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The Science Educator

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Exemplary Virginia Educators Recognized at the VAST Professional Development Institute 2013



Four teachers were recognized during the November VAST Awards dinner as the Virginia state finalists for the 2013 Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST). Eric Rhoades, Director of the Office of Science and Health Education, and Barbara Young, the Science - Elementary Specialist presented the awards. The four PAEMST state finalists for grades 7-12 science are Susanne Dana, a chemistry teacher at Blacksburg High School in Montgomery County, Stephen Biscotte, a biology teacher at Cave Spring High School in Roanoke County, Timothy Couillard, a physics teacher at James River High School in Chesterfield County, and Anne Moore, middle school science teacher at Robius Middle School in Chesterfield County.



VAST Awards 2013

VAST recognizes exemplary contributions to science education through its annual awards program. Awards are presented to outstanding educators at all levels. In addition, school administrators and businesses are eligible to be recognized for their support of, and contributions to, quality science education.

VAST is pleased to recognize the following recipients for 2013. Please congratulate them, and thank them for their outstanding contributions to quality science education.

Outstanding Middle School Teacher: Stephanie Nelson, Thomas Harrison Middle School, Harrisonburg City

Outstanding Earth Science Teacher: Michael Pratte, Mountain View High School, Stafford County

Outstanding Chemistry Teacher: Beth Stacy - Virginia High School, Bristol, Virginia

Outstanding Physics Teacher: Jason Sterlace, St. Catherine's School

Outstanding Teacher of At Risk Students: Jill Dean, Turner Ashby High School, Rockingham County

Outstanding Science Educator: Kristi Wagner, Williamsburg-James City County

Community Partnership: Laurie C. Sorabella, Oyster Reef Keepers of Virginia



Important VAST News!

Read about PDI 2014, at the Hotel Roanoke, Roanoke, Virginia on pages 6 and 7.
Due dates for presenters have changed this year.



New Year New Ideas New You...this can all be true!!!!

We need you to help VAST get a fresh look on life. What better way for you to give of your time then to donate it to VAST. Remember only you can make the difference. You have so much to offer and we need to have your input. We all know the challenges that each of us have to face so why not work together and meet them. We are excited this year as we prepare for more exciting times with our VAST PDI in November. Top speakers will keep you in touch with Virginia Student needs as well as your own. So, get on board ...update your membership, recruit a new member, and most of all register to attend and present the VAST PDI in November!!!

Susan Booth

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Gavel Exchange

Brita Hamilton passes the gavel to Shirley Sypolt at the VAST Annual Meeting during the 2013 VAST Professional Development Institute held in Norfolk in November 2013.

Thank you for serving Brita and Welcome Shirley.

Happy New Year from the Virginia Association of Science Teachers (VAST)!



Let me introduce myself - I am Shirley Sypolt, the newly elected President of the Virginia Association of Science Teachers (VAST). I gladly accepted the President's gavel at the VAST Professional Development

Institute (PDI) held in Norfolk this past November and I eagerly look forward to an amazing year of supporting Virginia teachers as the leader of this professional science organization.

I have been an elementary teacher in Hampton City Public Schools for 23 years with all of my years teaching at Cooper Elementary Magnet School. For the first 21 years, I was a fifth grade teacher and for the past 2 years I have been a second grade teacher. Many of you may wonder "why the change to a lower age group?" but as a fifth grade teacher for over 20 years I came to recognize gaps of understanding with my 5th grade students' knowledge about how science works that went back to their K-2 science instruction, or lack of. By moving back to the 2nd grade, my goal is to help fill these gaps of understanding for our elementary students by giving them more opportunities to question and explore "how science works." I also had the pleasure of teaching the "science methods" course for 10 years as an adjunct professor at Christopher Newport University to college students and I have loved meeting many of my former college students years later at various science conferences and listening to how they now love teaching science to their own elementary students. I have always loved teaching science and I was honored to receive a 2002 Presidential Award of Excellence for Elementary Science Teaching and a 2003 National Science Teachers Association (NSTA) Distinguished Elementary Science Teaching Award. I enjoy being a state facilitator for Project WILD, Project Flying WILD, Project WET, and Project Learning Tree and I was honored to receive a state and national Project Learning Tree Outstanding Educator Award in 2001. I have been recognized several times in Who's Who Among America's Teachers and Who's Who of American Women and I am proud to be National Board Certified, for which I plan to re-certify within the next two years.

I first became involved with VAST many years ago as a new elementary teacher: first as a conference participant, then as a presenter for numerous years, then as a committee member, then as chair of the Elementary Science Committee, and most recently as President-Elect & co-PDI chair for 2013. I am very proud to now serve as your VAST President.

What is the Virginia Association of Science Teachers (VAST)? The object of VAST shall be to advance the study of science, to promote excellence in the teaching of science, and provide opportunity for communication among science educators in the Commonwealth of Virginia. The mission: *VAST is a comprehensive educational organization dedicated to the nurturing and advancement of superior science education. VAST provides leadership by: (1) promoting the study of science at all grade-levels; (2) supporting conditions which ensure an optimal environment for the teaching of science; (3) advocating high quality science instruction for all students at all levels; and (4) providing an avenue for communication among the members of the science education community.*

VAST is a statewide organization for science educators. Classroom teachers, at all levels, should be as active as possible in decision-making and the leadership of this organization. We are always looking for new voices and new points of view, so consider serving on one of our many VAST committees: Elementary, Middle, Biology, Chemistry, Earth Science, Physics, Colleges & Universities, Communications, Environmental Literacy, and Informal Learning, just to list a few. Check out our VAST web site at <http://www.vast.org> and let us know what else we can add to this site to make it easier for you to find information you need about science education in Virginia. What would you like to see us doing that we are not already doing?

My goals this coming year as the President of VAST are: (1) increased participation in VAST by science teachers across our state, (2) increased participation of our youth in science through VAST, and (3) to support high quality, hands-on, and appropriate science education throughout Virginia.

I want to hear from you! The entire state of Virginia is broken into eight VAST regions, each with a VAST Regional Director. VAST is here for you! We want to know what kind(s) of support you need from us. How can we make science teaching easier for you as a science educator at all levels? Please contact me at my school email: ssypolt@hampton.k12.va.us and let me know how we (as a state wide organization) can support you as a science educator.

Shirley Sypolt

VAST President

“Bathymetry - Mapping the Ocean Floor”

Combining a 5th grade STEM project with learning “why” oceanographers map the ocean floor.
Shirley Sybolt, currently a 2nd grade teacher & the newly elected President of VAST

It all started when Joan Harper-Neely (the Technology Specialist at my school: Cooper Elementary Magnet School) invited me to co-present with her at the **STEM CoNNECT II Summit** that was held on October 8, 2013 at the College of William & Mary. Even though I am now in my second year of teaching second grade, I was previously a fifth grade teacher for twenty-one years. I enjoyed my years as a fifth grade teacher and oceanography was always one of my favorite science units to teach. I immediately said yes and Joan and I met a few times over a two-week period to get ready for our session.



At the STEM Summit our session
“Bathymetry- Mapping the Ocean Floor”

was one of three Elementary sessions available to teachers during the morning time slot. We had excellent attendance for our session with teachers from many different school districts from across the state of Virginia. We introduced ourselves and talked about involving students and teachers at our elementary school in realistic STEM projects; we do this by team teaching and by finding inventive ways to teach science by eliminating the use of worksheets and by providing students with real life applications of science concepts.

