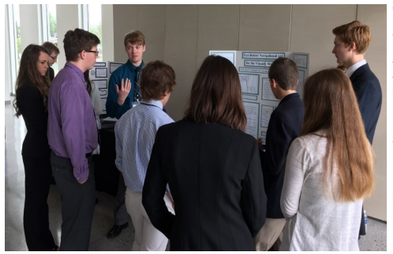
## VIRGINIA TECH INSTITUTE FOR CREATIVITY, ARTS & TECHNOLOGY (ICAT)

Teams from the Governor's School for Science and Technology competed for honors at the Virginia Maker Conference hosted by the Virginia Tech Institute for Creativity, Arts, and Technology (ICAT) on ICAT Day, May 1. The conference **Process Award** was awarded to the GSST team project "Eye-Robot: Navigational Aid for the Visually Impaired". The winning team included Michael Hendrickson (Team Leader, Phoebus HS), Ryan Flint (Jamestown HS, Elizabeth Horley (Jamestown HS), Caroline Kersey (Gloucester HS), Brittany Kinslow (Kecoughtan HS), and Jesse Nelson (Jamestown HS).

Also competing from GSST was the team project "Visi Boom – A System for Providing Auditory Awareness in an Isolated Environment", led by Team Leader Tanner Loper (Denbigh HS). Team members included Nir Diskin (Grafton HS), Siddhant Mehtota (Tabb HS), Alexander Kleb (Tabb HS), and Tavaris Noel (Grafton HS). The students attending the conference had good things to say about their ICAT Day experiences. "Take-away" comments included: "I learned how to question a client/customer/user when creating solution ideas and designing a prototype"; " It was very cool to see what others are doing. It was a great environment of makers who are passionate about STEM"; "I learned the importance of incorporating art and creativity into design; it's not just about technology"; and "I learned the importance of real-world demonstration skills and leadership skills."



GSST students were immersed in a design process workshop led by Virginia Tech student members of the national design organization Design for America, guiding students to tackle social challenges through design innovation.

## TIDEWATER SCIENCE & ENGINEERING FAIR

**2nd Place Overall Grand Prize**
Riya Palikonda-Warwick HS

**Special Awards**
Bryce Edwards-Warwick HS
1st Sr. Div.-Office of Naval Research $50
Miroslava Marinova-Grafton HS
American Helicopter Society-$250
AIAA-2nd Sr. Div.-$100
Eunice Namkoong-Tabb HS
1st Sr. Div.-HRSD Evir. Improvement Fund-$700
2nd Sr. Div.VA sec, Am Water Works Assoc. $100
1st -Stockhoms Jr. Water w/VA Water Enviro Assoc.-$?

**1st Place Category Awards**
Cellular & Molecular Biology, Riya Palikonda – Warwick HS
Engineering (Elect. & Mech.), Joshua Glaab - & Michael Hendrickson – Phoebus HS
Energy & Transportation, Siddhant Mehrotra – Tabb HS
Physics and Astronomy , Miroslava Miranova – Grafton HS
Plant Sciences, Emily Quick-Cole – Kecoughtan HS

**2nd Place Category Awards**
Chemistry, Jazmin Dicks – Woodside HS
Energy & Transportation, Jeffery Cho – Gloucester HS
Environmental Science, Eunice Namkroong – Tabb HS
Mathematical Sciences, Bryce Edwards – Warwick HS
Microbiology, Shannon Hepp – Kecoughtan HS

**3rd Place Category Awards**
Material & Biological, Brittany Kinslow – Kecoughtan HS
Medicine & Health, Ashley Guishard – Smithfield HS

**Honorable Mention**
Computer Science, Chenyun Zhang-Grafton HS &
Julie Zhou-York HS
Elec./Mech, Shane Scott– Poquoson HS
Mat'LS/Bio, Kate Perkins-Warwick HS
Mat'LS/Bio, James Furches– York HS
Medicine & Health, Ashley Guishard-Smithfield HS

# THE GOVERNOR'S SCHOOL for SCIENCE AND TECHNOLOGY

Newsletter

2017

## US Physics Olympiad Competition Fnet Test

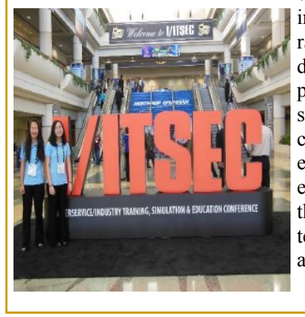
*Back* James Harrington (Warwick), Bryce Edwards (Warwick), Kate Perkins (Warwick) Jenny Gu (Tabb), Eunice Namkoon (Tabb)
Front Rachel McNamara (Tabb), Cale Overstreet (York), Taekhwan (James) Oh (Tabb)

