



Where intellect and innovation converge

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Letter from the Co-founders

On Saturday, July 13, we said farewell to our first group of Virginia STEAM Academy Student Ambassadors. Fifty-six rising 6th-8th graders participated in the STEAM Academy's inaugural summer camp, Summer STEAM. They were selected from an applicant pool of 449 and represented every school region except Region 8 (Appomattox) from which we received no applications. The students were exceptional –able, motivated, and kind (a rare combination). They studied physics, math reasoning, encryption, and leadership during the one-week residential camp on the campus of Old Dominion University.

We could not have selected a better site, stronger faculty, camp management, residential and teaching assistants, as evidenced by the overwhelmingly positive feedback from students, parents, and personnel. One hundred percent of parents who responded to our survey rated the camp excellent, and 100% said they would send their child again.

Our circle of critical friends has expanded and includes encryption instructor Dr. Andy Collins, research assistant professor at the Virginia Modeling, Analysis and Simulation Center (VMASC) and adjunct professor for the Modeling, Simulation and Visualization Engineering (MSVE) department at Old Dominion University; math instructor Mr. Vern Williams, teacher, Gifted and Talented Program, Longfellow Middle School, Fairfax County; lead physics instructor Mrs. Tonya Bates, chair, science department, Hugo Owens Middle School, Chesapeake; and physics co-instructor Ms. Melissa Brichacek, teacher, Hugo Owens Middle School, Chesapeake.

The camp was managed by the Virginia Center for Inclusive Communities (VCIC) whose experience managing youth camps, implementing leadership symposia, and building inclusive communities reinforced Virginia STEAM's commitment to nurture the whole child – mind, body, and soul (see page 3 for more on Summer STEAM 2013).

As Summer STEAM came to a close, we also submitted our final quarterly report to the Virginia Department of Education, administrators of the Virginia General Assembly's generous \$200,000 planning grant to study the feasibility of the Virginia STEAM Academy. We managed the state's dollars, staying on budget and accomplishing or making significant progress on all our deliverables. Highlights from our report include:

- Matched state's contribution, securing \$160,997 in cash and in-kind donations from inception to end of 4th quarter
- Completed the Human Capital Student Admissions Sub-committee report on the profile of and selection process for Virginia STEAM Academy boarding school students

- Conducted walking tour of Fort Monroe, preferred site for the STEAM Academy, with Secretary of Education Laura Fornash, Deputy Secretary Javaid Siddiqi, House Appropriations Legislative Fiscal Analyst Susan Hogge, Virginia STEAM Academy Board Member and Zel Technologies President and Founder Jack Ezzell, Fort Monroe Board of Trustees Chair and W.M. Jordan President and CEO John Lawson, Executive Vice President Human Resources Huntington Ingalls Industries Bill Ermatinger, Principal Architect, HBA Architecture and Interior Design Mike Ross, and Fort Monroe Executive Director Glenn Oder.
- Met with Virginia General Assembly legislators and staffers
- Met with State Council of Higher Education of Virginia leadership
- Welcomed 29 business leaders at Business Leaders' Symposium, hosted by Newport News Shipbuilding, a division of Huntington Ingalls Industries
- Convened Hampton Roads Advisory Committee, a group of business, education, science, and community leaders committed to serving a two-year term to inform and be informed by the Virginia STEAM Academy's Board of Directors on the unique assets and needs of the Hampton Roads region. Advisory committees will be established in each of the state's eight school regions.

As always, we thank you for the privilege of partnership. We look forward to Phase II in the life of the Virginia STEAM Academy.

Sincerely,

Judy and Caroline

Judy K. Stewart, PhD and M. Caroline Martin, RN, MHA
Judy.stewart@vasteam.org and Caroline.martin@vasteam.org
Co-founders, Virginia STEAM Academy

PHASE II IMPLEMENTATION



As we approach Phase II of our implementation plan, we will be calling upon you to write to your state legislators, help us identify prospective private sector donors, support our infrastructure design, and continue to be an advocate for making the Virginia STEAM Academy an essential part of the commonwealth's effort to enhance STEAM teaching and learning, and positively impact Virginia's economic future.



FEASIBILITY STUDY EXECUTIVE SUMMARY

During our year of feasibility study, the Virginia STEAM Academy Board and consortium leadership members determined the following:

WHO WE ARE

1. The Virginia STEAM Academy is a multi-dimensional initiative aimed at **attracting** more students to STEAM-related disciplines early in their academic careers and **accelerating** learning for highly able students.
2. The Virginia STEAM Academy has four components:
 - a statewide, residential, public access high school for highly able and STEAM-interested students. This will ensure quality control.
 - a middle graders' summer camp
 - professional development
 - online, on demand supplementary learning for any student in the Commonwealth of Virginia

WHAT WE PROMISE

The Virginia STEAM Academy will...

1. **provide access** to those with ability and interest, regardless of zip code. Imagine a comprehensive yet specialized science, technology, engineering, and applied mathematics (STEAM) school experience that extends 24/7, is not hampered by the hours of a standard school day, and is available to any student in the commonwealth who meets the admissions criteria.

