

## DATES TO REMEMBER

- Oct 18—PM Early dismissal
- Oct 19—Shelly Challenge
- Nov 1—Interim 2
- Nov 5—Parent-Teacher Conferences

## Counselor's Corner

First semester is flying by! Our students are making a great deal of progress and are working hard to keep their grades up while also participating in a variety of activities outside the school day. The main early action/decision deadline for seniors is November 1<sup>st</sup>. This is both an exciting time for seniors and their parents and also a very stressful time. I promise, you will get through it!

I have met individually with over half of the seniors to discuss their college application process and will meet with many more throughout the month. I have also met individually with each first year student to begin to get to know them and to see how I can help meet their individual needs. I plan to meet individually with the returning 10<sup>th</sup> graders next month and with the 11<sup>th</sup> graders in February.

I work with students on time management and study skills, but I am also here to help them deal with daily stress and anxiety. It's my goal to support the students not only academically, but emotionally as well. Please let me know if your student is struggling and how I might be able to help.



# RVGS Newsletter

Issue | August / September, 2019

## MENTAL WELLNESS IS A RVGS FOCUS

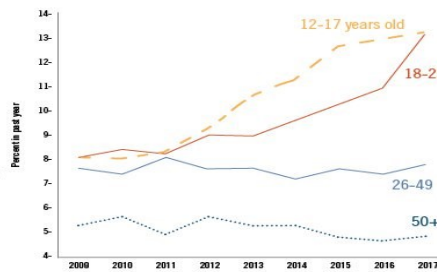
With the implementation of RVGS Determined in 2017, RVGS faculty and staff made growth mindset a priority for our student body. Along with that we began emphasizing even more the importance of study skills and how to use them efficiently. Good sleep habits have been a focus as well as we learned that teenagers in general, and our students in particular, were greatly sleep deprived. The implementation of the technology pledge and discussions from Mr. Levy, Mrs. Sebolt and classroom teachers have given

want to make sure that we are supporting our students as much as possible.

Before classes began, the faculty received training on how to recognize and help students experiencing high levels of stress or anxiety. We are all making an effort to engage with our students and get to know them so we can intervene early if we see signs of struggle. From plastering the school with posters of positive messages and encouragements to seek help when needed to greeting our students as they

### STUDENT DEPRESSION ON THE RISE

An analysis of a federal survey shows increasing rates of teen and young adult respondents reporting a major depressive episode in the last 12 months. Rates have stayed more consistent among older adults.



SOURCE: Journal of Abnormal Psychology

EDUCATION WEEK

our students the information they need to begin putting healthy sleep habits into place.

This year we continue these priorities, but we are also trying to emphasize mental wellness. Studies show that across the United States the rates of anxiety, depression and suicidal ideation in adolescents have increased significantly in recent years. Our population of high-achieving students are particularly vulnerable. We

enter and exit the building, we are working to increase awareness, build relationships and offer emotional support and encouragement to all. If you are concerned about your student, please reach out to Mrs. Sebolt. It is imperative that we all work together to ensure our students are not only academically successful, but emotionally healthy.

- Kathy Sebolt

## Message from the Director

We have had an excellent start to the 2019-20 school year here at RVGS. The students have made strong progress, and I've been hearing some wonderful updates from the teachers. I am appreciative to our wonderful teachers for the way they welcomed their new classes and quickly created classroom communities.

Early in the year, we stay watchful for students in need of support, whether in relation to grades or mental wellness. Any student, from their first year to senior year, can feel the strain academically or emotionally. It is important to reach out when that happens so we can help. Be sure to seek out assistance from your teachers proactively, rather than as a last resort.

We are continuing to build on our RVGS Determined program. As a reminder, RVGS Determined is intended to help give students tools to strive toward continual growth and personal improvement. While rigorous instruction in STEM courses will always be at the center of our work at RVGS, we choose to also dedicate effort to helping our students develop skills for life-long success.

To help our students further, we recently welcomed Dr. Sandra McGuire via skype to refresh the students on high yield study strategies. I encourage students to employ those strategies and stick with them!

As always, don't hesitate to contact me if you have any questions, comments, or concerns.