The Physics Olympiad is a nine-day international competition among pre-university students from more than 60 nations. At the International Physics Olympiad, the competitors are asked to solve challenging theoretical and experimental physics problems. The US Physics Olympiad teams selects its five team members by asking member teachers to nominate their best and brightest students to take the Fnet Test to qualify for the team. Each year tens of thousands of students participate in the Fnet test. Annually, the approximately 300 students who score the highest on the Fnet test are invited to continue in the Semi-Final test for the US Physics Olympiad team. Twenty students were selected from the semi-finalist to attend a two week training camp in Maryland culminating in the selection of five students to represent the US in the International Physics Olympiad which was held in Indonesia. Jenny Gu of Tabb High School in the Engineering Physics Strand scored in the top 300 nationally and competed in the US Physics Olympiad Semi-Final test in April.

Jakob Weiss (Lafayette), Thorin Jean (Jamestown), Matt Carter (Gloucester)

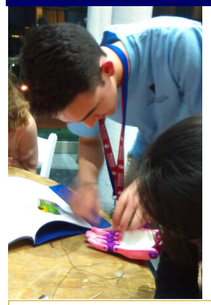
## Interservice/Industry Technology, Simulation and Education Conference 2016

Winnie Zhang and Julie Zhou from York County Public Schools represented the Governor's School for Science & Technology at the Interservice/Industry Technology, Simulation and Education Conference in Orlando, Florida. I/ITSEC is one of the largest simulation conferences with more than 15,000 in attendance. GSST is one of only six high schools to be represented in the Future Leaders Pavilion as part of the STEM initiative. Winnie and Julie worked throughout the summer and fall to prepare their simulation entitled "A Simulation on the Effect of a Major World War on the Population of the World". They discussed their work and demonstrated their simulation with many visitors and other students over the duration of the conference. They gave a formal presentation of their work to the student competition. Additionally, they were able to explore and interact with the enormous range of technology on display. Winnie and Julie plan to major in computer science in college and this conference gave them an exceptional professional experience and a look into the directions that technology and simulation are heading.




$8,237,116 in scholarships
awarded from numerous top tier colleges and universities!

## Student Conference of the National Consortium of Specialized Secondary Schools in STEM



Students from the Governor's School for Science and Technology attended the Student Conference of the National Consortium of Specialized Secondary Schools in STEM (NCSSS). They were chaperoned by Dr. Mary Patterson. The conference was jointly hosted by the Bergen County Academies, Hackensack, NJ and the Stevens Institute of Technology, Hoboken, NJ.

The conference included tours of the extensive laboratories of both host institutions, as well as various sites of New York City, with emphasis on innovative technology, including virtual technology.

### Virginia Junior Science & Humanities Symposium

GSST students presented talks at the Virginia Junior Science and Humanities Symposium at James Madison University. These students worked very hard to prepare professional quality presentations. They were asked many questions by panels of university professionals. GSST students showed that they are poised and knowledgeable about their studies. Please congratulate the following: Alex Culver, Smithfield HS; Gold Medal & Outstanding Presentation Awards Kylee Hockaday, York HS, Outstanding Presentation Award Abbigail Menge Burton HS, Outstanding Presentation Award Riya Palikonda – Menchville HS, Outstanding Presentation Award Annie Cao, Grafton HS, Hannah Yoon, Grafton HS, Emily Vogt, Grafton HS, Mira Marinova Grafton HS., Tryston Raecke Tabb HS, Elizabeth Horley, Jamestown HS, Laurel Hunter, Hampton HS, Shannon Hepp, Kecoughtan HS, Cale Overstreet, York HS.

### 17th Annual CNU Regional High School Mathematics Contest.

CNU High School Math Contest is an annual mathematics competition for high school students in southeastern Virginia. The goal of the competition is to cultivate interest in good mathematics. Over 100 students representing schools from central and eastern Virginia came out to compete.

GSST was represented by two teams comprising of students from Jamestown HS & Lafayette HS, in Williamsburg, James City, Grafton HS, & Tabb HS in York, Kecoughtan HS, in Hampton and Menchville HS, in Newport News. They won for 2nd overall team score, with individual prizes going to: Ben Keener for top school score outside overall winners, Stephen Shamaiengar for top score, all independent schools, and Stanislav Kuzmenko for 2nd highest score, overall.

