-12-Examples Science Supervisor, Information Education, Principal, Etc.)
- University/College Faculty
- Community Partnership (example: Businesses, Politicians, Other Organizations, Etc.)

Note: Nominees do NOT need to be a member of VAST.

The number of awards to be given each year will be determined by the Awards Selection Committee based on the qualifications of the nominees. The awardee are invited to attend the VAST PDI and will be recognized at the annual VAST PDI banquet.

Awards Nomination deadline is August 20, 2017.

Applicant does not need to be a VAST member.

Nominations can be made online or by hard copy. Click Awards Form to print out hard copy to submit. Hard copy nominations should be mailed to: **Timothy Couillard, VAST Awards and Grants Committee Chair**

3700 James River Road, Midlothian, VA 23113

or you can email them to him at awards@vast.org

Submit your nomination online!

<https://vast.wildapricot.org/Awards>

VAST Mini-grant Program Accepting Applications

The purpose of the VAST Mini-grant program is to provide seed money for innovative curriculum activities which expand learning opportunities for science students. Team applications are welcome, however one person must be designated as the Project Director. The Project Director must be a member of VAST (dues paid for 2017), must have taught at the elementary or secondary level for a minimum of three years, and must be currently employed as a teacher.

Awardees will be selected by a committee appointed by the VAST President. The committee will be looking for projects that will directly impact student learning in the science classroom. The committee will also evaluate the originality, creativity and cost effectiveness of the proposals. Ideally, the projects that are funded will provide the students with new experiences and make possible new scientific investigations. Preference will be given to persons who have not received prior VAST Mini-grant awards. The selection committee may elect to not make an award if the proposals do not meet the stated criteria. It is anticipated that most awards will be made in the range of \$200-\$500.

Mini-grant funds may be spent for supplies, equipment, printing, and other materials essential to the project. Mini-grant funds are not intended for student travel (field trips) or for the personal remuneration of the grant recipients. All materials will become the property of the school/school system in which the Project Director is employed at the time the grant is awarded.

Due Date: June 1, 2017 The applications are available on the VAST website:

<https://vast.wildapricot.org/Grants>

We look forward to supporting your ideas for enhancing your students' science experience!

Timothy Couillard, Awards and Grants Committee Chair

Apply for the Sterling Award

Could you use \$4000 for professional development? Would you like to go to the next NSTA national meeting to learn more about ways to enhance your teaching? How about traveling to a coral reef for first hand experiences that you can use in your classroom? How about taking a class in a specific computer language so you can use that knowledge to launch a high-altitude balloon (along with some funding to help pay for equipment)? These are ways you can use the professional development funds you'll receive when you win the Donna R. Sterling Exemplary Science Teaching Award. Applications are being accepted from elementary teachers for the 2017 Sterling Award, and directions for the application can be found at:

<https://vast2016.wildapricot.org/Awards>

The deadline for applications is July 15.



**Major Norman Marshall won the
2016 Donna R. Sterling Exemplary Science Teaching Award**
The title is honorary, yet customary at Franklin Military.



Nature Backpack Program

Chuck English
Science Museum of Virginia Educator
VAST Board Member



The Science Museum of Virginia partnered with the Library of Virginia and the Virginia Department of Conservation and Recreation to create 762 Nature Backpacks. Distributed to over 205 libraries across the Commonwealth, the Nature Backpacks are available for check-out at participating libraries – allowing community members to access and borrow the backpacks in the same fashion as other library resources. Families that check-out a backpack at their local library are also invited to visit any Virginia State Park free of charge this summer.

Each backpack is filled with a variety of materials for experimentation, exploration and identification. Some backpacks include bug catchers, magnifying

lenses, identification flyers for plants and animals; others include binoculars, star maps, compasses and rainy day trivia/activity cards. The backpacks were developed to encourage exploration in the natural environment in our own communities, as well as encourage scientific investigation and experimentation alongside friends and family.