We focused our session on 5th grade science SOL skills: 5.6sSa: create & interpret a model of the ocean floor, 5.6bSb: research and describe the variations in depth of ocean features, and 5.6bSd: interpret graphical data related to characteristics of the ocean. What an exciting school year to study oceanography and plate tectonics as a new island had just formed off the coast of Pakistan on September 24, 2013! We took a few minutes to look at this new island online: http://www.huffingtonpost.co.uk/2013/09/25/pakistan-earthquake-island_n_3987610.html.

As an introduction to what I do when teaching science in the classroom, I showed several years of my 5th grade science interactive notebooks, emphasizing the oceanography units, especially activities on bathymetry (which is the measurement of the depth of water in oceans, seas, or lakes). Participating teachers really liked the visual aids provided in these student made “textbooks” that always hold both teacher and student created materials for reviewing the science concepts that the 5th graders needed to learn about oceanography (and all other 5th grade science SOL concepts).

Of the different types of engineering (mechanical, electrical, civil, acoustical, & chemical) used on, in and around the ocean, our session focused on the acoustical aspect of using sonar to map the depths of the ocean. As part of ocean engineering technology, ocean engineers design, build, operate and maintain ships, offshore structures and ocean technologies as diverse as: aircraft carriers, submarines, sailboats, tankers, tugboats, yachts, oil rigs, underwater robots, acoustic sonar, and many others. Engineers work as part of specialized teams where a single team can include scientists, statisticians, marketing representatives, researchers, archeologists, etc. (see the Sea Grant Marine Careers online reference listed at the end of this article)

As part of the technology connection, Joan shared several online resources that elementary students can use for research: Oceans Alive created by the Museum of Science in Boston, a site managed by the Marine Conservation Institution, and a website produced by the Office of Naval Research. She also introduced sites with interactive activities online, such as Woods Hole Oceanographic Institution and Prometheus Planet. (see list of oceanography research sites at the end of this article)

Background information for this STEM challenge session involved telling participants that they were part of a marine research team working within the Chesapeake Bay area and that a company wants to deliver products to their city. This company plans to drive a container ship up the Chesapeake Bay but wants to make sure that their container ship will fit, or clear the depths of the water leading into this city’s port.

Participants began this STEM challenge by choosing a slender wooden dowel and attaching a paper to it

that contained a measurement scale. Next, each ocean engineering team of participants received a box in which they created a seascape of varying elevations (using a variety of materials to create their different oceanographic features) and attached their seascape to the bottom of their box with tape and/or glue. To complete their measuring boxes, a lid was put on top of the box and a coordinate grid was glued to the top of the box. Each group then drilled small holes through the top of the box into each of the cells on their coordinate grid. After each engineering team completed their oceanographic measuring box, participants got to use their mathematical skills by using their measuring dowel to take bathymetry readings for their seascape and to record their data on a chart. After the data was collected, the data was transferred into Excel, on computers, to create 3-D projections of the floor of the Chesapeake Bay leading into their city's port.

After each teacher team had successfully created their 3-D graph, they took the lids off of their boxes and compared their 3-D graph to the oceanographic seascapes they had created in the bottom of their boxes. Session participants were very impressed with how realistic the 3-D seascapes looked, using Excel. This interactive activity connected all the components of STEM (Science, Technology, Engineering, and Mathematics).

In a 5th grade classroom setting, this STEM challenge should take several days to complete, after the teacher has thoroughly taught the science concepts that the students would need to understand about the ocean. One or more days should be used to allow student research teams to gather information about ocean engineering technology using approved web sites and books about oceanography. Each student engineering team should also be allowed enough time to create a measuring dowel, to create and attach a seascape in the bottom of their box, to create their measuring grid on the top of their box, to measure and record their bathymetry data, and to create a 3-D graph of their seascape using Excel. Student teams should also be required to type up a report explaining the topography and depth of the water coming into their city's port and why this type of information would be important to makers of aircraft carriers, submarines, tankers, tugboats, yachts, fishing boats, sailboats, oil rigs, underwater robots, etc.

Not too long after our October session, a second new island appeared off the coast of Japan on December 26, 2013. A really good site to let students explore is New Islands-Wikipedia:

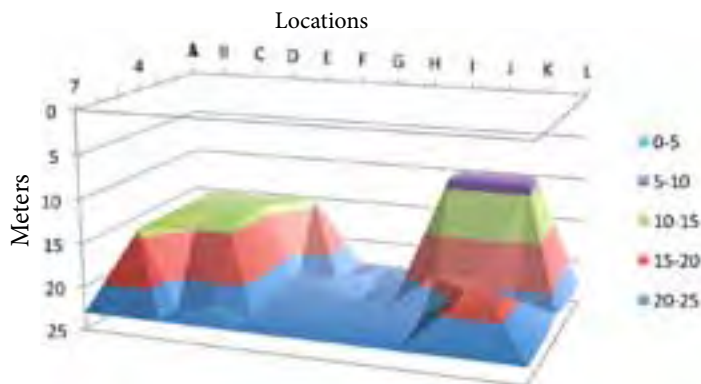
http://en.wikipedia.org/wiki/New_islands

Directions for using Excel to create a 3-D graph

1. Create the grip using letter for the column heading and numbers for the rows even though there is a set on the spreadsheet.
2. Measure carefully and put the data in the correct cell.
3. Highlight all the filled cells.
4. On the ribbon tab select *insert – other charts – 3-D surface*.
5. After the 3-D graph appears *right click on the z axis and format axis then check the box labeled put values in reverse order*.
6. Do the same for the y-axis. *(easy to follow directions can be found on numerous online sites)*

Bathymetry for City A - (Student Data)

		Locations												
		A	B	C	D	E	F	G	H	I	J	K	L	M
Meters	1	23	23	23	23	23	23	23	23	23	23	23	23	23
	2	23	14	14	14	14	23	22	22	9	9	9	9	23
	3	23	14	14	14	22	22	23	22	9	9	9	9	23
	4	23	14	14	14	22	22	23	22	19	19	22	22	
	5	23	14	15	15	22	22	22	22	22	19	19	23	
	6	23	14	23	22	23	23	23	23	23	19	19	23	
	7	23	23	23	23	23	23	23	23	23	23	23	23	



A few online oceanography sources for students (and teachers) to explore:

- **Sea Grant Marine Careers:** <http://www.marinecareers.net/links.html>
- **Oceans Alive** created by the Museum of Science in Boston: <http://www.mos.org>
- **ABC Science** (News in Science): <http://www.abc.net.au/science/news/>
- **Woods Hole Oceanographic Institute:** <http://www.whoi.edu/>
- **Marine Conservation Institution:** <http://www.marine-conservation.org/>
- **Office of Naval Research (ONR):** <http://www.onr.navy.mil/>
- **Promethean Planet & Oceans:** <http://www.prometheanplanet.com/en-us/resources/themes/oceans.aspx#UsGBmuC9w-Q>

* Many thanks to my good friend and fellow teacher, in Hampton City Schools: Joan Harper-Neely.

Get Ready For PDI 2014:

November 19-22, 2014

Hotel Roanoke, Roanoke, Virginia



PDI Theme 2014:

Sparking Innovation: Enhancing Student Learning

Innovation has been defined as people using their imagination, experience, curiosity, instincts and relationships to develop and implement ideas that create value. With the rise in emphasis in S.T.E.M. career fields and the need to have more students go into these careers, educational experts have pointed out the key ingredient needed is education.