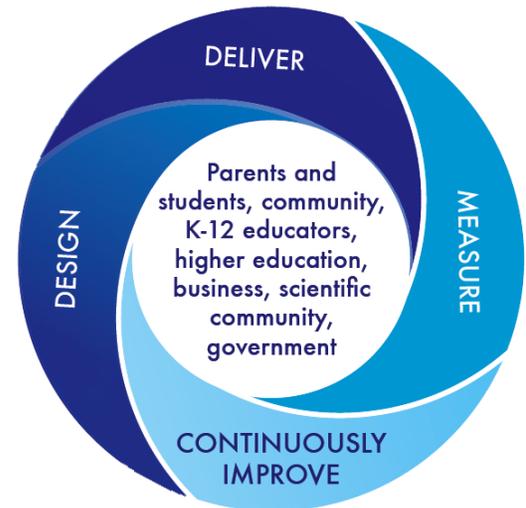
2. **lead innovation** that is based on a proven concept: North Carolina School of Science and Mathematics and the more than a dozen other statewide, public STEM schools across the nation. At NCSSM, founded in 1980, independent evaluation data shows 60% of NCSSM alum go on to pursue a STEM-related discipline (four times the national average); one in four go on to teach; 60% choose to live and work in North Carolina; and for the state's \$20m annual investment, it now sees an annual \$500 million return. Why? Because NCSSM grads tend to earn nearly double the average North Carolinian's salary and many go on to start businesses.

3. **serve as an economic driver** for the commonwealth, providing businesses and institutions of higher education with an exceptionally well-prepared high school graduate.

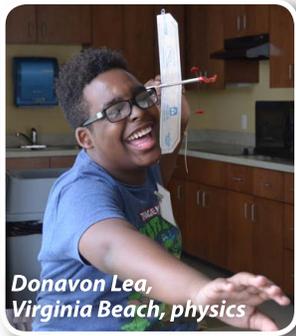
4. **leverage the wealth of resources we have in Virginia**, partnering with business, public education, higher education, science, community, and government to create the content and context in which students apply their learning to real-world challenges.

NEXT STEPS...

1. Pursue **independent accreditation** through AdvancEd and **international benchmarking** with all the requirements to graduate with a diploma acceptable to all schools in Virginia and beyond.



2. Establish Virginia STEAM Academy as a **publicly accessible** statewide institution for all who meet admissions criteria.
3. Support a student selection process that offers **every school division at least one student candidate seat** at the Virginia STEAM Academy, provided those student candidates meet the Virginia STEAM Academy's admissions criteria. Remaining seats will be placed in a weighted lottery to mirror the Commonwealth of Virginia's geographic, racial/ethnic, gender, socio-economic, and language differences as permitted by law.
4. Seek **public and private funding**.



Donavon Lea,
Virginia Beach, physics

The final deliverable of the planning grant period (June 2012 – July 2013) was Summer STEAM, our pilot summer camp intended to inspire and expose middle school students interested in physics, math, or encryption. Students also experienced leadership training and recreational activities. The camp was held July 7-13, 2013 on the campus of Old Dominion University.

Four hundred and forty nine students applied for 50 Summer STEAM seats. Virginia STEAM selected 56 students (33 boys and 23 girls) and experienced a 100% yield. (Eighty seven percent of selected students attend public school;

the remaining attend home, private, or Virtual Academy of Virginia.) Our evaluator, loaned to Virginia STEAM from the College of William and Mary, School of Education, collected and is analyzing survey data. Preliminary feedback from parents, students, teachers, and staff has been incredibly positive. One hundred percent of responding parents rated the camp excellent, and 100% said they would send their child again to Summer STEAM. Several students have expressed their desire to return to the camp next year, and those who will be ninth graders next year have asked how old they will have to be to return as Teachers' Assistants. Follow up telephone interviews with selected parents will also be con-



Becca Russell,
Buena Vista, math

ducted. Data will be used to 1) strengthen Summer STEAM; and 2) inform marketing, recruitment, selection, curriculum, residential life, and evaluation of the Virginia STEAM Academy academic year program.

The students enjoyed the various projects they worked on in class and the assortment of presentations they got to see over the week. We have written to our Summer STEAM Student Ambassadors' principals, superintendents, and legislators announcing their successful completion of the program. Over all, the camp was a huge success and we are hopeful of having another experience as wonderful as this one next summer.

Dear Judy and Caroline,

Our heartfelt thanks to both of you for your vision and tireless devotion to provide an enriching place of learning for Virginia's students. Becca was truly privileged to be invited to the inaugural Summer STEAM. She had a wonderful experience and we give you and your staff tremendous credit for making learning both fun and challenging.

Thanks again for this great honor and for all of your successful efforts to enrich the lives of Virginia's students.

