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# The Science Educator

Fall 2012

A publication of VAST, The Virginia Association of Science Teachers

Vol. 61, No.2

## VAST 2012 Professional Development Institute *Designing Your Way Through Science* November 7-10, 2012

### General Session I - Kenneth Wesson



#### *Next Generation Success: Teaching Students to Think Scientifically*

An expert on the neuroscience of learning at all levels. How do you create "brain considerate" learning environments?

Sponsored by Delta Education & Virginia Science Education Leadership Association.

### General Session II - Heidi Schweingruber & Stephen Pruitt



#### *From Framework to Next Generation Science Standards*

Schweingruber is a codirector of the Committee on a Conceptual Framework for new Science Education Standards at the National Academy of Science. Pruitt is the coordinator of the work of the states to write the standards at Achieve.

Sponsored by Virginia Science Education Leadership Association.

### General Session III - William Kelso & Adriana C. Ocampo



#### *Explorers of the Past: Discovery and Founding of Jamestown*

Kelso, Virginia archeologist's work includes Historic Jamestowne, Colonial Williamsburg, Monticello, Carter's Grove, and Poplar Forest. Discovered the 1604 James Fort on Jamestowne Island.

#### *Explorers of the Present and Future*

Ocampo will discuss current NASA missions including human and robotic exploration plans for the future. Her research led to the discovery of the Chicxulub crater and the cause of the extinction of dinosaurs and more life. Session III Sponsored by NASA

### General Session IV - Jennifer Seydel



#### *The Greening of Schools from the Inside and Out*

Seydel, an educator for over 30 years, is Chief Operations Officer of the Green Schools National Network. She works with schools to integrate green and healthy cultures promoting environmental literacy. Session IV Sponsored by Virginia Resource Use Council

### General Session V - Mireya Mayor

#### *My Wild Life!*

NFL cheerleader, mother of two, global adventurer, TV star, Mayor has done it all. She is a Fulbright scholar, a National Science Foundation Fellow with a Ph.D. in anthropology from Stony Brook University and now is in a series as well as a documentary special for the NAT GEO WILD Channel.

Sponsored by National Geographic Learning/ Cengage Learning



## Visit Museums and More FREE at the VAST PDI!

The Jamestown-Yorktown Foundation is offering free admission to their **museums, Jamestown Settlement and Yorktown Victory Center**, for teachers attending the VAST PDI conference in November. By simply showing your conference badge at the front desk of both museums, conference participants will be admitted free of charge. Look for our flyer at the registration desk.

## Register for the PDI and for Your Hotel Stay

Go to the VAST Web Page ([www.vast.org](http://www.vast.org)) to get the latest information and to register! Don't forget to include the Friday evening dinner, and Thursday workshop or field trip.

## PDI 2012: Meet Your Regional Director for a Chance to Win a New Vernier LabQuest® 2!



Regional Directors will be introduced at the Friday morning General Session (2). They will be giving out a special ticket for a drawing for the Vernier LabQuest®2. Take your ticket to the Vernier Booth, get a demonstration of the LabQuest®2 and you are entered to win! The drawing will be held at the last General Session (5) on Saturday afternoon.

## VIRGINIA SCHOOLYARD HABITAT



### PROGRAM



#### Your School Can Request a Teacher Workshop

The VA Department of Game and Inland Fisheries offers six-hour workshops for K-12 teachers on planning and using a schoolyard habitat as an outdoor classroom to teach the state Standards of Learning. Workshops are usually arranged for the faculty at one school. Go to [www.vanaturally.com](http://www.vanaturally.com) and click on "WET, WILD... WORKSHOP REQUEST FORM."



#### Do You Already Have a Schoolyard Habitat?

Apply for a Habitat Partners® Certificate! A good habitat has food, water and cover for a variety of wildlife species. If your school qualifies for a certificate, you can receive a Habitat Partners® sign. Application available at [www.dgif.virginia.gov/habitat/schools/](http://www.dgif.virginia.gov/habitat/schools/)

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# VAST Professional Development Institute