Fostering the ability for students to be innovative begins with changing our mindset on how we do science. The experience we give students can foster curiosity or crush it. Do we support students and equip them to see the learning in failure or do students walk away seeing failure as the end result. This year's professional development institute will allow teachers to share best practices, celebrate accomplishments, and discuss new learning and teaching practices to enrich student learning experiences so Virginia science educators can develop the next generation of innovative scientists.

Hotel Information!

For information on hotel and travel to this year's conference, go to:

<http://www.vast.org/hotelinfo.html>

We Need You! Submit Your Proposal to Present today!

Share your good ideas! Submit a session proposal for the 2014 VAST PDI! Click here to submit.

https://docs.google.com/forms/d/1njhPjRLLyOSSIRDv-KVfU1-9QYFQ0PP4yE8NRBYUjmQI/viewform?usp=sharing&edit_requested=true

Proposals must be submitted by March 1, 2014. Late proposals will be considered on a space-available basis. Presenters will be notified by August 1, 2014, of the status of the proposals. A special discounted rate is provided for up to four presenters per session, however, all presenters are required to register for the PDI by September 5, 2014 to qualify for the reduced rate. Presenters will receive registration information via email in August. Note: Commercial presenters must be registered as exhibitors.

<http://www.vast.org>

Deadline for submission: March 1, 2014!

For more information on presenting at the conference and to find details on the conference strands, click here.

<http://www.vast.org/presenters.html>



VAST Professional Development Institute Speakers 2014

Reaching all students? Differentiation? Engineering? How about Flipping?

Do any of those topics interest you? We have a wide range of speakers this year that will provide you with a wealth of free information from nationally recognized speakers that will be included in your registration price! For more information go the VAST website and watch for VAST Newsletters and E-Notes!

Pre-Conference I - November 20, 2014 8:30 a.m.-3:30 p.m.

Dr. Carol Tomlinson - Differentiating Instruction: Planning Instruction that Supports Academic Success for All Learners

Academic diversity is a given in most classrooms today. Students from varied cultures, language groups, and economic strata sit side-by-side and bring with them a broad range of readiness levels or entry points, interests, approaches to learning, and motivations to learn. Understand how in many settings, the goal of teachers is to help the full range of students succeed with complex, high-level curriculum.

Participants will:

- Explore the non-negotiables of effective differentiation using classroom video clips, lesson plans, articles, discussion, and presentation.

- Investigate the implications of those non-negotiables for classroom practice.

- Leave with strategies for developing more challenging and responsive heterogeneous classrooms.



Thursday Keynote

Dr. Adolph Brown - Use Core Competencies Needed for Success and Combine Academic and Citizenship

Dr. Adolph Brown is the Founder, President, and CEO of The Leadership & Learning Institute. As a former public school educator & credentialed administrator, full tenured university professor, university dean & businessman, Dr. Brown has studied and worked along side highly successful leaders and educators. He has taken his over 25 years experience and has developed core competencies that are expressed in everything successful business leaders and educators do.

This keynote will explore the pedagogy of the marginalized, while exposing hidden biases. This talk will bridge the “academic curriculum” of reading, writing, and arithmetic with the “citizenship curriculum” of a student’s personal classroom experiences.



Friday Keynote

Dr. Carol Tomlinson - Differentiation and Brain Research

In this session, Dr. Tomlinson will talk about the key principles of differentiation and how they are connected to brain research.



Friday Keynote

Jon Bergmann - Flip Your Classroom: Reach Every Student In Every Class Every Day

Learn from Flipped Classroom Pioneer Jon Bergmann as he walks through his transformation from a twenty year lecturer to a flipped class pioneer. He will take you on his journey and show how the flipped class can transform today’s educational climate. The Flipped Class allows teachers to have more face-to-face time with students, allows for real differentiation, causes student to take responsibility for their learning, and allows students to master material.



Saturday Keynote

Dr. Diandra Leslie-Pelecky - How to Include STEM in Your Curriculum

Science, technology, engineering, and mathematics play a unique role in motorsports. While other sports can be analyzed for STEM themes after the fact, racing is one of the few sports in which you must get the science, math, and engineering right in order to win. Motorsports are also unique in showcasing engineers on television, radio, and on the web, thus providing role models for those students constantly asking, “When am I ever going to use this?” Join Dr. Diandra Leslie-Pelecky as she introduces some existing classroom resources and addresses the biggest challenge in using real-life situations to teach STEM topics: What to do when the approximations and simplifications are non-negligible as they are on a racetrack.





The Presidential Awards for Excellence in Mathematics and Science Teaching (PAEMST) Congratulations Elizabeth Miller!

On December 20, 2013, the White House announced the winners of the 2012 Presidential Awards for Excellence in Mathematics and Science Teaching. The recognition ceremonies will be announced at a later date.

Congratulations to Elizabeth Miller of Henrico County Public Schools who was recently named a 2012 Presidential Awardee for Excellence in Mathematics and Science Teaching from Virginia. Elizabeth has been an educator for 13 years. She currently teaches fourth and fifth grade mathematics and science at the Gifted Zone Center at Maude Trevvett Elementary School. Previously, Elizabeth taught at Three Chopt Elementary School and Brookland Middle School, both in Henrico County. She began teaching in Chesapeake, VA, at Hickory Middle School.

Elizabeth creates hands-on activities to foster a lifelong love of science in students. She helps students see future careers in mathematics and science through guest



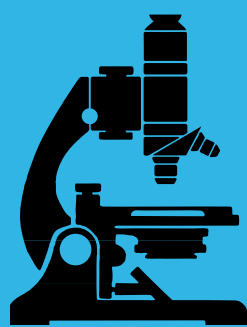
Elizabeth Miller PAEMST Finalist
at VAST PDI 2012

speakers. She has acted as the Science Core Content Teacher for her school, served on the Superintendent's Teacher Advisory Council, and started schoolwide projects such as blood drives and a science fair.

Elizabeth is always looking for teacher training programs to increase her knowledge and classroom abilities. She has attended numerous programs for educators, including

The PAEMST is the nation's highest honor for teachers of mathematics and science (including computer science). Awardees serve as models for their colleagues, inspiration to their communities, and leaders in the improvement of mathematics and science education. The 2014 Awards will honor mathematics and science (including computer science) teachers working in grades K-6. Nominations close on April 1, 2014. Please nominate an excellent teacher or encourage others to nominate their fellow teachers!

<https://www.paemst.org/>



ASSOCIATED MICROSCOPE

**Associated Microscope Inc is on Virginia State Contract for
sales of the following brand of microscopes:**

Swift, National, Leica, Accu-Scope & Unitron

**Associated Microscope Inc. provides On Site Service and
Repair of microscopes,
balances & spectrophotometers**

Indaba!