Spread the word! Let your students know about this opportunity, so that they can borrow a backpack and enjoy unique activities with their families the summer. It is a great way to engage a multigenerational group – showing the value of life-long learning and curiosity.

A Diary of a Pre-service Kindergarten Teacher

What do kindergartners learn about science? Pre-service teacher, Maria Caragiulo is excited about her experience this year and her students are observing, measuring, comparing, questioning and communicating.

Maria Caragiulo
William and Mary
Masters in Education-2017
Greenwood Elementary,
Newport News.



Our living things unit focused on plants. We grew sunflowers and then looked at the individual parts under magnifying glasses (leaves, roots, seeds, and stem)



During our sink and float unit, we learned about boats, the Titanic; and we created and tested aluminum foil boats. The boat that held the most chain links held 37 links before it sunk and filled with water.



One of our field trips was to the Children's Living Museum. Students explored magnetism and different kinds of fish at one of the stations.



Our resources unit culminated in listing ways to help conserve nonrenewable resources. We painted pictures of the Earth as a study of the water that covers our planet.

Questions? Contact Maria Caragiulo @
mecaragiulo@email.wm.edu

OVER 70 NEW Earth and Space Sciences Digital Resources, produced by WGBH and available on PBS LearningMedia™

Developed through WGBH's Bringing the Universe to America's Classrooms project, in collaboration with NASA*, these innovative digital media resources leverage satellite images, data visualizations, and videos drawn from NASA, as well as such WGBH signature programs as NOVA and PEEP AND THE BIG WIDE WORLD. Digital media contextualized for K-12 on sunspots, shadows, the sun, climate, minerals, water, climate, and more. The resources in this collection were developed with input from a group of teacher advisors from across the country, and are just the start of work that will continue over the next four years.

More Coming in August!

A total of seven interactive Instructional Modules for grades K-12.

K-2: Weather; Land & Water

3-5: Weather & Climate; Land & Water

6-8: Story of Earth; Weather & Climate

9-12: Weather & Climate



Bringing the Universe to
America's Classrooms
Collection

The Solar Eclipse is happening August 21. Are you ready?

We've put together this downloadable guide to help you teach about the upcoming solar eclipse. It points to resources on both the NASA and PBS Learning Media sites, and answers some of the questions teachers asked us in a recent survey. We're also putting together exciting informal professional development events about the solar eclipse. Details on the guide.

Tweet your questions and thoughts about teaching the eclipse any time using **#TeachEclipse2017!**

[Click to download a copy of the guide.](#)

For an Educator Eclipse Toolkit with more information about teaching the eclipse. bit.ly/EclipseToolkit

[Click to the Educator Eclipse Kit with even more materials.](#)

*This activity is funded by NASA under cooperative agreement award No. NNX16AD71A. Any opinions, findings, and conclusions or recommendations expressed in this material are those of the author(s) and do not necessarily reflect the views of the National Aeronautics and Space Administration.



Bear Aware – What You Do Really Matters!

Virginia is home to a healthy population of black bears – one of our biggest conservation success stories. Black bears are found almost everywhere throughout the Commonwealth, so it is common for people to live, work and play in bear country. It is incredibly important for people to learn the facts about black bears and to know what they can do to prevent conflicts. This way, we can make sure we keep bears wild and coexist for generations to come. To keep bears wild, what YOU do really matters.

A highly adaptable and intelligent animal, bears can live close to people. While local residents often do not know bears are living close by, some bears may wander into residential areas due to the smell of food around homes. The most common food attractants are birdfeeders, garbage, and pet food; however, outdoor grills, livestock food, compost, fruit trees, and beehives will also attract bears. With some simple steps, you can reduce the chances of bears making repeated visits to your neighborhood or property.

