

DATES TO REMEMBER:

APR 6 STATE SCIENCE FAIR
APR 9 1ST SPRING
ELECTIVE CLASS
APR 15-19 SPRING BREAK
MAY 6 SENIOR DINNER

Counselor's Corner

For students (and parents), spring means everything happening at full speed. Registration is complete and students will find out which elective they received next week. The new electives will meet for the first time on April 9.

Spring also means many events. We will be holding a canned food fundraiser for Feeding America the week of April 8th. Students may participate in one of two ways. Students may form ultimate Frisbee teams and each team member must donate 5 canned food items to play. We will also have our AM1 and PM1 classes competing to see who can bring the most canned food items in. The winning ultimate Frisbee team and the winning AM1 and PM1 classes will receive a pancake breakfast or other food award. Please encourage your students to bring in canned food! It's an easy and fun way to give back to our community.

Senior Dinner is scheduled at Hotel Roanoke for Monday, May 6 at 6:30. The invitations will be mailed on April 22 and the RSVP will be due to me by May 1. We will also be having a Senior Breakfast on the morning of May 17. I will be contacting senior parents in the near future asking for help coordinating and feeding our seniors. Thank you in advance for your help!

AP testing takes place in the first two full weeks of May. As in the past, students are to have registered for their AP tests through their home school. Students are responsible for paying the fees when registering. If you have questions about registration, fees or deadlines, please contact your student's home school. As always, if you need any assistance, please do not hesitate to contact me.

RVGS Newsletter

Issue 6
March 29, 2019

Regional Science Fair: Let's Hear it for the Boys!

The Western Virginia Regional Science Fair is an annual event that celebrates science by bringing together in competition students from Roanoke City, Roanoke County, and Roanoke Valley Governor's School. This year's fair was held at Roanoke College on March 16. Students competing at the regional fair have already won awards in at least one fair and often two, and they arrive at the regional fair ready to compete for prizes, awards, and all-expense paid trips to the Intel International Science and Engineering Fair (ISEF), the largest pre-college science competition in the world.

Appalachian Power Company sponsored this year's regional event, and their \$5,000 donation expanded the number of projects advancing to ISEF from two to three. Thank you, APCO!

RVGS typically sends around 70 students to the regional fair, and we generally hope to have a dozen or so advance to the state fair. I am thrilled to report that this year, Gov. School produced a bumper crop! **Not only did our Lab Rats win every category at the regional fair, qualifying 18 of them to advance to states, but all of the Grand Award winners and Alternate Grand Award winners were Governor's School students, too.** We had an extraordinary showing during the awards presentation, and **here's a Regional Fair Fun Fact for you – though all of last year's Grand Award winners were female, this year they were all male...so let's hear it for the boys!**

CONGRATULATIONS to Luke Gardner and Luke Suess, Harrison Huang and Erik Scarlatescu, and Kevin Sheng, the fair's Grand Award winners! They will receive an all-expense paid trip to ISEF, which will be held this year in Phoenix, Arizona,

from May 12 – 17. At the fair, the guys will interact with over 1,700 other gifted young scientists from more than 75 countries, regions and territories, and they will compete for \$4 million in prizes and special awards. Last year's top winner at ISEF was a 19-year-old Australian student who was awarded \$75,000 in cash for designing and building a prototype of an autonomous robotic window cleaner for commercial buildings.

CONGRATULATIONS to Shayom Debopadhaya, Logan Dunkenberger, and Adi Iyer, the fair's Alternate Grand Award winners! They will compete at ISEF if the Grand Award winners are unable to attend the event.

CONGRATULATIONS to all of the RVGS students who won first place category awards at regionals and will advance to the state competition at the Berglund Special Events Center in Roanoke on April 6:

Shayom Debopadhaya, Logan Dunkenberger, Isaac Fix, Luke Gardner and Luke Suess, Mary Grace Giles, Harrison Huang and Erik Scarlatescu, Adi Iyer, Ethan Johnson and London Paige, Hannah Largen, Elysia Lin and Madison Stein, Billy Luqiu, Ryan Mollin, Ryan Rigatti, Kevin Sheng, Carly Smith, Reid Tenzer, Kunika Tiwari, and Uyen Tran.

Many other Governor's School students received second, third, and fourth place category awards, as well as two dozen special awards totaling over \$1,500 in cash prizes. For the full listing of award winners from the Western Virginia Regional Science Fair, please visit the RVGS home page at www.rvgs.k12.va.us.

-Regina Carson

Message from the Director

I hope everyone is doing well as we head into spring! At RVGS, this is a season featuring science fair advancement, scheduling courses for next year, and preparing for the final stages of the school year. As featured in the lead article this month, the Western Virginia Regional Science Fair took place recently, and RVGS students performed wonderfully. We are deeply appreciative of Appalachian Power for their generous sponsorship of the fair, allowing an additional project to go to ISEF this year. Novozymes Biologicals and the RVGS Foundation also provided sponsoring donations.