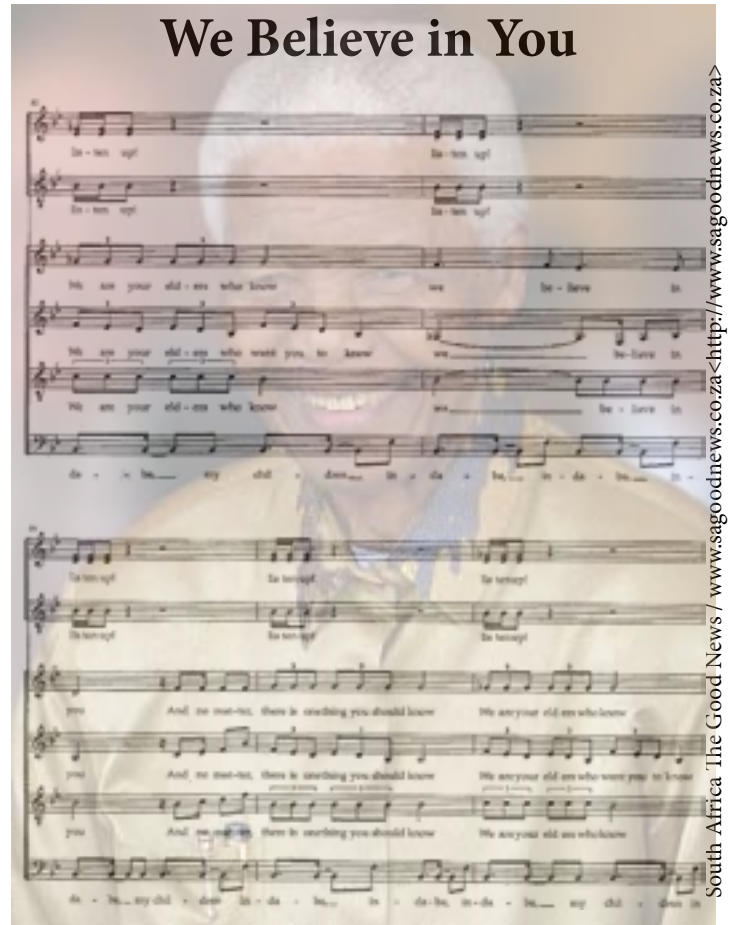
Well, son, I'll tell you:
 Life for me ain't been no crystal stair –
 It's had tacks in it,
 And splinters,
 And boards torn up,
 And places with no carpet on the floor –
 Bare.
 But all the time
 I've been a-climbin' on,
 And reachin' landin's,
 And turnin' corners,
 And sometimes goin' in the dark
 Where there ain't been no light.
 So boy, don't you turn back.
 Don't you set down on the steps
 'Cause you finds it's kinder hard.
 Don't you fall now –
 For I's still goin', honey,
 I'se still climbin',
 And life for me ain't been no crystal stair.

— **Mother to Son**
 by Langston Hughes

Last August just before the time we would commemorate the 50th anniversary of Martin Luther King's historic march on Washington, one hundred seventy of us gathered at a choral festival in Western Massachusetts to join with a small *a cappella* ensemble celebrating its own 40th anniversary, Sweet Honey in the Rock. Two of the founding members, Carol Maillard and Louise Robinson, were joined by Nitanju Bolade Casel, Aisha Kahlil, and Shirley Childress as the Washington, D.C. group truly transformed both our chorus and the audience from the usual rather staid roles of notes-art and listener into performers and participators. It was truly *Indaba!* as we joined Sweet Honey for several numbers, including the second movement of a 7-part work, *We Believe in You*, commissioned just this year by the Washington Performing Arts Society.

Indaba: a Zulu / Xhosa word meaning a convocation or assembly for conveying important matter or business. In the words of composer, Ysaye Maria Barnwell (a former Sweet Honey member): “bringing together the right people at the right time to ask the right questions in order to arrive at the right answers.” Along with the djundjun, djembe, and conga drums, twenty-three of us basses provided back-up for Sweet Honey's singing the verses.

*Indaba, my children, indaba.
 Listen up, young ones, listen up!
 God has sent us you beautiful young ones
 In answer to our prayers.
 We will guide you through life's journey,*



**Education is the most powerful weapon you
 can use to change the world. – Nelson Mandela**

You are blessings we all share.

*And no matter, there is one thing you should know,
 We are your elders who want you to know
 We believe in you.*

Part of Martin Luther King's dream is encapsulated in comments which Carol Maillard made: “We want to move people and life forward...we are on different lines, but we have the same goal...we want to elevate ourselves to the human race...open up to what is new and surprising.” Do we not share similar dreams for our young ones in our own schools and neighborhoods?

“...And sometimes goin' in the dark...”:

A year ago we and dozens of families in Newtown, Connecticut, were traumatized by the incomprehensible gunning down of innocent children and teachers. Nelba Marquez-Greene, mother of little Ana Grace who lost her life then, wrote an open letter to teachers at the start of their new year last September. While she and her husband and son (who survived the shooting) awaited the terrible news in the nearby firehouse, they “promised [each other] to face the future with courage, faith, and love,” the same wish she now had for all teachers and school employees. She defined heroes not in terms of something preternatural

or super-powered, but rather in terms of facing the every-day with extraordinary persistence and dedication: “When you Google ‘hero,’” she wrote, “there should be a picture of a principal, a school lunch worker, a custodian, a reading specialist, a teacher, or a bus monitor. Real heroes don’t wear capes. They work in America’s schools... Being courageous requires faith. It takes faith to go back to work at Sandy Hook after the shooting... But you can’t be courageous or step out on faith without a deep love for what you do.”

*Indaba, my children, indaba.
Life will hand you a series of challenges,
Some call them obstacles, we call them stepping
stones.
Sometimes you’ll know that you have succeeded,
Sometimes you’ll feel that you have failed.
But no matter, there is one thing you should know,
We are your elders who want you to know
We believe in you.*

“... Well, son, I’ll tell you: / Life for me ain’t been no crystal stair...”:

Manitoba, Quebec, Denmark, Poland, Mexico, Queensland, Ontario, Alberta, Indonesia, Swaziland, United Kingdom, Ireland, Germany, Belarus, Greece, Serbia and Montenegro, Tanzania, Liechtenstein, Estonia, Ghana, Afghanistan, Sri Lanka, Kenya, Luxembourg, Zambia, Armenia, Zimbabwe, Namibia, Ethiopia, Andorra, Tajikistan, Prince Edward Island, British Columbia, Tunisia, Belgium, Slovenia, Nova Scotia, Venezuela, Latvia, Finland, Ukraine, Yemen, Malaysia, Bulgaria, Ecuador, Peru, Angola, Portugal, India, Russian Federation, Norway, Spain, Saudi Arabia, New Zealand, Gambia, France, South Africa, Austria, Brazil, Netherlands, Romania, Japan, Panama, Trinidad and Tobago, Nigeria, Jordan, Malta, Singapore, Iraq, Nicaragua, Slovakia, Puerto Rico, Thailand, Hong Kong, Iran, Hungary, Kazakhstan, Barbados, Sweden, Switzerland, Croatia, Chile, Argentina, Virgin Islands, Colombia, Israel, Italy, Taiwan, Saskatchewan, Kuwait, Czech Republic, French Polynesia.

Nelson Rohihlahla Mandela died at 95 on 5 December, still “a-climbin’ on,” his life work still unfinished, set before us all to continue. Within 48 hours of his death Care2PetitionSite had logged well over 142,000 signatures and comments from persons in nearly one hundred countries, most Canadian provinces, and in every U.S. state but four. The world had lost one of its greatest heroes, who, together with Mahatma Gandhi, surely rank as the 20th Century’s greatest ethical teachers. Yet, as noted in the *Christian Science Monitor*, one of Mandela’s worries was that people would regard him as some sort of saint. “Saint” he was not, and he avoided running for a second term as President of South Africa partly for that reason. For 27 years he was imprisoned by the police-state apartheid regime, mostly

on Robben Island, doing back-breaking work, denied even sunglasses’ protection from the glaring light while he was smashing stones. Rather, he set about smashing the stony resolve of his captors by learning their language, “exchanging unmerited grace for bitterness” as *The Monitor* put it. In a 1993 interview with Charlie Rose, Madiba (his traditional clan name) pointed out how important it was to study and learn one’s opponents’ moves and thinking, much as a prize fighter might do inside and outside the ring.