- Secure your garbage in bear resistant trash cans or store it in a secure building.
- Take down bird feeders if a bear is in the area.
- Don't put meat scraps in your compost pile.
- Don't leave pet food outdoors.
- Keep your grill clean.
- Make sure your neighbors are following the same recommendations.
- Install electric fencing, an inexpensive and extremely efficient proven deterrent to bears, around dumpsters, gardens, fruit trees, beehives, or other potential food sources.
- After a few failed attempts to find food around homes, bears will usually leave the area in search of natural wild foods.

In almost all cases, a black bear will detect you and leave the area before being noticed. However, if you do encounter a bear, here are some suggestions:

- Never run from a bear. Running could prompt the bear to chase. If in a group, stay together and make sure that your dog stays leashed.
- Enjoy and keep a respectful distance! If a bear is up a tree on or near your property, give it space. Do not approach, and bring your pets inside to provide

the bear a clear path to leave your property.

- If the bear hasn't seen you, calmly leave the area, while making a bit of noise so the bear will not be surprised by you.
- If the bear has seen you, back away slowly while facing the bear. Speaking softly may also let the bear know you mean no harm.

What do I do if I see a bear cub on my property?

- Until April/May, sows with cubs are typically in dens. Most small bears people see in early spring are not actual "baby bears" but yearlings (>12 months old). They do not need their mothers to survive.
- If a small yearling is on your property, the worst thing you can do is feed the bear. Yearlings need to learn how to find natural foods and not become food conditioned or habituated to humans.
- Once females leave their dens with 4 to 5 month-old cubs, they will typically travel in close groups unless something makes the female nervous. If you see a very small cub, do not try to remove it from the area or "save it." When sensing danger, a female bear will typically send her cub(s) up a tree and leave the area. In such cases, the female will almost always return to gather up the cub(s) when no people or pets are around, usually after dark.

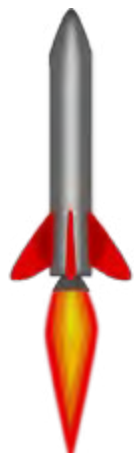
Preventing problems with bears is a shared responsibility between the citizens of Virginia and the Virginia Department of Game and Inland Fisheries. Always remember that a bear is a wild animal, and that it is detrimental to the bear, as well as illegal in Virginia, to feed a bear under any circumstances. Even allowing a bear to feed on trash or birdseed is illegal. You can help manage the Commonwealth's black bear population and Keep Bears Wild.

If you experience a bear problem after taking appropriate steps of prevention, please call the Wildlife Conflict Helpline at (855) 571-9003.

Please visit www.dgif.virginia.gov/wildlife/bear to view videos, print a brochure, read more about bears in Virginia, and view other useful links to bear information.

Remember, if you live in Virginia, you live in bear country. Let's work together to Keep Bears Wild!

To report wildlife crime call **1-800-237-5712**.



VSGC: News from RFTS National Rocket Competition

Enroll your kids in the 11th annual **Reach for the Stars ~ National Rocket Competition**.

Excite them about **STEAM** (Science, Technology, Engineering, Art, Math) Subjects.

Fun, Affordable & Easy to Run

- Request a 'No Obligation' estimate before the end of May – and receive a FREE Launch Set (value \$25 to \$30) when you place your order.
- Run at your location – no travel cost or hassle.
- Just answer the questions below and we'll send your free, 'no obligation' estimate.
 1. How many competitors? (minimum 10)
 2. What age / grade? (age 10 to 18)
 3. When do you want to launch? (annual deadline June 30th)
 4. Do you have launch equipment? (launch pad and control)
 5. Are you experienced?

Five national winners get to celebrate and launch under an **October Sky** at **Space Camp / US Space & Rocket Center** in 'Rocket City', Huntsville, Alabama.