RVGS has a total of 19 projects advancing to the Virginia State Science and Engineering Fair and three projects advancing to the International Science and Engineering Fair. Congratulations to these students for their success, and good luck in the future competitions!

Another recent event to celebrate was our 2nd annual STEM Career Panel, featuring professionals from a diverse range of fields. The students had the opportunity to hear about the panelists' work responsibilities and educational paths to inform their career pursuits.

As always, please feel free to contact me if you have any questions, ideas, or concerns.

Virginia Junior Science and Humanities Symposium



recognized for “Excellent Presentation in Biomedical Sciences,” **Adi** for “Most Technically-Proficient Project in Engineering,” and **Michael** for “Innovative Research.” **Logan Dunkenberger** was named an Alternate winner of the symposium and received a gold award for her project involving a therapeutic approach for EBV-positive lymphoma. **Jackson Moyer** was named an Alternate winner of the symposium, as well, and received a gold award for creating a pill-bottle holder for dementia patients.

The Virginia Junior Science and Humanities Symposia Program (JSHS) is designed to challenge, engage, and publicly recognize students in grades 9-12 conducting research in the STEM fields. It is sponsored by the US Army, Navy, and Air Force, with the aim of preparing and supporting students to contribute as future scientists and engineers. On behalf of the Department of Defense, the Academy of Applied Science administers the national program, and our regional JSHS was held March 14-15 at JMU.

After Student Project Forum each year, the RVGS faculty invites a dozen or so students to present their research projects at JSHS. This year, 13 Gov. School students were selected for the all-expense paid trip to the regional conference, and Ms. Bohland and Mr. Wages served as chaperones. Competition at the symposium was fierce, but our group fared very well.

Shayom Debopadhaya, Adi Iyer, and Michael Lin won special awards for Outstanding Research, with **Shayom** being

In the event that symposium finalists are unable to attend the national competition, as Alternates, **Logan and Jackson** would receive an all-expense paid trip to present their research in the poster session at the 57th National Junior Science and Humanities Symposium held April 24-27 in Albuquerque, New Mexico. Fingers crossed for these Lab Rats!

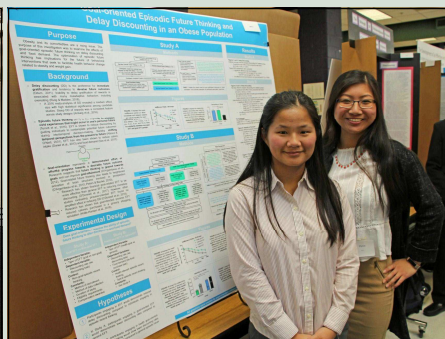
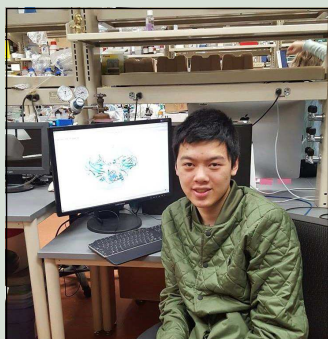
Congratulations, everyone!

-Regina Carson

Lin, Luqiu, and Stein Cited as Co-authors

Congratulations to **Billy Luqiu, Madison Stein and Elysia Lin**! Due to their exemplary work at their mentorship sites this year, they will be listed as co-authors on their mentors' manuscripts! All three students worked at Fralin Biomedical Research Institute at VTC in Roanoke.

Elysia and Madison's efforts in Dr. Jeff Stein's Center for Transformative Research on Health Behaviors resulted in their research project, "Goal-oriented Episodic Future Thinking and Delay Discounting in an Obese Population." Billy worked with Dr. Deb Kelly, a groundbreaking researcher who developed the new field of structural oncology, and his research resulted in his science fair project, "A Novel Computational Approach to Structural Analysis of p53: A Breakthrough in Small Particle Reconstruction." Well done, Lab Rats!



Ms. Villers Honored by American Chemical Society

Hooray for Ms. Villers! The Virginia Blue Ridge Section of the American Chemical Society just named her its **2019 Outstanding High School Chemistry Teacher of the Year!** The award recognizes innovation in classroom and program activities, and comes with a cash prize for Ms. Villers and a thick book of her favorite subject - chemistry! ACS's Blue Ridge Section covers Roanoke City, plus the Virginia counties of Alleghany, Amherst, Bedford, Botetourt, Campbell, Craig, Floyd, Franklin, Giles, Henry, Montgomery, Pittsylvania, Pulaski, Roanoke, and Rockbridge, and the West Virginia county of Mercer. Congratulations, Ms. Villers! Gov. School is proud of you!



Alumni Spotlight on Lydia Higgs



Lydia Higgs (RVGS/PH Class of 2006), is one of our most active alums. She is back on campus often, speaking to our biology classes and judging at Project Forum. Lydia is a very busy community volunteer, medical school instructor, and licensed, certified genetic counselor, but she was kind enough to make time to answer some questions for us via email for this month's Alumni Spotlight.