After a celebratory release in 1990 from his life sentence, and his subsequent election as South Africa’s President in 1994, he put into practice those qualities which he claimed were “within easy reach of every soul”: honesty, sincerity, simplicity, humility, generosity, absence of vanity, readiness to serve others. “I stand here before you not as a prophet, but as a humble servant,” he stated. Mandela established the famous Truth and Reconciliation Commission, appointed F.W. de Klerk (South Africa’s immediate past apartheid President) as first Deputy President, and other National Party leaders to his cabinet. Along with Gandhi, Mandela believed in the power of truth, hence his autobiography, *The Story of My Experiments with Truth*. In his defense statement at his trial in 1963-64, he stated, “I have fought against white domination and I have fought against black domination. I have cherished the ideal of a democratic and free society in which all persons will live together with equal opportunities. It is an ideal which I hope to live for and see realized. But, my Lord, if it needs to be, it is an ideal for which I am prepared to die.”

In a statement upon his death, John S. Avery (Denmark) concluded, “if our children and grandchildren are to have a future, each of us must work with dedication for truly democratic abolition of nuclear weapons, for the reform of our economic system, for stabilization of the global population, and for protection of the global environment against climate change and other dangers. This is not the responsibility of a few people. It is everyone’s responsibility. The courage, wisdom and dedication of Mandela and Gandhi can give us inspiration...”

In Mandela, we are reminded of Lincoln’s famous response to his Secretary of War who said, “Mr. President, I think we should destroy our enemies.” “Mr. Secretary, do I not destroy my enemy when I make him my friend?”

*Indaba, my children, indaba.
We believe in you, we will see you through,
You are the winter, summer, spring, and fall
Of all our dreams and we believe in you.
We believe in you, we will pray you through,
Just do the very best you can in ev’ry thing you do.*

The gift of grace, which was most mentioned by Mandela’s 10 admirers together with the power of forgiveness, is also

exemplified in the life and work of Maya Angelou [*I Know Why the Caged Bird Sings*]. As she so eloquently spoke and sang from an old spiritual after receiving the National Book Award for Outstanding Service to the American Literary Community on 20 November, “God put a rainbow in the clouds.” She referred to those same clouds in her tribute on 6 December after hearing of Nelson Mandela’s death: “scarred by the savage atmosphere of racism,” and the “poor who live piteously on the floor of our planet.” Her poem that day begins: “The news came on the wings of a wind reluctant to carry its burden – / Nelson Mandela’s day is done. / The news, expected and still unwelcome.” Then closes, “We will always remember that you lived among us and taught us and loved us ALL.”

Perhaps like Mandela, Maya Angelou could comment at the New York award ceremony, after being introduced by Nobel Laureate, Toni Morrison, that “easy reading is damn hard writing...I’ve tried to tell the truth.” Yet, still in the world are the harsh words and deeds of those whose bitterness and hatred spill over toward the life and work of a Mandela or an Angelou, dark and vengeful as the clouds surrounding a storm. It was Barack Obama who affirmed on 10 December from the Johannesburg stadium that in reconciliation, “Nelson Mandela reminds us that it always seems impossible until it is done.” A fellow Robben Island inmate observed, Mandela “had created hope where there was none.” Do we not share a similar goal for our young ones in our own schools and neighborhoods?

*Indaba, my children, indaba.
So, listen up, young ones, listen up!
We will always have these mean streets,
In this world there will be war,
There will always be temptation,
In your lifetime you will have scars.
But no matter, there is one thing you should know,
We are your elders who want you to know
We believe in you.*

Suddenly the shots broke the late November morning silence when at 5 am, Janine’s two daughters ran to find both mother and father dead on the floor from the gun which lay between them. Shocked neighbors gathered up the girls as officials set about the grim task of determining the motive and grandparents planned funeral arrangements. Officially given a file number, officially labelled “domestic incident,” yet it was the neighbors who took the girls into their family and tried to provide some semblance of the spirit of thanksgiving and renewal which this season represents. How can you rebuild the shattered lives of two young girls? Janine was a teacher at a nearby middle school.

Nina was my student only last year. At the parents’ memorial service, the pastor read Maya Angelou’s *When*

Great Trees Fall. “When great trees fall / in forests, / small things recoil into silence, / their senses eroded beyond fear / ...And when great souls die, / after a period peace blooms, / slowly and always irregularly...Our senses, restored, never / to be the same, whisper to us. / They existed. They existed. / We can be. Be and be/ better. For they existed.”

Martin Luther King, Jr., Sandy Hook Elementary School, Nelson Mandela, Janine and Nina and Maddie — with grace and with poets’ graceful words, the air is cleansed. Maya Angelou’s tribute to Nelson Mandela states “His Day Is Done;” yet for us all, as the glow from the setting sun fades, the sun returns and a new day is born. It is for us as teachers, as humans, to take up the burden and persist.

Langston Hughes says it all: “...sometimes goin’ in the dark/ Where there ain’t been no light./ So boy, don’t you turn back./ Don’t you set down on the steps/ ‘Cause you finds it’s kinder hard./ Don’t you fall now – / For I’s still goin’, honey,/ I’s still climbin’...”

*This is Indaba, this is indaba
So listen up, young ones, listen up.*

We are surrounded by examples, even more personal than those above. I have a young wheel-chair-bound student with spina-bifida whose cheerful smile brightens every day for me and her classmates. After signing an absentee form for a trip to Hilton Head earlier in the fall, I received this reply to my quizzical look, “Oh, it’s for a tennis tournament!” As my jaw slackened somewhat, she added, “We have special racquets and rules.” She was beaming upon her return, “We won our doubles!” She came in one Monday looking exhausted. How come? “I just did a 5-K this weekend!”

A great world leader has gone. And yet, what wondrous gifts of caring, compassion, and courageous persistence continue to be shared by extraordinary ordinary people. Martin Luther once put it this way: Even if I knew that tomorrow the world would go to pieces, I would still plant my apple tree.

*Indaba, my children, indaba...
We believe in you.*

George

A VAST Life Member, George Dewey is a former VAST President and former NSTA District VIII Director. He teaches physics in Fairfax County, NBCT since 1999. He can be reached at george.dewey@fcps.edu

The Big Picture: GOES-R and the Advanced Baseline Imager

By Kieran Mulvaney



The Advanced Baseline Imager. Credit: NOAA/NASA.

The ability to watch the development of storm systems – ideally in real time, or as close as possible – has been an invaluable benefit of the Geostationary Operational Environmental Satellites (GOES) system, now entering its fortieth year in service. But it has sometimes come with a trade-off: when the equipment on the satellite is focused on such storms, it isn't always able to monitor weather elsewhere.

“Right now, we have this kind of conflict,” explains Tim Schmit of NOAA’s National Environmental Satellite, Data, and Information Service (NESDIS). “Should we look at the broad scale, or look at the storm scale?” That should change with the upcoming launch of the first of the latest generation of GOES satellites, dubbed the GOES-R series, which will carry aloft a piece of equipment called the Advanced Baseline Imager (ABI).

According to Schmit, who has been working on its development since 1999, the ABI will provide images more frequently, at greater resolution and across more spectral bands (16, compared to five on existing GOES satellites). Perhaps most excitingly, it will also allow simultaneous scanning of both the broader view and not one but two concurrent storm systems or other small-scale patterns, such as wildfires, over areas of 1000km x 1000km.

Although the *spatial* resolution will not be any greater in the smaller areas than in the wider field of view, the significantly greater *temporal* resolution on the smaller scale (providing one image a minute) will allow meteorologists to see weather events unfold almost as if they were watching a movie.