Wishing you light winds on launch day. Jack & Kathy Colpas, co-directors

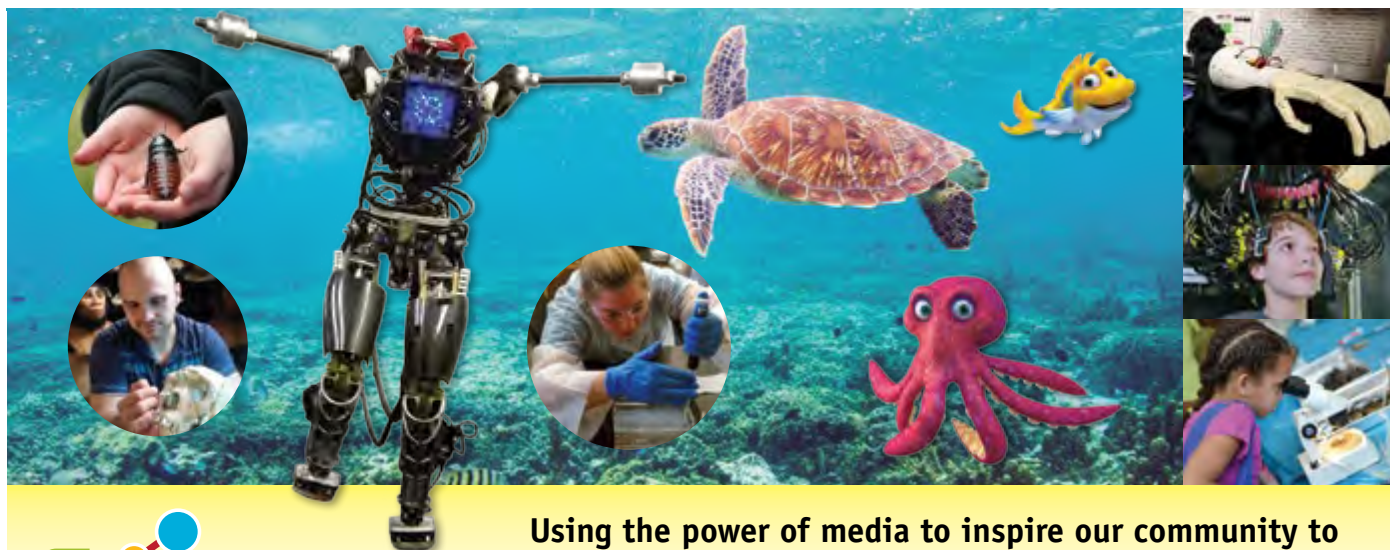
Reach for the Stars ~ National Rocket Competition

STEAM - Educational Outreach (Science, Technology, Engineering, Art, Math)

Honoring the memory of Christa McAuliffe / 1st Teacher-in-Space

www.RocketCompetition.com RocketCompetition@gmail.com

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Using the power of media to inspire our community to value science and understand its importance to our future

Educational Resources for Teachers and Parents

Hot Shots & Hot Jobs in STEM fields

Green Kids encouraging Environmental Stewardship

Community Events Calendar a hub for Science Events

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MATTERS**



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Project Learning Tree and the Norfolk Botanical Gardens are offering an Educator Workshop

Two PLT Secondary Modules:

Focus on Forests and ***Forests of the World***

Date: June 5, 2017

Time: 9:30 – 2:00

Cost: \$10.00

Bring a packed lunch.

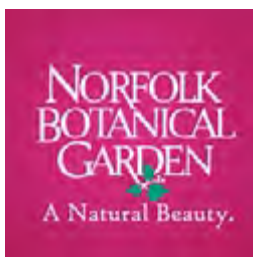


This module's activities provide an opportunity for hands-on study of forest resources while addressing concepts in biology, civics, ecology, economics, forest management, and other subject areas. The activities are designed to lead middle and high school students, or the general public into examining ecological systems of a forest; analyzing interdependencies within a forest ecosystem; and exploring factors, such as fire, that shape the development of forests. In addition, they will develop critical thinking skills and discover the importance of scientific analysis when making decisions about forest issues.

In this module participants learn how connected they are to forest ecosystems around the world as they conduct research and apply critical thinking skills to consider the social, economic, and environmental implications that underlie decisions about forest management. The module includes a poster-size map of the world's forests and a set of students' maps.