## *Designing Your Way Through Science*

Williamsburg Hotel and Conference Center

November 8 – 10, 2012

### Thursday, Nov. 8

8:30 am - noon

8:45 am

9:00 am-Noon or 3:00 pm

9:10 am

9:15 am

12:00 noon - 1:00 pm

12:30 pm

1:00 pm - 4:00 pm

1:00 pm - 4:00 pm

2:00 pm - 5:15 pm

5:30 pm - 6:30 pm

*Scientifically”,*

6:30 pm - 8:00 pm

8:15 pm - 9:15 pm

### Friday, Nov. 9

7:00 am - 4:30 pm

7:15 am

8:00 am - 9:00 am

9:15 am - 10:05 am

10:00 am - 6:00 pm

10:20 am - 11:10 am

11:25 am - 12:15 pm

12:15 pm - 1:15 pm

12:15 pm - 1:15 pm

1:30 pm - 2:20 pm

2:35 pm - 3:25 pm

3:40 pm - 4:30 pm

4:00 pm - 6:00 pm

6:00 pm - 6:30 pm

6:30 pm - 8:00 pm

8:00 pm - 10:00 pm

VSELA Program

Virginia Living Museum Rocks and Minerals of VA Workshop plus

Tour Fieldtrip departs Williamsburg Hotel

**Pre-Conference Institutes sponsored by the Martinson Center for Mathematics and Science**

**Jamestown and the Tidewater in 17th Century Virginia** Fieldtrip

departs Williamsburg Hotel

**Boat Investigation with the Chesapeake Bay Foundation** Fieldtrip

departs Williamsburg Hotel

**VSELA, Delta, CPO and Martinson Center** workshop Lunches

**Hampton's History with John Quarstein** Fieldtrip departs

Williamsburg Hotel

**Pre-Conference Institutes,** Sponsored by Delta Education and CPO Science

VSELA Program

**VAST Registration** Desk Open

**General Session One - Kenneth Wesson**

*“Next Generation Success: Teaching Students to Think*

*Sponsored by VSELA and Delta Education*

**VSELA and VAST Reception** (Exhibit Hall Open), Sponsored by Virginia

Space Grant Consortium

**VAST Board of Directors** Meeting and Dinner

**VAST Registration** Desk Open

Continental Breakfast

**General Session Two - Heidi Schweingruber & Stephen Pruitt**

*“From the Framework to Next Generation Science Standards”*

*Sponsored by VSELA*

Concurrent Session A

Exhibit Hall Open

Concurrent Session B

Concurrent Session C

Visit the Exhibit Hall

Preservice and Student Lunch

Concurrent Session D

Concurrent Session E

Concurrent Session F

Celebration of Science in Exhibit Hall, Sponsored by Delta Education

Ticketed dinner

Awards Presentations – PAEMST awards, VAST awards, VABT award, VJAS award

**General Session Three - William Kelso and Adriana Ocampo**

*“Exploration Past, Present and Future”,*

*Sponsored by NASA and Dominion*

Auction - DJ - Social



Saturday next page

## 2012 VAST Professional Development Institute *Designing Your Way Through Science*

### Saturday, Nov. 10

7:00 am - 12:00 pm

7:15 am

8:00 am - 9:00 am

8:30 am - 12:00 pm

#### **Registration desk open**

Continental Breakfast

Concurrent Session G

Exhibit Hall Open

9:15 am - 10:05 am

#### **General Session Four** - Annual Business Meeting

Jennifer Seydel, Chief Operations Office of the Green Schools National Network

*"Greening Schools from the Inside and Out",*

Sponsored by VRUEC



10:20 am - 11:10 am

Concurrent Session H

11:00 am - 11:45 am

Visit the Exhibit Hall

11:45 am - 12:35 pm

Concurrent Session I

12:50 pm - 1:40 pm

Concurrent Session J

2:00 pm - 3:00 pm

#### **General Session Five** - *Door Prizes*

Mireya Mayor, National Geographic Explorer

*"My Wild Life",*

Sponsored by National Geographic Learning



Visit the VAST Store in the exhibit hall  
for VAST items and NSTA Press books.



Purchase books from the NSTA Press and avoid shipping costs. If you are a member of NSTA you may also enjoy a 20% discount with proof of your NSTA membership.

# Partners in Science

The 2012 VAST PDI is brought to you by the hard work of many people and the generous contributions of individuals and organizations. Our sponsors contribute to the success of VAST by their presence, financial support, and the resources.

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The VAST Board of Directors would like to recognize the organizations listed below for their generous donations and contributions.



***Don Cottingham***

Please take a few moments to offer a special  
"Thank You!"  
to the representatives of each of these organizations!

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In addition to these organizations, please extend a special thanks to the people who make up the VAST Board of Directors. This group of individuals makes VAST a reality and gives many hours to develop and makes the VAST PDI happen each year.



Congratulates VAST on 60 years of advancing Science Education



## Celebrate VAST's 60<sup>th</sup> Birthday with Special Offers!

**Delta Science Readers and Delta Science Content Readers for K-8 Science**

**Buy one eight-pack or big book and get a second eight-pack or big book for 60% off!**

Leveled readers that make great resources for Guided Reading  
Literacy Skillbuilders help you integrate science and literacy  
Correlated to the Virginia Standards of Learning  
Mix and match from over 70 titles

### VAST PDI 2012/Delta Workshops

**11/8 FOSS Institutes, 1-4 p.m.**

(Registration required for institutes, \$10 fee)

*The Science Centered Classroom, Elementary*  
*Raising the Rigor, Middle School*

#### General Sessions

**Session A:** Using FOSS in the context of  
Elementary STEM Education

**Session B:** Middle School Science Notebooks

**Session D:** Science Centered Language  
Development

**Session E:** Science Notebooks: Getting Started

**Session G:** FOSS Populations and Ecosystems

**Session H:** Orbits and New Worlds – New FOSS  
Planetary Science

**Session I:** Science Notebooks: Next Step  
Strategies

**Session J:** Planning and Teaching Cross-  
Curricular Units with FOSS

### Delta Education Science Program for Virginia's Standards of Learning



*Hands-on/Inquiry-based*

*Content Reading*

*Science Notebooks*

*Technology Simulations*

*e-Guides and e-Readers*

*Comprehensive Teacher Support*

*K-6 and MS Physical Science*

*State Board Approved*

**Visit Delta Education's booth in the VAST  
PDI Exhibit Hall to learn more!**

**Holly Choquette, Sales Representative**

[holly.choquette@schoolspecialty.com](mailto:holly.choquette@schoolspecialty.com)

**Kip Bisignano, Sales Representative**

[kip.bisignano@schoolspecialty.com](mailto:kip.bisignano@schoolspecialty.com)

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

Virginia Association of Science Teachers  
2012 Professional Development Institute  
Thursday, November 8, 2012

## VAST Pre-Conference Institutes



### **Martinson Center for Mathematics & Science Pre-Conference Institute: *Share the Wonder of Science***

**Target Audience:** Early Childhood, Pre-K and Kindergarten Teachers

**Time:** 9:00 am - 3:00 pm

Scientists are born in preschool and kindergarten! During this session, we will explore what inquiry looks like in the kindergarten classroom and guess what! It does not have to be hard! You will leave with practical activities and simple experiments. We will explore how to use children's literature to inspire young scientists to not only love science, but love learning! Free materials will be provided. Institute costs \$10 and includes lunch!

**Note:** *Optional Graduate Credit through Regent University is available for an extra fee (\$200 per credit hour)*

### **Martinson Center for Mathematics & Science Pre-Conference Institute: *Learn How Science and Literature are a Great Team Through Authors that Love Science!***

**Target Audience:** Teachers of Grades 1 - 5

**Time:** 9:00 am - noon

Make learning science fun and interesting with fantastic books by fantastic authors. Participants will explore the works of several authors known for their ability to make scientific concepts both interesting and easy to understand. Come and learn how to use reading and writing activities to teach basic concepts in life science, earth science, and physical science. Participants will also learn various reading strategies and other ways to integrate science and reading. Materials will be provided. Institute costs \$10 and includes lunch!

**Note:** *Optional Graduate Credit through Regent University is available for an extra fee (\$200 per credit hour)*

Pre-Conference Institutes are open to registered VAST PDI attendees.

To register for the VAST PDI and the Martinson Center Workshops, please visit [www.vast.org](http://www.vast.org) today

\*Note: Lunch is at noon; Only one lunch per participant!