So, for example, the ABI could be pointed at an area of Oklahoma where conditions seem primed for the formation of tornadoes. “And now you start getting one-minute data, so you can see small-scale clouds form, the convergence and growth,” says Schmit.

In August, Schmit and colleagues enjoyed a brief taste of how that might look when they turned on the GOES-14 satellite, which serves as an orbiting backup for the existing generation of satellites.

“We were allowed to do some experimental imaging with this one-minute imagery,” Schmit explains. “So we were able to simulate the temporal component of what we will get with ABI when it’s launched.”

The result was some imagery of cloud formation that, while not of the same resolution as the upcoming ABI images, unfolded on the same time scale. You can compare the difference between it and the existing GOES-13 imagery here: http://cimss.ssec.wisc.edu/goes/blog/wp-content/uploads/2013/08/GOES1314_VIS_21AUG2013loop.gif

Learn more about the GOES-R series of satellites here: <http://www.goes-r.gov>

Kids should be sure to check out a new online game that’s all about ABI! It’s as exciting as it is educational. Check it out at <http://scijinks.gov/abi>

Teacher Resources:

Writers Encouraged to Enter Statewide High School Writing Contest

The Virginia Outdoor Writers Association, Inc. (VOWA) and Bass Pro Shops are sponsoring the 21st Annual High School Writing Competition for 2013-14. The goal of the competition is to reward high school students for excellence in communicating their personal experiences in the outdoors.

The competition is open to all Virginia students in grades 9 through 12. Home-schooled students are welcome to enter. The theme of this year's contest is based on a memorable outdoor experience. Any experience by the writer with hunting, fishing, camping, canoeing, hiking, birding or other outdoor activity should be the

predominant subject matter. No athletic event or competition is an eligible subject matter.

Bass Pro Shops has agreed to again cosponsor the contest, and is providing gift cards of \$150, \$100, and \$50 for purchasing any merchandise at Bass Pro Shops. There will also be gear from outdoor sports businesses and Supporting Members of VOWA. Winners will be announced and awards presented at the Virginia Outdoor Writers Association annual membership meeting in Charlottesville, VA on February 22, 2014. The winner's parents, a mentor, or a

teacher may be guests of VOWA for the presentation event. The winning entries will be read by the students at the awards program during the Annual Meeting.

Entries should be submitted in a Microsoft Word or text file, since the three top winners will be published on the VOWA Web site, and may be in other publications or on web sites. The article should be written in WORD format and attached to an e-mail. The submissions can be made between now and the February 3rd, 2014, deadline. For more information go to <http://vowa.org>

New! From the Chesapeake Bay Program ---What We're Reading:

Oldest Large Body of Ancient Seawater Identified under Chesapeake Bay

USGS scientists have determined that high-salinity groundwater found more than 1,000 meters deep under the Chesapeake Bay is actually remnant water from the Early Cretaceous North Atlantic Sea and is probably 100-145 million years old. This is the oldest sizable body of seawater to be identified worldwide.

Visit: http://www.usgs.gov/newsroom/article.asp?ID=3725&from=rss_home#.UoT_vfnIW7Q

New NRP Enforcement Tool Reaps Early Rewards

Just weeks into its debut, the network of radar units and cameras scanning the Chesapeake Bay for law breakers and citizens in harm's way is paying dividends not only to Maryland Natural Resources Police but to its partners. The Maritime Law Enforcement Information Network has helped officers nab oyster poachers in the lower Bay and guided Anne Arundel County's rescue personnel to boaters in distress.

Visit: <http://news.maryland.gov/dnr/2013/11/06/new-nrp-enforcement-tool-reaps-early-rewards/>

New USGS Study on Chesapeake Bay: Groundwater Delaying the Effects of Some Water Quality Actions

New research by the U.S. Geological Survey conducted on the Delmarva Peninsula, which forms the Eastern Shore of the Chesapeake Bay, indicates it may take several decades for many water-quality management practices aimed at reducing nitrogen input to the Bay to achieve their full benefit due to the influence of groundwater.

Visit: <http://www.usgs.gov/newsroom/article.asp?ID=3723#.UoUCFfnIW7Q>

VRUEC - Free Exhibit and Program Resources Available for Passenger Pigeon

September 1, 2014 marks the centenary of the extinction of the passenger pigeon. This exquisite bird, which once roamed North America in awe-inspiring flocks, was hunted to extinction, its last members passing away in zoo collections. Project Passenger Pigeon, a coalition of over 150 organizations, has formed to use this event as a teaching moment to familiarize people with the story of the passenger pigeon, and to use that story as a portal into consideration of current events related to extinction and the connections between people and nature.

To advance these goals, the University

of Michigan Museum of Natural History has created nine downloadable museum panels that are now available to all institutions interested in participating in the anniversary. Entitled "A Shadow Over the Earth," the exhibit discusses the passenger pigeon story, extinction more broadly, and steps we can take to preserve the biodiversity that is still with us. Project Passenger Pigeon offers these panels free to any educational organization. You can access them at <http://passengerpigeon.org/everyoneinvolved.html>. Merely download and print. The panels have no copyright restrictions: all images are public

domain or otherwise free for this use, and UMMNH is waiving its intellectual property rights in exchange for a credit on the title panel. Blank panels will soon be available as well so each institution can augment the display with local materials and interpretation. In addition to the panels, coalition members have created other tools to help institutions join in the commemoration. These include a Power Point presentation, two plays (one for children and one for adults), a documentary, and a speaker's bureau. For more information, visit <http://passengerpigeon.org>

VAST PDI 2013

This November 845 educators and exhibitors registered for the VAST Professional Institute. Educators included 204 elementary teachers and administrators, 201 middle school teachers and administrators, and 233 high school teachers and administrators. On Thursday fifty went on field trips and eighty-three attended the pre-PDI workshops. One hundred and sixty-six preservice teachers and instructors from twenty-two different Virginia colleges and universities, also participated.



Brita R. Hampton, VAST President for 2013.



The four PAEMST state finalists for grades 7-12 science are Susanne Dana, a chemistry teacher at Blacksburg H. S. in Montgomery Co., Stephen Biscotte, a biology teacher at Cave Spring High School in Roanoke County, Timothy Couillard, a physics teacher at James River H. S. in Chesterfield Co., and Anne Moore, science teacher at Robius M. S. in Chesterfield Co.



Barbara Young, DOE Elementary Science Specialist



Shirley Sypolt, VAST President for 2014



VAST AWARDS:

Outstanding Middle School Teacher: Stephanie Nelson, Thomas Harrison M. S., Harrisonburg City
 Outstanding Earth Science Teacher: Michael Pratte, Mountain View H. S., Stafford County
 Outstanding Chemistry Teacher: Beth Stacy - Virginia H. S., Bristol, Virginia
 Outstanding Physics Teacher: Jason Sterlace, St. Catherine's School
 Outstanding Teacher of At Risk Students: Jill Dean, Turner Ashby H. S., Rockingham Co.
 Outstanding Science Educator: Kristi Wagner, Williamsburg-James City Co.
 Community Partnership: Laurie C. Sorabella, Oyster Reef Keepers of Virginia



NABT Outstanding Biology Teacher Award Winner, Myron Blosser with Kathy Frame.