Questions? Call Page Hutchinson at 804-966-2201 or
Email page.hutchinson@dof.virginia.gov



To register for this workshop

<http://norfolkbotanicalgarden.org/events/project-learning-tree-educator-workshop-june/>

BioEd Online's Resource Collections

K-12 Baylor College of Medicine

BioEd Online's Resource Collections K-12

(<http://www.bioedonline.org>)

The teaching resources from the Baylor College of Medicine cover a wide range of science topics for grades k-12. Each collection has teachers guides, individual lessons, digital slides, video presentations, and other related content, including current research news and reading comprehension materials and activities, to provide a detailed look at each topic. Highlights from Neuroscience: The Learning Brain and BrainLink include *The Senses* teachers guide and the *Making Sense!* storybook (grades K-1), which explores the connections between the brain and senses. The *Train Your Brain* teachers guide (grades 3-5) presents activities investigating how we learn and remember things. Other guides in the collection

address *Brain Comparisons*, *Memory and Learning*, *Motor System*, and *Sensory System* (grades 3-8) and *Brain Chemistry* (grades 6-12); these guides include take-home student magazines and mystery narratives that bring each topic to life. Find this collection and others at:

<http://www.bioedonline.org/lessons-and-more/resource-collections/>

New: K-3 Lessons:

<http://www.bioedonline.org/lessons-and-more/resource-collections/k-3-stem-foundations-life-science/>

Lessons by Topic:

<http://www.bioedonline.org/lessons-and-more/resource-collections/>

NSTA Reports, May 2017, Science Teachers Grab Bag, Freebies for Science Teachers

Our Lesson Plans Include You

As a first-grade teacher, Heather Waild needed a high-quality, affordable and flexible graduate school. She chose Regent University for its leading-edge, values-based teaching and top online program — as recognized by *U.S. News & World Report*, 2016. With convenient eight-week sessions, Regent helps you earn your degree at your own pace. Let our expert faculty prepare you for the next step in your teaching career.

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Attention VAST Members

By now you probably have seen the new VAST.org website, but have you logged in and checked your member profile? If not, it's easy to do.

When you arrive at the home page, look for the “login” button in the upper right hand side of the page. You have the option of logging in with the email address in the VAST contact or member database or through your Facebook or Google+ accounts. Once your profile page opens, you can: see and edit your membership information; adjust your privacy settings; see what email subscriptions you are signed up for; upload photos and create albums; and, see if you have any invoices or payments.

Being able to personally edit your member information is a powerful tool and it's very important to VAST too. We want to keep in touch and utilize the best ways to connect with you! In the meantime, if you ever have any questions about your membership, feel free to contact membership@vast.org

In the coming months, look for more opportunities to benefit from being a VAST member.

**Virginia Tech's Powell River Project
Research & Education Center
Virginia Center for Coal & Energy Research
Virginia Coal & Energy Alliance
United States Energy Association**



Present:

**23rd Annual “Project Coal & Gas: Production & Usage”
Energy Education**

July 9 through July 15, 2017

**The University of Virginia's College at Wise
Wise, Virginia**

**A partnership of Virginia Tech and Virginia State University www.ext.vt.edu
Virginia State University**

If your teaching assignment includes natural resources this program is for you. Come visit the Appalachian Plateau in far southwest Virginia for a first hand look at local geology, coal mining, gas production, reclamation, coal and gas utilization, and some local history.

This program augments and supports 3rd, 4th, 5th, 6th grade, and Earth Science Standards of Learning relating to non-renewable resources - rock, coal, and natural gas. There is also ample opportunity to discuss issues relating to two of Virginia's natural resources - forests and water.