## VAST Pre-Conference Institutes

Noon - Lunch



### FOSS/Delta Education/CPO Science Pre-Conference Institutes

Williamsburg, Virginia – Thursday, November 8, 2012

#### FOSS Elementary Institute: *The Science-Centered Classroom*



**Target Audience:** Teachers of Grades 1 - 5

**Time:** 1:00 pm – 4:00 pm

With so much to cover and so little time during the school day, making connections across the curriculum is no longer an option, but a necessity. In this institute, learn strategies and scaffolds for each of the domains of reading to authentically support hands-on investigations and content learning. Identify SOL Math concepts that students can learn and practice in tandem with understanding science concepts and experience STEM and Environmental activities, too. Materials provided for all participants. Cost \$10 and includes lunch!

#### FOSS Middle School Institute: *Raising Rigor through Inquiry and Literacy*



**Target Audience:** Teachers of Grades 6 - 8

**Time:** 1:00 pm – 4:00 pm

Preparing the next generation of citizens and scientists to meet the needs of the 21st Century, requires students to go beyond memorization of science facts and to view science as a way of thinking and solving problems. The FOSS Middle School Program features inquiry-based investigations and opportunities for asking questions and solving problems using the scientific processes. In this institute, participants engage in hands-on investigations as well as learn easy to use strategies and scaffolds for incorporating literacy into the science classroom. Materials provided for all participants. Cost \$10 and includes lunch!

#### CPO High School Institute: *STEM Principals and the Engineering Cycle Using the CPO Science STEM Wind Turbine Kit*



**Target Audience:** Teachers of Grades 6 - 12

**Time:** 1:00 pm – 4:00 pm

Explore how electricity and magnetism are related through hands-on experiences. Apply your knowledge by engineering a wind turbine using the new CPO Science STEM Turbine Kit. Build, test, and revise your model by changing variables using interchangeable parts so that it generates as much power as possible. You'll even design, construct, incorporate, and test your own parts for the turbine to maximize power output. Take away STEM activities and an understanding of how to apply the Engineering Cycle in science classes.

Pre-Conference Institutes are open to registered VAST PDI attendees.

Cost \$10 and includes lunch!

To register for the VAST PDI and the FOSS and CPO Institutes, please visit [www.vast.org](http://www.vast.org) today

#### 6:30 p.m. Visit the Delta Education booth in the VAST Exhibit Hall

- Featuring NEW FOSS, Third edition and FOSSWEB Interactive Whiteboard Demonstrations
- Engaging hands-on science activities and STEM Resources
- Content area reading aligned to the Virginia Science Standards of Learning

Virginia Association of Science Teachers  
2012 Professional Development Institute

**PDI Field Trips**  
Thursday November 8, 2012

Register today for field trips which will be held at the Williamsburg VAST PDI this fall. These trips are on Thursday to make it possible for you to attend and not miss out on any of the General Sessions speakers or the Concurrent Sessions held on Friday and Saturday. These field trips are designed to provide resources and enrichment for you and, through you, your students. Plan ahead and register online early since places are limited.



Virginia Living Museum



Mineral Class Participant



Four Specimens of Amazonite

VLM Photos

**Virginia Living Museum Rocks and Minerals of Virginia Workshop Plus Tour**

Time: 9:30 – 1:00 (depart 8:45 – return 1:45)

Maximum Number of Participants: 30; \$35.00

Explore Virginia's underground world of rocks and minerals while learning effective ways to make mineralogy concepts fun and memorable for your students. Using real rock, gem and mineral specimens from the museum's collections, teachers in this inquiry-based and highly interactive workshop will learn and practice student-friendly methods of performing mineral identification lab tests, and learn effective techniques for teaching and reinforcing rock cycle concepts. We'll also demonstrate some surprising ways that minerals are used to manufacture everyday materials. In addition to plenty of classroom activities, teachers will take away a collection of rock and mineral samples to use in their own classrooms.

Note: lunch is not provided; a cafeteria is available in the museum



Jamestown Photo

**Jamestown and the Tidewater in 17th Century Virginia**

Time: 9:30 -12:00 (depart 9:10 – return 12:20)

Maximum Number of Participants: 20; \$35.00

Learn how the environment of 17th century Virginia impacted the experience of the Jamestown settlers, Powhatan Indians and Africans. In a two-hour walking tour you will scrape a deer hide to learn about brain-tanning methods used by the Powhatan Indians, make cordage from plant fibers, try out 17th century navigational tools on the ships, and discover the role played by drought, dysentery and matchlock muskets in the early settlement of Virginia. Dress appropriately for the weather – we will be walking outdoors for most of the tour. Bring your camera to capture photos along the way!

Note: lunch is not provided

## 2012 VAST PDI Field Trips – Thursday, November 8, 2012



CBF photo

### Boat Investigation with the Chesapeake Bay Foundation

Time: 10:00-4:00 (depart 9:15 – return 4:45)

Maximum Number of Participants: 25; \$35.00

The Chesapeake Bay Foundation's (CBF) Hampton Roads Education Program leads participants to exciting new perspectives on Hampton Roads tributaries and their connections to the Bay. CBF's environmental education programs bring life to Chesapeake Bay watershed curricula and field investigations focus on methods incorporating environmental education into the core subject areas of science, reading, math, and social studies. This trip investigates the ecology, natural history, and modern challenges of the region. While aboard the 50' USCG inspected vessel Bea Hayman Clark on the James River, participants examine the relationship between human activities, land use, and water quality. Hands-on activities like trawling and water quality collection and analysis encourage sensitivity and knowledge of local ecosystems, giving relevance and greater understanding to classroom curricula. Our program staff provides opportunities for careful observations and synthesis of information gathered during the field study experience. Participants are encouraged to explore the complexity of the watershed, and to see themselves as part of the solution. Participants will also learn of the many educational offerings CBF staff can provide throughout Virginia.

Note: participants will need to provide their own lunch.



The battle between the Monitor and the Merrimack



John V. Quarstein is an award-winning historian, preservationist, and author. John has served as the director of the Virginia War Museum since 1978.

### Hampton's History with John Quarstein

Time: 1:00 – 4:00 (depart 12:30 – return 4:30)

Maximum Number of Participants: 25; \$35.00

Explore Fort Monroe, Monitor-Merrimack Overlook, Lee's Mill and Lee Hall Mansion. These sites will give participants a nice overview of the 1862 Peninsula Campaign. This campaign features tremendous planning, introduction of new technologies, leadership, and decisive battles. The Union could have ended the Civil War, instead, due a failure in leadership, the war would continue on for three more bloody years and change the nation forever.