Where have you been? I graduated from **William and Mary** (Go Tribe!) in 2010 with a B.S. in Biology, then I taught at Jamestown High School in Williamsburg for three years. From 2013-15 I was in graduate school at **Arcadia University**, which is where I earned my Master of Science in Genetic Counseling. I then worked for **UVA** at the Emily Couric Clinical Cancer Center for a couple of years before moving back to Roanoke in 2017.

What did you do there? At W&M, I was part of the **dance team**, a social sorority (**Phi Mu**), and earned my **Virginia teaching license**. At Jamestown High, I **taught Chemistry, Biology, and AP Bio**, and I **co-sponsored the Science Club**, which focused on sharing potential science-based career pathways with our students. While I was teaching, I also **coached the W&M Dance Team** and **took online graduate biology classes**. At UVA, I **worked as a Genetic Counselor in oncology**.

Where are you now? I'm now a **Genetic Counselor II at Carilion Clinic** in Roanoke. I am also an **Instructor** at the Virginia Tech Carilion School of Medicine, a **board member** of the Virginia Association of Genetic Counselors, a **lifetime member** of the Girls Scouts, and a **volunteer** with the Junior League of Roanoke Valley. I'll **co-chair a state-wide annual genetics education meeting** this May.

What are you doing there? A **Genetic Counselor is part of a patient's clinical care team**. My day-to-day work includes seeing patients, reviewing their personal and family history of cancer in detail, and discussing the likelihood of an inherited predisposition to cancer. If a patient elects to undergo genetic testing, I help them choose the best test based on their clinical features and their own goals for information. After results are returned, I interpret them and explain to the patient what was found and how that information will impact their care and the potential care of family members. I also share this information and the recommendations from published national guidelines with the patient's care team, so they can utilize the information in the patient's care plans.

I participate in research and have **co-authored two published papers** so far: "Cases and evidence for panel testing in cancer genetics: Is site-specific testing dead?" and "Professional Issues of International Genetic Counseling Student Educated in the United States." As an Instructor at the medical school, I **teach 3-4 short courses in genetics, oncology, and ethics**, to help future physicians incorporate genetics knowledge into their practices no matter what specialty they select in the future.

Where are you going? Carilion! I **love my job, and what I love most is working with folks one-on-one and helping them find the ways that science makes sense in their lives**. I hope to continue to help the genetics program grow locally and contribute on a large scale through research and by serving with state and national organizations.

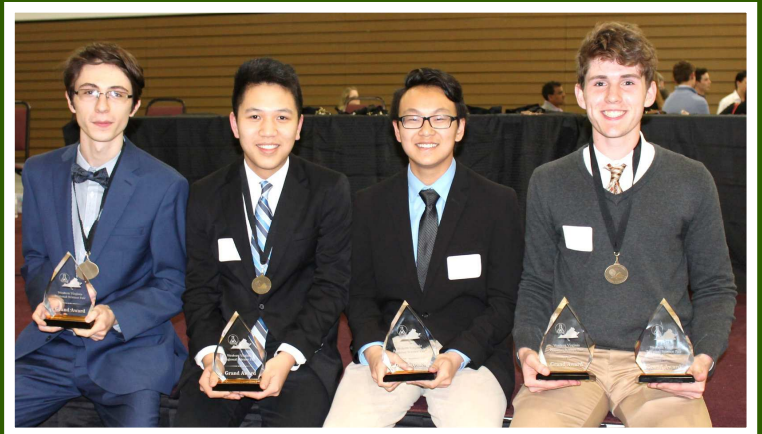
How is what you learned at RVGS helping you get there? RVGS wasn't just about math and science. It was also about discovering how **you** learn, and those skills are invaluable. Gov. School taught me to ask big research questions, that it's okay when something doesn't go as planned, how to take detailed notes and be clear in sharing them back with others, and how to support others in their

2nd Annual STEM Career Day at RVGS

March 19th was **STEM Career Day** at Gov. School! Thank you to our accomplished, informative, and diverse panel of eight area professionals who spoke about their jobs and their journeys and took questions from our students, including "Does it stink at the wastewater plant?" (Yes, it does). The panelists gave examples of the importance of exploring many fields, of having the confidence to switch to Plan B or Plan C, and how where you go to college is much less important than what you do when you get there.

Our Elite Eight were: **Steve Andes**, an Industrial Automation System Engineer at TMEIC; **Sheree Andrews**, an Industrial Wastewater Chemist at Western Virginia Water Authority; **Dr. Michael Fox**, Director of the Developmental and Translational Neurobiology Center at Fralin Biomedical Research Institute; **Amir Furhang**, a Software Control Engineering Manager at TMEIC; **Jason Hill**, a Biologist/ Statistician/ Water Assessment Team Lead at the VA DEQ; **Dr. Tarin Schmidt-Dalton**, a Family Physician and Association Dean for Clinical Science at Virginia Tech Carilion School of Medicine; **Royce Steiner**, a Water Monitoring Specialist at the VA DEQ; and **Dezarai Thompson**, a Bio-agriculture Researcher at Novozymes.





Thank you to APCO for sponsoring the Western Virginia Regional Science Fair!