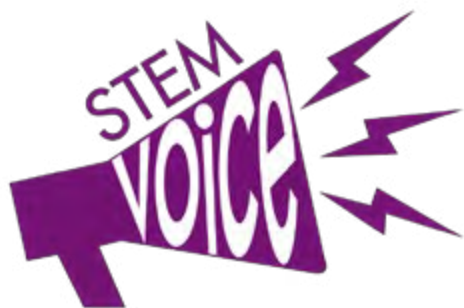
FOR MORE INFORMATION:

Virginia Coal & Energy Alliance - P. O. Box 339, Lebanon, VA 24266

PHONE: 276-889-4001 • FAX: 276-889-3055 • E-MAIL: vcea@virginiacoalenergy.com or pmeeks@vt.edu

Website: www.virginiacoalenergy.com

[Flyer](#) [Application](#)



Are you a student in 5th - 12th grade?

Want to show the world how much you love STEM?

Enter the STEM Voice Video Competition today!



CSBI's mission is to ensure America's leadership in bioscience innovation by delivering industry-led life science education, workforce development and entrepreneurship programs through a nationally coordinated effort.

East Regional Coordinator



Central Regional Coordinator



West Regional Coordinator



Sponsored by:



Submit your 60 Second Video

You could win up to \$700 in cash prizes!

The STEM Voice™ Video Competition is nation-wide opportunity for kids in grades 5-12 to artistically explore the importance of STEM. The competition is managed by the [Coalition of State Bioscience Institutes, CSBI](http://www.csbiinstitutes.org).

The STEM Voice™ competition encourages you to be creative and use video to show how much you love STEM. Act it out, create an animation, sing it but, make sure it is appropriate for all ages.

Eligibility:

- Must be in grades 5-12 and under 18 years of age
- Middle School contest is students in grades 5-8; High School contest is for students in grades 9-12
- Entries accepted in both individual and group categories
- Resident of United States or their territories
- Cannot be related to employees of STEM Voice™ Video Competition

Prizes:

- Regional individual winners in age division - \$250 cash
- Regional group winners in each age division - \$450 cash to your club/school
- Regional winners eligible for National Grand Prize. See website for details: <http://www.csbiinstitutes.org/stemvoice-competition>

View 2016 videos: Coalition of State BioScience Institutes YouTube Channel

Timelines:

- March 15, 2017 Applications Accepted
- May 22, 2017 DEADLINE for Submission of Videos
- June 9, 2017 Regional winners announced
- June 30, 2017 National winners announced

Questions? Contact your regional STEM Voice™ contest coordinator

#STEMVoice2017



Question your world.





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www.cposcience.com

www.freyscientific.com



Science Museum of Virginia

2500 West Broad Street
Richmond, VA 23220

www.smv.org



Delta Education

80 Northwest Boulevard
Nashua, NH 03063

www.delta-education.com

Virginia Space Grant Consortium

600 Butler Farm Rd. S-200
Hampton, VA, 23666

www.vsgc.odu.edu



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Is Your Address Changing?

Be sure to let VAST know your new contact information. Neither the post office or the Internet will forward our newsletters. Please e-mail **Barbara Adcock, Membership chair:** membership@vast.org

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Join the VAST community on line. "LIKE" the Virginia Association of Science Teachers so that the latest science educational news will appear on your page. Region 2 has a new Facebook page. Please visit and join our community at: <https://www.facebook.com/Region2VAST>

Please consult the website for up to date information, VAST forms for awards and mini-grants, advertising and current PDI information: vast.org or <https://vast.wildapricot.org>

Mission: The Virginia Association of Science Teachers (VAST) is a community of Science educators whose mission is to:



- inspire students,
- provide professional learning opportunities,
- build partnerships,
- advocate for excellence at the school, local, state and national level.

Please send articles, letters to the [editor](#), or labs by the submission deadline, **July 10, 2017**, for inclusion in the next digital PDI VAST Newsletter.

The Virginia Association of Science Teachers is incorporated in Virginia as a charitable, scientific, and educational organization, is an IRS 501 (c) 3 qualified organization, and is registered with the Virginia Department of Consumer Affairs.