# 1952 - 2012

Join all of our exhibitors in the exhibit hall for a

## Celebration of Science

**Friday, November 9**  
**4:00–6:00 PM**

**Celebrate VAST's 60<sup>th</sup> Anniversary**  
**with special activities and door**  
**prizes in the exhibit hall.**

School Specialty Science congratulates VAST on  
60 Years of promoting Science Education in Virginia



**800.663.2182 • [www.SchoolSpecialtyScience.com](http://www.SchoolSpecialtyScience.com)**



# 1952 - 2012

## ***Thrill Ride Design Competition Celebrating 60 years of VAST Friday, 4-6pm Exhibit Hall***

*Everyone loves a thrill ride. From the steep hills, sharp curves, dark tunnels and exhilarating speeds, passengers flock to amusement parks across the country to conquer fears and experience thrills. Scientists and engineers who design and build thrill rides put their knowledge and skills to the test to take us higher, faster, and to new levels of fear.*

*Now you can compete with teams of science educators from around Virginia by designing and building a Thrill Ride during the **VAST Celebration of Science, November 9th**. Each team will be provided with materials, guidelines and space in the exhibit hall to construct their thrill ride during the Celebration of Science.*



### ***Delta Education, Sponsor***

- ✓ *Register today with your team of four colleagues by e-malling*
- ✓ *Kip Bisignano at  
**[kip.bisignano@schoolspecialty.com](mailto:kip.bisignano@schoolspecialty.com)***
- ✓ *Only four teams will be accepted to enter the competition.*

*Guest judges will award the winning Thrill Ride team with a **\$250 Delta Education Gift Coupon**.*

Night Coaster WNB

# Special Friday Night Event 2012 PDI

November 9, 2011

8:00 pm - 10:00 pm • Auction

## AUCTION DJ - Celobrate - Fun

### SCIENCE AUCTION

How about an Auction? There is seldom a better floor show for a group of science teachers than to see them bidding against each other for that one thing they could really use. The best part is that to participate, it will cost you exactly nothing. That's right – NOTHING! Besides, real money isn't good at the auction!

Do you have a box of glassware sitting in the back of your stockroom, that has only a future of collecting dust? Maybe you have old telescope that you would love to use, if only you could find a replacement part? Wouldn't it be great to be able to trade these and other surplus bits with your fellow teachers of science, and have a good time doing it?

### VAST BUCKS

Everybody that registers for the PDI will find in their packet a bundle of money! Now mind you, it is not real money! They are *VAST Bucks*, good only at the auction to be held Friday night, November 9th, during the breaks in the evening mixer. When else have you had the chance to burn through hundreds and thousands of other people's money?

### HOW TO EARN MORE VAST BUCKS

All that you have to do to "earn" VAST Bucks is to:

- (a) Register for the conference,
- (b) Visit the exhibitors during the open hours of the Exhibit Hall up through Friday evening. You may need remind them to give you some VAST Bucks!!
- (c) Take advantage of various activities noted in the program, or
- (d) Donate some items for the auction.

Everytime you do any one of these things you will earn more VAST Bucks to spend!

### A FEW RULES TO FOLLOW

- First, and foremost is safety – if the item is not safe to use, then consider disposing of this item another way. Please don't donate such items. On the other hand, if an item is broken and could be repaired or is useful for parts, tag it as such.
- Second, don't bring chemicals to the auction. There are just too many safety and storage issues, and besides, passing off a problem to someone else just isn't nice!
- Third, you need to make sure that if you are "buying" something, you intend to use it in the teaching of science and not selling it at your next yard sale.
- And Fourth, is permission, make sure that any item you donate is yours to donate OR that you have permission to donate the item for our auction. Finally, you need to make sure that anything you buy you can carry away. We don't deliver and we don't store, so if you bought it, you're taking it that evening!

## TURN YOUR PASSION INTO AN ENRICHING TEACHING CAREER

Chonita Walker chose to earn her elementary teaching license at Regent University because of its reputation for delivering leading-edge, values-based teaching methods. Then she sought a Reading Specialist endorsement and found that Regent delivered flawlessly. Now Chonita offers academic solutions for the many children who struggle with reading in her district. Discover how Regent, recognized for its top online programs by *U.S. News & World Report*,\* can help you fulfill your passion.

Call 888.713.1595  
regent.edu/vast

M.Ed. in Elementary Education (PreK-6)  
M.Ed. Reading Specialist



*Christian Leadership to  
Change the World*



Chonita Walker '10  
Reading Specialist

\*Source: www.usnews.com/education/online-education.

## BALLOT



The Nominating Committee presents the following slate of officers for election at the VAST Annual Meeting, Saturday, November 10, 2012 at the Williamsburg Hotel. Elected officers will begin their terms January 1, 2013.

### *Nominating Committee Chair for 2012: Delores Dalton Dunn*

**For President Elect (2013)** *This officer will become President in 2014.*

**Shirley Sybolt** ..... Yes No  
Science Instructional Leader and 5th Grade Teacher at Cooper Elementary School, Hampton City Schools. National Board Certified Teacher. She currently serves as chair for the VAST Elementary Science Committee.  
3 year term—President elect, president, immediate past president

**For Vice President (2013-2015)**

**Julian Barnes** ..... Yes No  
Science Coordinator Roanoke County Schools  
He currently serves as vice-president.

**For Director, Region II (2013-2015)**

**Melissa Brichacek** ..... Yes No  
Teacher in Chesapeake City Schools  
She currently serves as Director, Region II.

**For Director, Region IV (2013-2015)**

**Susan Bardenhagen** ..... Yes No  
Elementary science teacher in Fairfax County  
She currently serves as Director, Region IV.

**For Director, Region VI (2013-2015)**

**Sonja Wolen** ..... Yes No  
Assistant Director at Danville Science Center, SMV  
She currently serves as Director, Region VI.