## Staff Highlight

The newest addition to RVGS is Terri Janiga. She has joined the RVGS staff as the Community Outreach Coordinator. Terri got involved at the Governor's School as the parent of a RVGS student. After her daughter graduated in 2018, she decided she wanted to stay involved and joined the RVGS team in an official role. You will see her around the school quite a bit covering the students' daily activities, accomplishments and even some off-campus excursions. Make sure to contact her if you have any ideas that you would like to see highlighted in the newsletter or on Facebook. She can be contacted at [tjaniga@rcps.info](mailto:tjaniga@rcps.info).



# Spotlight on Student Summer STEM Activities

**Dylan Tran**-attended a residential academy at the NASA Langley Research Center and learned about mission design.

**Claire Wei**-completed a computer programming class at Duke TIP

**Henry Holbrook** [pictured at center] attended an SRGS internship at NASA Langley, developing an Artificial Neural Network for detection of UAVs. Also attended VASTS

**London Page**-won bronze medal in the National ACT-SO competition. Shadowed at Physics Associates

**Jasmine Walker**-Inside TREES at Virginia Tech

**Ella Higgins**-internship at FBRI studying vasculature of embryonic mice brains

**Shannon Filer**-participated in the Virginia Space Coast Scholars Summer Academy working at NASA Wallops Flight Facility.

**Sara Drewry**- worked as IT intern for RCPS

**Cynthia Lin**-attended BLAST UVA, a NASA sponsored camp to explore different STEM areas

**Erin Wienke**-worked at the Carilion labs with mentor Dr. Rao

**Madison Brown**-attended Inside TREES at Virginia Tech and BLAST at UVA



**Tate Berenbaum**-went to the V.A. in Portland and started developing an app to help treat tinnitus in Veterans

**Cole Blanton**-conducted research at the Carilion labs on the damaging effects of UV radiation on the DNA of bacteria.

**Holly Acker**-worked at the Center for Transformative Research on Health Behaviors and helped with a study focused on

preventing diabetes in pre-diabetic patients.

**Harrison Bui**- attended the Virginia Earth Systems Science Scholars Summer Academy designing a mission to study ocean acidification.

**Elisabeth Taylor**-internship at Virginia Department of Environmental Quality

**Jonah Vanke**-internship at NASA Langley and worked at FBRI

**Charlie Murphy**-I went to a summer web design internship at Black Dog Salvage

**Maggie Parkhurst**-attended USNA Summer STEM program

**Lauren Frampton**-attended the University of Charleston in WV for pharmacy camp

**Kevin Shang**-completed Neurosurf at FBRI

**Nathalie Lemon**-completed research at FBRI at VT studying pericytes in embryonic mice brains

**Murphy Johnson**-internship at Jefferson College of Health Sciences under Dr. Mark Frazier

**Maddie Taylor**-internship at Virginia Department of Environmental Quality.

**Uyen Tran**-worked as a research lab assistant at Virginia Tech studying parasite plant biology.

**Parker Neal**- completed an internship in IT for RCPS

## Learning in the Environment

Our AP Environmental Science students have been getting some hands on experiences while hearing from experts in the field. Jim Hosch (RVGS class of 2001) visited recently from Clean Valley Council to provide a guest lecture on groundwater. Students had some hands-on learning during a recent field trip to Murray Run in Fishburn Park, testing water quality and collecting macroinvertebrates to determine population diversity. More recently, Scott McDowell visited from VDOT's wetland permitting office to discuss the Clean Water Act and other environmental law and regulations. If all this activity wasn't enough, the students are taking a canoe trip down the James River with the Chesapeake Bay Foundation soon. Data collected during this field experience will be contrasted with the Murray Run data in terms of water quality and ecological community.



# RVGS Teachers' Summer STEM

**Matthew Browning** I was able to shadow graduate students in Dr. Whitehead's lab at Virginia Tech. While I was there, we worked measured total phenolics of part organs in the *Physalis* genus. Phenolics have been shown to increase antioxidants, to have anti-cancer properties, and to even impact the taste in many plant crops and fruits (Dai & Mumper, 2010). Since they also play a role in defending against pests and pathogens, theoretically if we could increase the levels of phenolics in our fruit and vegetables, we could have a product that is both better-defended (i.e. reducing need of pesticides) and produce higher nutritional value.