## 2017 NCWIT Award for Aspirations in Computing

The regional NCWIT (National Center for Women & Information Technology) Award for Aspirations in Computing honored Laurel Hunter, Hampton HS and Katie Liu, Grafton HS for their computing-related achievements and interests. Awardees are selected for their computing and IT aptitude, leadership ability, academic history, and plans for post-secondary education. Recipients receive two engraved awards: one for her, and one for her school's trophy case. They also receive opportunities for scholarships, internships, research experiences, and other educational and employment opportunities provided by NCWIT member organizations. The NCWIT Award for Aspirations in Computing offers both a national and local award competition to generate support and visibility for young women's participation in computing around the country. Each local award taps into the powerful network of NCWIT Alliance members: teams from academia, non-profit organizations, startups, and corporations come together to build a community of support for young women interested in computing.

**2017 Virginia & Washington DC Affiliate Competition Results**
**Laurel Hunter - Winner**
**Katie Liu - Runner-Up**

## GSST hosted their first programming contest.

The Scientific Programming strand organized the contest which was held in April of 2017, invitations were sent to high schools in the area. GSST students from various schools took an active role in designing the logo, flier, t-shirt and website. The contest challenged teams of up to four students to write programs that solved problems in a given amount of time. The team with the most problems solved correctly is declared the winner of the contest .

## Local Innovation Expert meets with GSST Engineering Students.

Marty Kaszubowski, Executive Director of the Center for Enterprise Innovation at Old Dominion University, met with GSST engineering students. He focused on ways in which engineering innovation is brought to markets and to people. He explained the role, organization, and evolution of the startup company, and gave students overviews of the major kinds of business organizations and how technology is developed and managed there. Said Marty, "my hope is that the students will see entrepreneurship as a viable career path that requires the same sort of creativity and problem solving skills that scientists and engineers use on a daily basis. I hope they'll remember that the principles of entrepreneurship will help them see every problem as an opportunity to create value and improve the world." When asked what he found at GSST, Marty replied, "They were bright, engaged, and ready to explore the ideas I offered up. I look forward to doing this again, and I expect to hear great things from the students as they move forward in their careers."

## GSST Alumni

### Governor's School Students' Research Impacts Commercial Aquaculture Industry

Governor's School students Lauren Cook and Cassidy Clark conducted their senior mentorship research project at The Virginia Tech Agriculture Research and Extension Center under the guidance of research specialist Steve Urick. The goal of the research was to determine an optimum level of dietary astaxanthin to improve coloration of *Amphiprion acellaris (clownfish).*

The adjustment made by Reed Mariculture Inc. to their feed, and the marketing of the feed is attributed to the results of the trials conducted by Lauren and Cassidy. In the company's latest advertisement campaign, post cards which advertise the improved fish feed will be handed out at trade shows worldwide and 10,000 postcards will be inserted in the January/ February issue of the international publication *Tropical Fish Hobbyist.*

Lauren and Cassidy were both enrolled during the 2015 -2016 school year in the biological sciences strand and attended Tabb high school in York County. Lauren and Cassidy are pursuing their interest in aquaculture at the University of South Carolina and the University of Rhode Island, respectively.

**For more information on the Governor's School for Science and Technology call 757-766-1100 or visit us on the web, www.nhrec.org/gsst**

## Teacher Highlights

Professor Steven Walk has joined leaders from the ODU Center for Enterprise Innovation and Hampton Roads Innovation Collaborative in creating a recurring series of events designed to stimulate technical product idea generation through commercialization in Hampton Roads.

Entitled "Concept to Commercialization", the initiative is designed to help grow the Hampton Roads economy by assisting local entrepreneurs to strategically create products marketable across the US and around the world.

GSST students have and will participate in this effort through a specially designed senior mentorship. Students are tasked to develop quantitative technological forecasts of diverse technologies, focusing on the founding and enabling technologies in the strategic business clusters of Hampton Roads. In so doing, the students develop expertise in all kinds of advanced technologies and their growth, performance, and diffusion trends.

## Director Highlight

**Governor's School Director, Vikki Wismer, participated in the second annual summit to identify solutions to close the excellence gap; the troubling disparity in academic performance between lower income and higher income students at advanced levels. Mrs. Wismer was personally invited by the Cooke Foundation to collaborate with more than 100 other principals, as well as, other school leaders and experts nationwide to learn about cutting-edge research and share best practices for supporting high-achieving, low-income students.**