With great appreciation,
Caroline and Chris Russell

Parents of Becca

Summer STEAM 2013 Made Possible By:

In alphabetical order

- BOSH Global Services
- Christopher Newport University
- Chrysler Museum
- College of William and Mary, School of Education
- Allison Crepeau, MD, Children's Hospital of the King's Daughter
- Wendy Geer, data analyst
- Hamlin & Morgan Dentistry
- Huntington, Ingalls Industries and Newport News Shipbuilding
- Langley Alumni Association
- Metro Media Productions
- Norfolk State University
- Old Dominion University
- Old Point National Bank
- STIHL
- Thomas Jefferson National Accelerator Facility
- TowneBank
- Virginia Center for Inclusive Communities
- Virginia General Assembly
- Virginia Modeling, Analysis and Simulation Center
- Virginia Space Grant Consortium
- WHRO Television
- William Walls Family Dentistry
- W.M. Jordan
- Zel Technologies



SUMMER STEAM STAFF

Jessica Hawthorne and Allison Conyers, Camp Managers
 Tonya Bates, Andrew Collins and Vern Williams, Lead Teachers
 Melissa Brichacek, Co-teacher

RESIDENTIAL ASSISTANTS

Robert Bricker, civil engineering, Old Dominion University
 Justin Nichols, sports management, Old Dominion University
 Bre Powell, forensic science, Duquesne University
 Joshua Sgambelluri, civil/environmental engineering, Old Dominion University
 Kaitlyn Tuck, business, Virginia Tech
 Kelsey Tuck, psychology, University of Virginia

TEACHING ASSISTANTS

Cassandra Brown, mechanical engineering, Olin College of Engineering and Virginia STEAM Academy summer intern, Virginia Space Grant Consortium
 Allegra Mosley, biology, Howard University
 Lyndsi Powell, honors student, Shaker Heights High School, Shaker Heights, Ohio
 William Tomlin, math teacher, Nansemond Suffolk Academy and Virginia STEAM Academy summer intern, George Washington University

Summer STEAM 2013

Student Ambassadors' Schools and Home Communities

(names withheld to protect students)

- Greenbriar West Elementary, Chantilly
- Rachel Carson Middle School, Oakhill
- Benjamin Franklin Middle, Rocky Mount
- Petersburg K-12, Petersburg
- Indian River Middle School, Chesapeake
- Spratley Gifted Center, Hampton
- Benjamin Franklin Middle, Dry Fork
- Virginia Virtual Academy, Woodbridge
- Churchill Road Elementary School, McLean
- Glasgow Middle School, Falls Church
- Kemps Landing Magnet School, Virginia Beach
- King George Middle School, King George
- John Yeates Middle School, Suffolk
- Jolliff Middle School, Chesapeake
- Kilmer Middle School, Falls Church
- Christ The King, Portsmouth
- Louise Archer Elementary, Vienna
- Homeschool, Norfolk
- Byrd Middle School, Henrico
- Princess Anne Middle School, Virginia Beach
- Rachel Carson Middle School, Herndon
- Blacksburg Middle School, Blacksburg
- Homeschool, Newport News
- Mary Ellen Henderson Middle, Falls Church
- Brandon Middle School, Virginia Beach
- Belmont Ridge Middle School, Leesburg



Dear Caroline Martin and Judy Stewart,

I was excited for attending Summer STEAM but nervous at the same time. This was the first time I ever went away for a camp and I didn't know anyone. The first day of camp you said that your goal was to exceed our expectations. Six days later I had new friends and a better understanding of physics. Because of your hard work and dedication to VA STEAM my experience was far beyond anything I could have ever expected. Thank you so much for accepting me into your inaugural Summer STEAM program.

Thank you.

*Victoria Mulvihill
Summer STEAM 2013 Student Ambassador*

- Sweethaven Christian Academy, Portsmouth
- Great Neck Middle School, Virginia Beach
- Homeschool, Fairfax
- Homeschool, Fredericksburg
- Holton-Arms School, McLean
- Bobious Middle School, North Chesterfield
- Freedom Middle School, Fredericksburg
- Gildersleeve Middle School, Newport News
- Stratford Landing Elementary, Alexandria
- Colvin Run Elementary School, Vienna
- Walker Grant Middle School, Fredericksburg
- Robert Frost Middle School, Annandale
- Lylburn Downing Middle School, Buena Vista
- Mayfield Intermediate School, Manassas
- Hornsby Middle School, Williamsburg
- Homeschool, Lovettsville
- Kings Fork Middle School, Suffolk
- Ruffner Academy, Norfolk
- Kemps Landing Magnet School, Virginia Beach
- Montua Elementary School, Annandale
- Huntington Middle School, Newport News



CONTACT: To contact Virginia STEAM Academy Co-founders Judy Stewart and Caroline Martin, email judy.stewart@vasteam.org or caroline.martin@vasteam.org, or write to us at VA STEAM Academy, PO Box 324, Suffolk, VA 23439

The Virginia Science Technology Engineering and Applied Mathematics (STEAM) Academy, Inc. is a 501c3 non-profit, charitable organization