**For Director, Region VIII (2013-2015)**

**VACANT**

Any interested educator should contact nominating committee chair at 804-240-2162

If you will not be present at the Annual Meeting, please cast an absentee ballot.  
Deadline for receipt of ballots is November 2, 2012. Return your completed ballot to:  
Delores Dalton Dunn, 9078 Cadys Wood Dr., Hanover, VA 23069

# 2012 Virginia Naturally Schools



The schools listed below have been recognized for their efforts in supporting environmental conservation and stewardship. The years the schools have been recognized for continued effort is noted beside the name. Schools must submit a plan for the following year and carry it through in addition to meeting additional criteria in order to be recognized in additional years.

1. Atlee High School – Hanover County Schools – 6 years
2. Bayside Elementary School – Virginia Beach City Schools – 4 years
3. Bettie W Weaver Elementary School – Chesterfield County Schools – 5 years
4. Byrd Elementary School – Goochland County Schools – 2 years
5. Castlewood High School – Russell County Schools – 2 years
6. Central High School – Shenandoah County Schools – 5 years
7. Centreville Elementary School – Fairfax County Schools – 1 year
8. Chesapeake Bay Governor's School – Essex County – 6 years
9. Clover Hill High School – Chesterfield County Schools – 5 years
10. Coles Elementary School – Prince William County Schools – 1 year
11. Colonial Trail Elementary School – Henrico County Schools – 5 years
12. Daniels Run Elementary School – Fairfax County Schools – 6 years
13. Dominion High School – Loudoun County Schools – 8 years
14. Emerick Elementary School - Loudoun Co Schools – 3 year
15. Eureka Elementary School – Charlotte County Schools – 5 years
16. Fishburn Park Elementary School – Roanoke City Schools – 1 year
17. Geshner Jewish Day School – Independent School, Fairfax – 3 years
18. Glenvar High School – Roanoke County Schools – 6 years
19. Glenvar Middle School – Roanoke County Schools – 7 years
20. Glenwood Elementary School – VA Beach City Schools – 1 year
21. Greenbrier Intermediate School – Chesapeake City Schools – 8 years
22. James River High School – Chesterfield County Schools – 4 years
23. John Wayland Elementary School - Rockingham County Schools – 13 years
24. J Michael Lunsford Middle School – Loudoun County Schools – 1 year
25. Kemps Landing Magnet School – VA Beach City Schools – 4 years
26. Kersey Creek Elementary School – Hanover County Schools – 6 years
27. K Culbert Elementary School – Loudoun County Schools – 1 year
28. Lanier Middle School – Fairfax County Schools – 1 year
29. Lee Davis High School – Hanover County Schools – 4 years
30. Lyles-Crouch Traditional Academy – Alexandria City Schools – 2 year
31. Mount Daniel Elementary School - Falls Church City Schools – 3 years
32. North Branch School - Independent School, Afton - 13 yrs
33. Park View High School - Loudoun County Schools – 2 year
34. Patrick Copeland Elementary School – Hopewell City Schools – 6 years
35. Pearson's Corner Elementary School – Hanover County Schools – 10 years
36. Peasley Middle School – Gloucester County Schools – 13 years
37. Plaza Middle School – VA Beach City Schools – 1 year
38. Potowmack Elementary School – Loudoun County Schools – 1 year
39. Rivers Edge Elementary School – Henrico County Schools – 5 years
40. Robious Elementary School – Chesterfield County Schools – 3 years
41. Short Pump Elementary School – Henrico County Schools – 2 years
42. Stafford Elementary School – Stafford County Schools – 6 years
43. Sterling Elementary School – Loudoun County Schools – 1 year
44. Stonewall Jackson Middle School - Hanover County Schools 5 years
45. Sutherland Elementary School – Dinwiddie County Schools 2 years
46. The Gereau Center for Applied Technology & Career Exploration– Franklin Co. Schools – 1 year
47. The Howard Gardner School – Independent School, Fairfax – 4 years
48. Thomas Hunter Middle School – Mathews County Schools – 1 year
49. Twin Hickory Elementary School – Henrico County Schools – 2 years
50. Waterford Elementary School – Loudoun County Schools – 2 years
51. Yorktown Elementary School – York County Schools – 1 yr

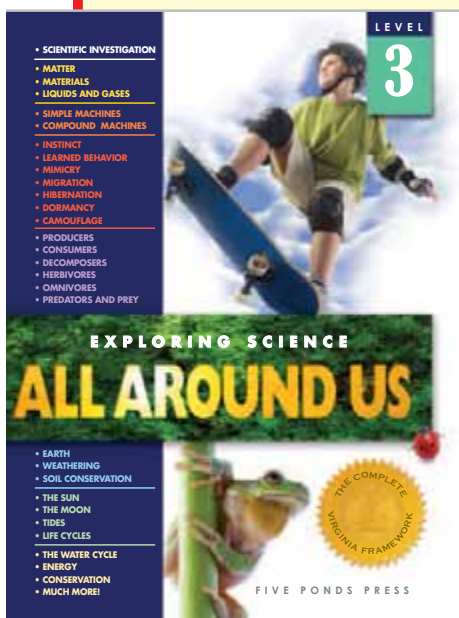
For more information about Virginia Naturally School Recognition Program contact:

Suzie Gilley, Virginia Naturally Schools Chairperson  
 VA Dept. Of Game and Inland Fisheries, P O Box 11104 Richmond, VA 23230-1104,  
 804-367-0188, <http://www.dgif.virginia.gov/education/school-recognition>  
[Suzie.gilley@dgif.virginia.gov](mailto:Suzie.gilley@dgif.virginia.gov)

**“Please create a Science series that presents the Virginia Framework like the **OUR WORLD** series does for Social Studies.”**

That was the request we heard from around the state as we hosted teacher training sessions for the many districts that adopted the **OUR WORLD** series of books for History and Social Science.

We listened! **EXPLORING SCIENCE ALL AROUND US** student books for Grades 3, 4, and 5 are shipping now!



Five Ponds Science books have been extensively checked and thoroughly researched and reviewed by a team led by Jill Sible, Ph.D. and Giti Khodaparast, Ph.D., both of whom are esteemed faculty members at Virginia Tech in Blacksburg. With bright colorful photos and engaging text that exactly follow the new Virginia Framework—all supported with an extensive online teacher program—**EXPLORING SCIENCE ALL AROUND US** is the right choice for your students.

