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 show 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 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:


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
The Virginia Junior Science and Humanities Symposium (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 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.

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

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!

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!
Alumni Spotlight on Lydia Higgins

Lydia Higgins (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.

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 Translation- al 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 Dezarae Thompson, a Bio-agriculture Researcher at Novozymes.
Thank you to APCO for sponsoring the Western Virginia Regional Science Fair!