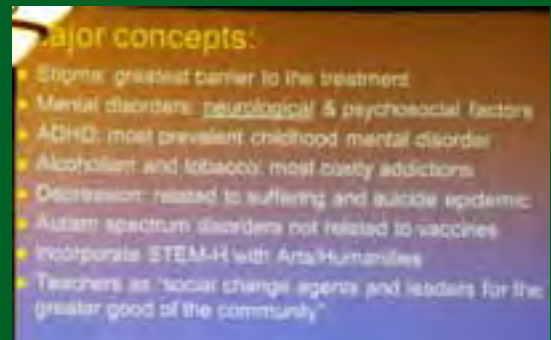


Green Ribbon Schools:

Stony Point Elementary in Albemarle County and Magna Vista High School in Henry County – are among the 64 schools nationwide recognized in 2013 by the US Department of Education as Green Ribbon Schools. Barbara Young, DOE Elementary Science Specialist, and Eric Rhoades, DOE Director of the Office of Science and Health Education presented the awards.

General Session Speakers

VAST PDI 2013



Dr. Aravich, Professor, Eastern Virginia Medical School, challenged teachers to become "social change agents and leaders for the greater good of the community."



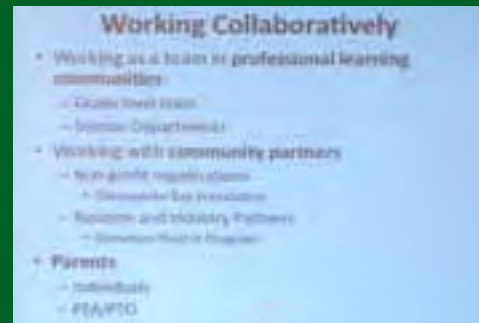
Chris Ludwig wrote the *Flora of Virginia*, a manual describing the plants of the state. The first *Flora of Virginia* was published in 1762 by J.Gronovius. It is worth the 250 Year Wait!



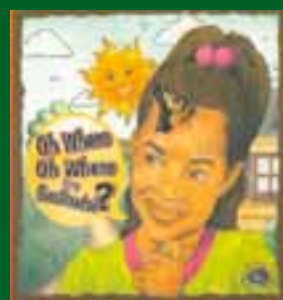
Mr. Joseph Murphy, United States Navy, described our Navy's import work maintaining peace across the globe.



How is science education exciting and meaningful?



Eric Rhoades, Director, Virginia Department of Education Office for Science and Health Education said working diligently to engage students in exciting and meaningful science education throughout the Commonwealth of Virginia. He explain "How" educators are able to do this.



Kaleela Thompson's Book



Charles Hurd's 3-D printer

Elizabeth Joyner representing the Virginia Space Grant Consortium sponsored a three part session on STEM education. Joan Harper-Neely has 23 years of teaching experience and is the Engineering and Technology Specialist at Cooper Elementary Magnet School for Technology in Hampton, Virginia. Kaleela Thompson is a 14-year-old ninth grade student at Kecoughtan High School in Hampton, Virginia. Dr. Charles Hurd is the coordinator for Engineering and Technology Education in Virginia Beach City Public Schools.

VAST PDI 2013

Exhibit Hall • Nauticus • Dinner



Information and Resources



Networking



Information and Resources



Refreshments and Colleagues



Nauticus - Dry Ice Lesson



Nauticus - Entrance



Nauticus - History of the Battleship Wisconsin



Student Made Geodesic Dome



"Mermaid Hales", Miss Hales Parcels, from Daniel R. Ford's book, *The Marlin and the Mermaid* "Help save the Bay" The Mermaid was assisted by Gina Ridgway and Susan Booth.



Dominion's PlantIt Exhibit



220 people attended the VAST Dinner and Award Presentation.



The 2013 VAST PDI program cover was designed by Melanie Foreman, a 15- year-old student at Cosby High School in Chesterfield, Virginia. She is shown here with her parents and Shirley Sypolt.



220 people attended the VAST Dinner and Award Presentation.



Region V Wins the VAST Regions Design and Build Challenge

The Spaghetti Tower vs Earthquake Challenge
Sponsored by Delta Education

The Spaghetti Tower Challenge WINNERS!



Seven teams from the eight Virginia Regions competed in The VAST Regions Design and Build Challenge. The contest was sponsored by Delta Education. Each region's team was provided with tape, spaghetti, and a marshmallow to artfully create a tower that would hold the marshmallow as high as possible, withstand an "earthquake", and please the eye of the judges. After Delta's Kip Bisignano took the towers' measurements, Andy Jackson subjected the towers to a simulated thirty second earthquake. Region V, the winning region, won money towards regional professional development and each member of the team a special gift.

At the next VAST PDI be sure to meet your VAST Regional Director to join your region's team for the third annual Design and Build Challenge.

Your Passion for Literacy Leads to Regent.

Chonita Walker chose to earn her Reading Specialist endorsement at Regent University because of the school's reputation for delivering leading-edge, values-based teaching. Chonita says Regent delivered flawlessly. Now she 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.

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Reading Specialist



VISTA Reduces Achievement Gap for Economically Disadvantaged Students

Student achievement results from the Year One VISTA cohort confirmed that economically disadvantaged students of elementary school teachers who participated in VISTA professional development achieved a 14-point increase in scaled test scores as compared to students in the control group whose teachers did not receive VISTA professional development. The 2011- 2012 (year one) VISTA cohort consisted of 937 students. Student achievement results from this cohort confirm that VISTA is having a statistically significant, positive impact on economically disadvantaged students at the elementary level.

“These results show that the changes in classroom practice that VISTA is teaching are making improvements in students’ achievement,” Mason’s Donna Sterling, VISTA’s principal investigator said. “The program has the effect of reducing the achievement gap in 5th grade science test scores between economically disadvantaged and non-disadvantaged groups.”

Positive effects were also seen for elementary school English Language Learners and students with disabilities, although sample sizes at this early point in the project were too small for those results to achieve a level of statistical significance.

Additional research revealed that VISTA positively impacts teachers’ beliefs surrounding science instruction, assessment, and how students learn; their confidence in teaching; their classroom practices; and their science content knowledge. And teachers reported that the content and strategies they learned from VISTA were directly relevant to their classroom instruction and would help them improve instruction in the upcoming year.

To date, two elementary teacher cohorts have completed the VISTA program and a third is now participating. Analysis of Year Two student achievement data is underway.

Come Join Us

VISTA is growing! Join us on **Facebook** or **Twitter** for the latest in state and national science and education news. Whether you’re a teacher, a parent, a student, or a science geek like us, we’ve got you covered!

<https://www.facebook.com/vistascience>

<https://twitter.com/VISTAScience>

Applications for 2014-15 VISTA Programs Now Open

Applications are now open for all VISTA professional development programs for the 2014-2015 school year. What does VISTA teach? Watch this short video (<http://www.youtube.com/watch?v=UFiBwLHMLBs>) for an overview! Instructional principles include hands-on science, problem-based learning, student-centered inquiry, and the nature of science.

In addition to professional development, teachers receive stipends, money to buy science supplies and attend the statewide science teacher conference, as well as the support of a community of practice and much more.

Programs include:

- For teams of **4th-6th grade** elementary teachers, a four-week summer institute and follow-up sessions focus on enhancing science content knowledge and improving both science teaching and student performance. (<http://vista.gmu.edu/elementary>)
- New **middle and high school science** teachers attend two three-credit graduate courses designed specifically for early career teachers. (<http://vista.gmu.edu/middle>)
- **School division science coordinators** with five years or less experience attend a five-day academy (three days fall, two days spring) to focus on leadership, strategic planning, and networking. (<http://vista.gmu.edu/new-science-coordinators>)
- **Science education faculty**—those who teach elementary or secondary science methods courses at Virginia’s colleges—can attend a five-day academy in the spring to learn about new research, share teaching strategies, and help build a statewide community of practice. (<http://vista.gmu.edu/science-education-faculty/>)

The Virginia Initiative for Science Teaching and Achievement (VISTA) is a statewide partnership among 80+ school districts, six Virginia Universities, and the Virginia Department of Education.