- Stop by our booth at the VAST Conference to pick up a free sample.
- Preview online today at [www.fivepondspressbooks.com](http://www.fivepondspressbooks.com)
- Contact Laura Buckius at 877 833 0603 x103 or email [Laura@FivePondsPress.com](mailto:Laura@FivePondsPress.com) for for special introductory prices good through December 31, 2012

**FREE SAMPLES!**

## Teacher Resources:



### **Integrating Perspectives on the Chesapeake Bay through Civic Engagement: An Institute for Teachers**

*A Virginia Geographic Alliance Program in partnership with the National Geographic Society and a grant from the National Oceanic & Atmospheric Administration, U.S. Department of Commerce*

**DATES:** October 26-28, 2012 (Institute check-in is from 9:30-11:30 AM on the 26<sup>th</sup> and concludes at 1:00 PM on the 28<sup>th</sup>.)

**LOCATION:** Historic Stratford Hall, 483 Great House Road, Stratford, VA 22558 in Westmoreland County on the Northern Neck peninsula of the Potomac River. (**Latitude** W76. 50'23", **Longitude** N38°. 09' 07")

**INSTITUTE GOAL:** Through civic engagement Virginia schools will integrate perspectives from natural sciences, social studies, and writing to understand and protect one of Virginia's most vital natural resources—the Chesapeake Bay.

**INSTITUTE OUTCOMES:** Participants will:

- Develop collaborative relationships among STEM disciplines, social studies, and literacy to promote relevant and authentic learning experiences
- Use *civic questions* to engage students in SOL learning objectives \*
- Use the National Geographic Society's Chesapeake Fieldscope, an online GIS tool, for learning about the Chesapeake Bay and its watershed
- Employ maps to generate questions and hypotheses related to pollution sources affecting the Chesapeake Bay
- Employ place-based learning environments for deeper learning, empower a sense of responsibility and ownership, and provide community-based service learning opportunities.

**RECERTIFICATION POINTS FOR TEACHER RELICENSURE:** Participants completing the institute will earn 20 professional development hours.

**TARGET AUDIENCE / SOL CONNECTIONS:** Target audience teachers of science, social studies or literacy in grades 4-8, but all grade levels are welcome to apply!

**STANDARDS OF LEARNING** to be emphasized at the institute:

- Social Studies: VS.1b, d, h-i; VS.2a-c, USI.1 e-g, USI.2a-d, C/E 1.a-h
- Science: 6.1; 6.5; 6.7; LS.1; LS.4; LS.5; LS.6; LS.8; LS.9
- Literacy: 4.1b; 4.2a; 4.4; 4.7; 5.4; 5.6; 6.3; 6.5; 6.7; 7.3 7.6; 7.9; 8.5; 8.6; 8.9

**PARTICIPANT COSTS:** The Virginia Geographic Alliance covers costs for lodging, materials, meals and travel reimbursed at 55 cents a mile. Expenses related to paying a substitute teacher reimbursed at \$75 a day.

**STIPEND:** A \$100 stipend will be paid for those completing the institute. Participants completing a lesson plan based on institute content will earn an additional \$170 stipend (provided it is approved through a peer review process).

**APPLICATION PROCEDURE:** Interdisciplinary teams from a school that includes at least two teachers from different disciplines (sciences, social studies, and literacy) are given first priority. Content Coordinators / Instructional Coaches are also encouraged to join teachers as part of the team. Please complete registration online at: <http://tinyurl.com/VGABAY>

**SEND ALL INQUIRIES TO:** Edward Kinman, Department of Biological and Environmental Sciences, Longwood University, Farmville, VA 23909. Phone: 434-395-2569 Email: [kinmanel@longwood.edu](mailto:kinmanel@longwood.edu)

"Civic engagement means working to make a difference in the civic life of our communities and developing the combination of knowledge, skills, values and motivation to make that difference. It means promoting the quality of life in a community, through both political and non-political processes."

*Preface, page vi in Civic Responsibility and Higher Education, edited by Thomas Ehrlich, published by Oryx Press, 2000*

## Teacher Resources and Opportunities:

### Chandra: Loaning UVA's Telescopes to Educators

The **University of Virginia Department of Astronomy** is loaning telescopes to teachers in Virginia and providing training on how to use them. For a small fee of \$50.00, teachers can borrow one of the Meade 8-inch Schmidt-Cassegrain telescopes for seven weeks and use it to host an evening star party at their school, to conduct experiments with their students, and other projects. Initial funding for this project was provided by an education and public outreach supplemental grant from the Chandra

X-ray Center which is operated for NASA by the Smithsonian Astrophysical Observatory. Partial funding for the project for 2012 and 2013 is being provided by Friends of the McCormick Observatory.

Orientation Dates at the McCormick Observatory in Charlottesville for 2012 -13: November 17, January 19, and March 30  
The project is managed by Steve Layman. For more information please email at [slayman2528@comcast.net](mailto:slayman2528@comcast.net)

### Physics Video Contest Sponsored by James Madison University

The **Department of Physics and Astronomy at James Madison University** is excited to host a video contest for high school students. We are offering cash prizes that will be awarded to the winning teams and their schools. To enter, a team must create an original video which demonstrates and explains something related to physics. This video is submitted to us for judging. The top 5 teams will be invited to JMU for an awards presentation. All finalists will receive a monetary award. The top prize is \$500 for the student(s) and \$300 for the host class to use on physics educational materials.

This contest is open to all high school students. You are free to work individually or in teams. If more than five people contribute to a project, only 5 will be eligible to receive prize money and attend the awards ceremony. In order for an entry to be accepted, all standard lab safety practice must be employed. Furthermore, videos must be free of objectionable content.

To submit an entry, a video no more than 3 minutes in length must be posted to [www.mediafire.com](http://www.mediafire.com), a free, media-storage website. In addition, an entry form also needs to be filled out and posted. Additional details can be found at <http://csma31.csm.jmu.edu/physics/Public/videocontest.html>.

The deadline for submissions is 9:00 a.m. EDT March 29, 2013. Videos will be

### UVA Electricity and Magnetism Summer Program and Course July 8 - July 19, 2013

*Funded by the Virginia Department of Education Math and Science Partnership Grant*

**Calling all middle and high school physical science teachers!! Check out this great opportunity – it's just for YOU!**

Participants will:

- Attend a ten-day summer workshop held at the **US Department of Energy's Jefferson Lab** in Newport News, Virginia;
- Complete 15 hands-on electricity/magnetism experiments consistent with the Virginia Standards of Learning;
- Participate in 30 hours of pedagogy and enrichment activities with UVA professors and Jefferson Lab staff;
- Earn 3 credit hours from the University of Virginia; and
- Receive a stipend of \$1500, free housing, electricity/magnetism kits with a mini VDG, electroscopes, textbooks, textbooks, HD video camcorder, and free registration for the 2013 VAST PDI!