**Joanne Villers** I spent a week in the Peruvian Amazon. We took a three hour boat ride on the Amazon River to reach the ecolodge. While we were there we took hikes and explored by boat to enjoy the biodiversity. We spent a day hiking around the "high ground" looking for poison dart frogs. We saw one small frog and some tadpoles. The tadpoles were in a "trap" a scientist set up to study them. We saw several species of monkeys, several species of birds, caiman, anaconda, tamandua, and pink dolphins.

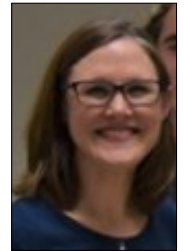


**Joanne Villers and Steve Smith** We spent a morning with Richard Keithley at Roanoke College learning about GC-MS (gas chromatography-mass spectrometry). RVGS is upgrading our gas chromatograph this year to increase its applications and capability.

**Mark Levy and Steve Smith** We attended a three day Nanoscience Professional Development at Virginia Tech this summer. We interacted with educators from across the state and learned about nanoscience techniques and concepts. There were many lab experiences and hands-on experiences with imaging and analysis equipment in the NanoEarth labs.



**Melissa Fisher** I attended a workshop on using Augmented Reality in the classroom. Augmented Reality (AR) is a new wave of technology that is working its way into classrooms. This workshop allowed me to see how AR can be incorporated into a wide variety of lessons across the K-12 grade spectrum. I had the opportunity to try multiple apps and tools to enrich the AR experience. For example, using an app, called Quiver, I was able to explore an AR model of a cell. Using a different app, called Merge, combined with its special cube, I explored a model of our solar system and learned more about each planet. Students in my Multivariable Calculus class will have the opportunity to use AR in my class this year as we study functions of several variables. RVGS purchased a class set of iPads this year to facilitate the use of AR activities in our classes.



## SHELLY STEM CHALLENGE

The Shelly STEM challenge is scheduled to take place on October 19th. The specific challenge problem will be presented the morning of the event. Engineers from Appalachian Power Company - our industry partner for this year's Shelly Challenge - collaborated with RVGS staff to develop an objective that incorporates engineering, electricity, and mathematical modeling. Specialized skills in these areas aren't necessary to compete - ingenuity, teamwork, and planning will be just as valuable as content knowledge.

Students will be assembled into teams to solve the Challenge using the information and resources provided on site. Groups will present their solutions to Appalachian Power Company employees and will be evaluated based on quantitative effectiveness, feasibility, design, and presentation. Top performing teams will be recognized at the awards assembly. The Roanoke Valley Governor's School is pleased to invite students from other Governor's Schools to participate in this year's Shelly Challenge. Student teams will be randomly assorted to allow stu-

dents from different schools to work together.

The Shelly STEM challenge is dedicated to the memory of Dr. Richard Shelly. Dr. Shelly was the founding Director of the Roanoke Valley Governor's School. His vision for the school has carried through three decades to continue to provide a unique learning environment for gifted students in the areas of Science, Mathematics, and Technology.

## Look Who's Visiting RVGS

The beginning of the school year has been a busy time at RVGS with many colleges dropping by. Students have had the opportunity to meet with representatives from the **University of Virginia, Virginia Tech, Radford, Christopher Newport and the University of Chicago**. Officers from the Navy also stopped by to discuss the **Naval Academy** and the nuclear propulsion training program.



## ACR's Day at Virginia Tech



Mr. Smith's ACR class recently took a field trip to Virginia Tech. First stop was the Virginia Tech "Smart Road" the road consists of 2.2 miles of test track equipped with lighting and weather manipulating equipment. The track also includes 3 bridges and an area to simulate a city landscape. Construction is underway on an expansion for a "country" road. Students then travelled to Goodwin Hall to learn about the newest in technology in 3D printing. Researchers are currently working on building models made of two different polymer materials. Next stop was the ICTAS lab. Here researchers are working on creating the new polymers needed for the 3D printing lab. Polymers include those used for the military on fighter jets and hydrogels used in surgery. The last stop of the day was to NanoEarth where students learned that "Size Does Matter". Students were able to experiment on gold nanoparticles. The particles were then put under scanning and transmitting microscopes allowing the students to visualize the particles on the atomic level.