Want to learn more about the programs? Visit our **website** or contact us at 703-993-5426. <http://vista.gmu.edu/>

STEM Initiatives in Virginia Beach City Public Schools

STEM Robotics Challenge



Dr. Charles Hurd,
Coordinator for
Engineering and
Technology Education
for Virginia Beach City
Public Schools

Dr. Charles Hurd, Charles.hurd@vbschools.com

View the Video

http://www.youtube.com/watch?v=QqbYz2LluuI&feature=player_embedded

Dr. Hurd was a General Session speaker at the VAST PDI,
November 2013



3D printer used in
STEM program

As part of a growing national movement to prioritize science, technology, engineering, and mathematics (STEM) education, Virginia Beach City Public Schools (VBCPS) began a targeted effort to improve the quality, access, and real-world relevance of STEM education across all grade levels. Now in its fifth year, the STEM Robotics Challenge (SRC) offers an afterschool program called “Robots Rock and STEM Rules” in 50 elementary, middle, and high schools. Impressively, 29% of participants are female and 48% are minority students, proving that the program is enticing to those who are traditionally underrepresented in the field. While more than 700 students are currently enrolled, organizers hope to offer SRC to every student in every VBCPS school in the near future.

This year’s challenge focuses on sustainability, challenging participants to build a robot that can extract the most beach pollution within a specified period of time. With Virginia Beach’s close proximity to the Atlantic Ocean, students must solve a problem that is real and relevant to their community. Students must use NASA’s eight-step engineering design process, which teaches them how to systematically solve problems and exposes them to methodologies already used in the STEM field. Finally, students must chronicle their experience in an electronic portfolio, which allows them to use technology to reinforce the literacy lessons they learn during the school day. For many students, SRC has become their favorite part of

the school day. Parents of elementary school participants note that the robotics challenge is their children’s favorite dinner table topic, suggesting that the most stimulating lessons can happen after the school day is over. One SRC middle school teacher recently heard one of his students say, “We’re learning today in class what we did just the other day in our robot engineering design process.” The teacher was excited about the STEM academic connections beginning to emerge and even more excited by the students’ enthusiasm, adding, “They seem to walk to class and run to the SRC after school meetings.”

Business partnerships are essential to the program’s success. SRC is an excellent way businesses and corporations in Virginia Beach can be directly involved in their local school system. SAIC, one of the program’s biggest donors, has led the way for other companies and organizations such as STIHL, InMotion Hosting, Electronic Systems, Radio Shack, Virginia Beach Economic Development, WRS Engineering, Rotary Club of Hampton Roads Foundation, as well as NASA and the U.S. Navy, to become active participants. Partners help the program by donating money and materials, volunteering engineering expertise, scoring E-portfolios, judging the event, and, most importantly, providing feedback to students. By fostering participants’ interest and creativity, businesses are helping ensure that future graduates will be equipped with the knowledge and desire necessary to pursue a career in the STEM field.

Teacher Resources:

U.Va. Engineering School Open House 2014

Find out how engineers make a difference. Saturday, March 22, 9:00 am – 3:00 pm. U.Va. Engineering School – Thornton Hall. Free and open to the public. www.seas.virginia.edu/openhouse. No preregistration required.

Josie Pipkin, U.Va. School of Engineering and Applied Science

Kid Wind Challenges

Virginia is hosting two regional KidWind Challenges this year, in Virginia Beach and Northern Virginia! Registration is now open and there is limited space for each challenge so be sure to register your team early! A teacher workshop is also planned for February 8th, and you can also register for those at the KidWind website. See the attached flyers for more information about these great events!

Worth the Wait:

62 Years of Virginia Wildlife Magazine Now Digitally Archived



The Virginia Department of Game and Inland Fisheries (VDGIF) and the Library of Virginia are pleased to announce a joint partnership to digitize

and make available 62 years of Virginia Wildlife magazines from January 1959 through December 2012. If you currently subscribe or have ever read a copy of the state's leading hunting, fishing, boating and wildlife magazine, you will know that Virginia Wildlife holds a wealth of information, historical facts, incredible photographs, maps, and some of the finest wild game and fish recipes to be found anywhere.

"We are pleased to offer to all Virginians who share our passion for healthy wildlife populations and their habitats the opportunity to look back at the

Department's contributions in managing the state's wildlife and natural resources," said Bob Duncan, VDGIF Director.

This exciting project was made possible through the LYRASIS Digitization Collaborative – a Sloan Foundation grant-subsidized program that has made digitization easy and affordable for libraries and cultural institutions across the country. Through a partnership with the Internet Archive, all items were scanned from cover to cover and in full color. You can choose from a variety of formats, page through a magazine choosing the "read online" option, download PDFs, view on EPUB, Kindle, Daisy, DjVu, or search the full text version. To view the collections, simply visit <http://archive.org/details/libraryofvirginia> or visit <http://www.dgif.virginia.gov/virginia-wildlife/> for a direct link.

"Providing access to unique content about Virginia is something we at the Library care deeply about," Librarian of Virginia Sandra G. Treadway commented. "There is nothing like the handsomely illustrated Virginia Wildlife available anywhere else,

and we are thrilled that we could assist in making this rich resource easy for citizens to use in convenient digital format."

The Library of Virginia serves as both the state library and archives at the seat of government for the Commonwealth of Virginia. Established in 1823, the library maintains and provides access to vast and varied collections of print materials, manuscripts, archival records, newspapers, photographs and ephemera, maps and atlases, rare books, and fine art that tell the history of Virginia and its people. The library has chosen to digitize selected rare and Virginia specific items in an effort to make them more widely available, both through its own website and now through Internet Archive. The Library of Virginia is located one block from the Capitol in Richmond, Virginia. Click here for the Library of Virginia Homepage.

For more information about Virginia Wildlife magazine, visit the Virginia Department of Game and Inland Fisheries website at: <http://www.dgif.virginia.gov/virginia-wildlife/>.



Encourage New Science Teachers by Supporting the Eduware "First Timers" Awards!

Your contribution to the Eduware "First Timers" Awards Endowment for excellence in science education will make a difference. VAST hopes to honor and support those whose accomplishments enhance science education. A donation from Bill Stevens of Eduware, Inc., has made it possible for VAST to award to new teachers the cost of the registration to a VAST PDI. By contributing to these efforts, you are supporting the attendance of new, vibrant members to our professional development institute, (PDI). This fund supports those PDI registrations from teachers who have three years of experience or less.

Make your tax-deductible gift today. Make a real difference by supporting VA Science Educators!

To make a tax-deductible contribution please send your donation directly to the treasurer, Jimmy Johnson at :

Mr. Jimmy Johnson,
12141 Winns Church Rd,
Glen Allen, VA, 23059

In order to increase the endowment's principle, we need your support for this program. VAST members and non-members may make a voluntary pledge to the endowment. Together we can all make a difference by helping to support the expenses of the new educators so that they may continue in the field.

Please make a pledge today. This is just one way to support new science educators and quality science education for years to come. VAST is a 501c3 organization and is eligible to receive tax exempt donations.

and make your check payable to VAST. Please let Jimmy know that your check is a contribution for the "First Timers Award Endowment".

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