For more information, please visit: <http://people.virginia.edu/~ral5q/classes/UVA-JLab/summer13/>

judged based on creativity, educational value, and the "wow" factor. If you have questions, please consult the contest webpage or feel free to ask Dr. Mark Mattson ([mattsome@jmu.edu](mailto:mattsome@jmu.edu)).

### FY13 B-WET Federal Funding Opportunity released

We are happy to announce that the **FY 2013 B-WET** (Bay Watershed Education and Training) grant announcement has just been published. The program funds K-12 programs that provide students with meaningful watershed educational experiences (MWEE) related to the Chesapeake Bay and related teacher professional development and capacity building.

Proposals for FY13 funding must:

- Be a systemic MWEE program that strives to reach the entire student and teacher population in one or more grades in an entire school system or recognized sub-unit of a school system;
- Build the capacity of agencies and organizations to develop, deliver, and sustain comprehensive STEM or environmental education programs that advance the MWEE at the state or regional level; or
- Pilot the replication of highly successful urban STEM programs to urban communities in the Chesapeake Bay watershed.

NOAA anticipates that typical awards for Systemic MWEE Implementation will range from \$75,000 to \$200,000 annually. Projects focusing on Capacity building will range from \$25,000 to \$75,000 annually. Projects that address Urban STEM Model Replication will range up to \$200,000 annually.

If you're interested, be sure to read the full Announcement of Federal Funding Opportunity for details and requirements. Also note that letters of intent must be submitted by 5 p.m. Eastern Time, October 30, 2012, and that the deadline for applications is 5 p.m. Eastern Time, December 19, 2012.

(A web version of this information is available at: <http://chesapeakebay.noaa.gov/education-hot-topics/b-wet-funding-opportunity-available>)

## Catch Up with VISTA at VAST 2012

Please plan to visit with VISTA during the VAST Professional Development Institute, coming up November 8-10 in Williamsburg, VA. Staff, instructors, and researchers will be available at the VISTA booth and also featured during several sessions, including:

- o Using Scientific Data to Model Collaboration Between Schools. VISTA-trained teachers will provide middle and high school teachers with a practical application of data collection and analysis using watershed data collected collaboratively between two middle schools in different regions of Virginia.
- o Get Paid to Improve Your Students' Learning with VISTA. VISTA will share opportunities available through our Elementary Science Institute and Secondary Teacher Program.



### o VISTA Elementary Share-A-Thon.

Teachers attending the VISTA Elementary Science Institute will share problem-based learning units they developed during their 2012 summer institute, as well as instructional units their school teams created to engage the students in their classrooms. Pick up ideas to conduct your own PBL units.

- o VISTA Secondary Teachers Share PBLs. Teachers participating in the Secondary Teacher Program of VISTA will share their problem-based units. Find out how their units are progressing, how their students are reacting, and hints for your own PBL units.

## VISTA Science Education Faculty Participants to Share Insights at VAST 2012

Participants in VISTA's Science Education Faculty will also be actively participating at VAST. Check in on them at these sessions:

- Addressing and Understanding the "E" in STEM will focus on the salient aspects of engineering and how it is embedded in STEM Education. The presentation will focus on the understanding of engineering through lesson design, teaching, and assessments that measure true outcomes. (*Kianga Thomas and Claire Berube of Hampton University*)
- Emerging Engineers. See a hands-on demonstration of engineering challenges completed by rising fourth graders during a two-week summer camp for at-risk students. (*Patti Horne of Averett University and her students*)
- Infusing PBL into Science Methods Courses. This multi-institutional research project examined the impact of infusing problem-based learning (PBL) into science methods. Professors will share lessons learned and suggestions for the most effective use of PBL. (*Kianga Thomas, Hampton University; Patti Horne, Averett University; Suzanne Donnelly, Longwood University; Leslie Whiteman, Virginia State University*)
- **Problem-Based Learning Across the PreK-5 Curricula.** Do you want to use your students' natural curiosity and energy to teach everything? Get ready for an interactive, problem-based learning workshop that integrates science, math, engineering, language arts, and social studies into one unit. (*Leslie Whiteman and Trina Spencer, Virginia State University; Pamela Aerni, Longwood University*)
- **Engineering Design Briefs: Jack & Jill Be Nimble.** Teachers will experience how to develop engineering design briefs that integrate literacy. You will walk away with ideas on how to create design briefs using well-known nursery rhymes and fables in this hands-on session. (*Peggy Schimmoeller, Randolph College; Pam Aerni, Longwood University; Arthur Bowman, Norfolk State*)
- **Secondary Problem-based Learning Share Session.** Looking for a new way to spice up that old science unit? Come and explore the benefits of incorporating problem-based learning into your secondary science classroom at our poster share session. (*Suzanne Donnelly, Longwood University*)

## Science Teacher Tips Now Available from VISTA

VISTA's Facebook page ([facebook.com/vistascience](http://facebook.com/vistascience)) is now offering daily tips from VISTA science teachers—ideas that they've found useful in their classrooms—at the elementary, middle, and high school levels.

Here are a few of the tips we've received so far:

Studying plate tectonics? Angela Seiders (5th grade, Harrison Road Elementary) offers: "Today we simulated the plate boundaries found on the Earth's crust. We represented the crust using broken pieces of graham crackers. Even though using actual magma would be more 'hands on,' as fifth graders (having science right before lunch), icing seemed like the next best thing! Dying it red made it more authentic. The students were asked to demonstrate, draw, and analyze what occurs at each boundary. They acted out earthquakes, built mountains and volcanoes, made new crust, and experienced how



Graham crackers and icing allow students to explore plate tectonics.

subduction zones occur. It was both informative and appetizing!" An activity like this is great to do when using real science materials is not possible for safety reasons.

For chemistry teachers: "This is a good site to use with an intro chem class: <http://chemthink.com>. It has some good animations that can be manipulated (Behavior of gases is probably my favorite.) This site is nice because it allows teachers to create an account and monitor the progress of students as they work through the tutorials and quizzes to check in and see if they have learned the material. Good way to introduce a new topic." Teachers should click the "signup" link to register for their free account. (Courtesy of Andrew Evangelos, former high school chemistry teacher and current Mason grad student).

Do you have a teacher tip you'd like to share? Email your ideas to [vista@gmu.edu](mailto:vista@gmu.edu). We'll post them on Facebook and credit you with the idea!

## Teacher Resources:

### Virginia Aerospace Science and Technology Scholars Opportunity for High School Juniors

The Virginia Aerospace Science and Technology Scholars (VASTS) is a NASA-based program for students who are interested in science, technology, engineering and math (STEM) areas.

VASTS is an interactive online learning course for high school juniors, culminating in a one-week residential Summer Academy at NASA Langley Research Center in Hampton for those who qualify. Offered at no cost to the student, VASTS consists of eight modules to be completed from December 2012 through April 2013 facilitated by master educators. Based on success in the online coursework, students may be selected to attend a Summer Academy where they interact with NASA scientists, engineers and technologists to design a human mission to Mars. Students who successfully participate in VASTS earn 2 college credits for the online course and 2 additional credits for the Summer Academy.

Please direct students or other faculty to the website for program information and application, <http://vast.spacegrant.org>. **The deadline for the application is November 2, 2012.**

If you are interested in becoming a Master Teacher for the online course, please visit: <http://vast.spacegrant.org/educators> for more information. The application deadline is November 2, 2012. If you have additional questions about being a Master Teacher, please contact **amber.agee-dehart@nasa.gov**.

The program is a partnership between the Virginia Space Grant Consortium, NASA Langley Research Center, the Commonwealth of Virginia with the assistance from the Virginia Department of Education and industry partners.

**Join us on Facebook by searching VASTS, follow us on Twitter, and view videos on our Youtube channel - VASTStube.**

## Opportunities for Virginia Biology Students and Teachers

### BioClub

The National Association of Biology Teachers (NABT) BioClub provides opportunities for students to share and promote interest in the biological sciences. Activities include preparing and presenting experiments and technical information before groups and sharing information about career, technical training, and college opportunities. Carolina Biological is a sponsor and is looking for NABT BioClub chapters to field test new products. If you are interested in this opportunity, contact David Heller at [david.heller@carolina.com](mailto:david.heller@carolina.com)

Students will meet role models in the professional biology community, and participate in national NABT special programs. A faculty member who is an NABT or Virginia Association of Biology Teachers (VABT) member is the BioClub Advisor.

To learn more about what the NABT BioClubs are doing, visit the BioClub Blog at <http://bioclub-bioclub.blogspot.com/> or Facebook.

### USA Biology Olympiad (USABO)

Students can start a USABO Club within their schools or make the USABO part of your present science club to prepare for the USABO Open Exam February 5 to 15, 2013. Students who score in the top 10% of the Open Exam, go onto the Semifinal. The top 20 students in the Semifinal attend a 10-day training session at Purdue University. Four students from Virginia were among the 20 students who were National Finalists in 2012. The top four students at Nationals went to Singapore for the International Biology Olympiad (IBO) where they claimed four gold medals for the USA. Be part of this amazing competition. Identify a teacher or administrator and register your school. Registration opens October 29. The IBO will be held in Bern, Switzerland in 2013. For more information, please contact Kathy Frame ([kframe@cee.org](mailto:kframe@cee.org)).

### BioClub Student Award

Registered BioClubs are recognized by sponsor Carolina Biological Supply Company.

### Virginia Outstanding Biology Teacher Award

Sponsored by BIOZONE and Leica Microsystems

Any Virginia life science teacher middle school through high school may apply for the 2013 OBTA for the state of Virginia. Contact Kathy Frame ([chuckframe@aol.com](mailto:chuckframe@aol.com)) for an application packet.

Carol Stapanowich, 2012 OBTA winner from Virginia with Polly the Plant Cell and Annie the Animal Cell at the 2012 VABT Conference in Portsmouth, VA. Carol is a teacher at Bishop Sullivan High School in Virginia Beach. The cells are senior students Beverly Harper and Raven Dillard from Woodrow Wilson High School in Portsmouth, VA. Carol will also be recognized for her accomplishments at the VAST PDI in November in Williamsburg and at the National Association of Biology Teachers National Conference in Dallas, TX.

### Other Awards for Virginia Life Science Educators

- Biology Educator Leadership Scholarship (BELS)
- Ecology/Environmental Science Teaching Award
- Evolution Education Award
- Four-Year College & University Biology Teaching Award
- Four-Year College & University Biology Research in Teaching Award
- Graduate Student Poster Award
- Graduate Student Travel
- Kim Foglia AP Biology Service Award
- Kim Foglia AP Biology Travel Fellows
- Neil Campbell Fellows
- Outstanding New Biology Teacher Achievement Award
- The Ron Mardigian Biotechnology Teaching Award
- Two-Year College Biology Teaching Awards

For full descriptions of the following awards, please visit <http://www.nabt.org/websites/institution/index.php?p=132#award8>.

# Teacher *Direct*



## A New Web Page Just for Virginia Teachers

Teacher**Direct** is a new addition to the Virginia Department of Education's Web site that includes links to resources for all SOL subject areas.

### New Communications Tool Keeps Teachers Informed

TeacherDirect, a new Web page from the Virginia Department of Education, provides a more direct line of communication with classroom teachers. TeacherDirect includes information about new instructional resources created by VDOE staff as well professional development and grant opportunities, and other information of special interest to teachers and their students. The site is updated each Wednesday. Within a few weeks, teachers will be able to subscribe to weekly e-mail updates. Bookmark the site today!

### SOL News



contains weekly updated items of interest to teachers, such as new instructional resources, upcoming professional development activities, grant and scholarship opportunities, and student contests.

### SOL Events



contains a searchable professional development calendar of conferences, webinars, and institutes.

### SOL Library



contains catalogs of all DOE resources available to teachers of English, mathematics, science, and history and social science; and videos and narrated PowerPoint presentations on how the Standards of Learning are created and assessed, as well as DOE resources available to support them.

**Bookmark it now!**

[www.doe.virginia.gov/testing/teacher\\_direct/](http://www.doe.virginia.gov/testing/teacher_direct/)



**COMING SOON . . . Sign up for weekly e-mail updates**





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