VIRGINIA
TECHNOLOGY AND ENGINEERING
EDUCATION ASSOCIATION

TECHNOLOGIZE

Combined Winter/ Spring 2022 EDITION

Virginia Represented at the ITEEA International Conference

Many members of the Virginia Technology and Engineering Education Association (VTEEA) attended the International Technology and Engineering Educators Association's International Conference that was held in Orlando, FL from March 9th to 12th. These professionals represented our association by participating in the President's Roundtable meeting, Governance session, visiting the world's largest technology and engineering education trade exhibition, and attending a variety of professional development workshops designed for technology and engineering teachers.

***Courtney Rodgers**, **Tim Vaughan**, and **Wanda Hulse** were recognized for the Teacher Excellence Award from our association.*

***Virginia Hillsboro Charter Academy**, **Col. Fred Cherry Middle School**, **James W. Robinson Secondary School** were honored for their technology and engineering education Program Excellence.*

***Virginia was the only state that had all 3 winners (elementary, middle, and high) identified for POY and TOY.** Dr. Ray Wu-Rorrer and Deb Shapiro (ITEEA Affiliate Representatives) coordinated the association's work in the past year with ITEEA assisting in the development of membership recruitment responsibilities, public information, communications, and activities requiring governmental action of both groups. This year is unique in that the President-Elect (Deb Shapiro, DTE), President (Dr. Virginia Jones, DTE), and Immediate Past President (Dr. Phil Reed, DTE) are all from Virginia. George Bishop also serves on the ITEEA Board of Directors as the Region 1 Director.*

Comments heard during the conference included seeing a lot fewer vendors. That may have been due to the high cost of renting a space. The conference hotel breakfast buffet was a minimum of $30. This was a bit steep for those working on a per diem basis. Overall the resort center was very nice. Many of us spent a bit of time near the pool in the warm Florida weather.

The field trip to NASA was definitely a highlight and opportunity to learn from viewing actual artifacts.

On the last day the weather turned bad with tornado warning all around Orlando with snow and ice back in northern Virginia. The Frederick County teachers' flight was canceled that Saturday morning with the next available one into the following week. They made the decision to rent a vehicle and drive the 17 1/2 hours back. Upon arriving at Reagan National one of the county cars would not start so they crunched together a bit more to get everyone back to personal cars.

Even after the news of George Wilcox passing away was widespread, we want to recognize the volunteer work he did to maintain our organization. The Children's Engineering was dear to his heart and it rapidly grew with his assistance. George provided leadership and support for Technology and Engineering Education for 47 years. You would not know of many of his accomplishments as George was humble and quick to praise others.

One of our favorite photos of George

If you have yet to register for the VTEEA summer conference, then READ on. Just click **Conference Information** on www.vteea.org Continue clicking to get to the Form. Please fill out the form to give us a better count. Simply close the form without making payment and get back to us later

Government Relations Committee Report

Reported by Jim Egenrieder

Ms. Aimee Rogstad Guinier has been named Secretary of Education. She is a recognized advocate for the use of data in education policy.

Ms. Jillian Balow has been named State Superintendent. She was serving as the elected Superintendent of Public Education in Wyoming, and as an advocate for Computer Science for all students.

Ms. Elizabeth Shultz, formerly with the Department of Education has been named Assistant Superintendent. She has been a prominent advocate for parental involvement in local school boards.

A new policy statement will be created for Public and Private Charters to ensure CTE programs are considered. Bills we're watching (evolving rapidly):

- *Public Policy presentation slides are here -* ***bit.ly/Jan2022-policy-slides***
- *Bills we're monitoring (hyperlinked lists) -* ***bit.ly/VA-Leg-firstday***
- *Bill Summaries -* ***bit.ly/2022-bill-summaries***
- *All bills (as of 01-11-2022) -* ***bit.ly/VA-ACTE-Jan2022***

Among many: HB 340 - LINK - "...advanced coursework in career and technical education in lieu of world language courses or any other required course that the Board deems appropriate." Explicitly mentions robotics.

***Virginia ACTE Live continued in 2022** with multiple zoom meetings.*

Regional TSA Fairs are Completed!

The Valley Regional Fair was hosted by Stuart's Draft High School with good attendance. Kristin Guthrie, advisor at James Wood High took the photo above to show the sea of blue shirts. It was such a joy to be able to meet in person

New officers were installed and all positions were filled.
Jerry Ridgeway is retiring at the end of the next school year. Since he has been organizing the regional officers and for so long, a lot of talk was made to hear of future plans. Yes, a succession line has been established with Mara and Stoudt and Matt Haskins taking on some of the duties

BJ Scott reported that 4 regions held fairs on the same Saturday and one of the regions did not have a President in office so he was rather busy.

***Technopshere** was held in Hampton, VA again. Student cost $95 to enter but almost all of the meals are now included in the price. B.J. Scott and his host of volunteers produced an organized event once again.*

National TSA Conference

The 2022 National TSA Conference theme is "Discover Your Journey" and will be held at the Gaylord Texan Resort & Convention Center in Dallas1501 Gaylord Trail **Dallas, TX.** Dates are June 26-30th.

Your association is seeking applicants for the VTEEA Executive Secretary/Treasurer position.

The (paid) position requires a four year commitment (August 1, 2022 to August 31, 2026). The Executive Secretary/Treasurer maintains records of membership and manages the fiscal affairs of the Association under the direction of the President and the Board of Directors.

Interested applicants must email the Executive Committee at vteea1958@gmail.com. In your email, provide your phone number and mailing address. Also, include a brief description of your financial management experience.

The Frederick County Conference Team is excited to show you historic Winchester and innovative technology! Come see what they have to offer! Pre-conference workshops include SeaPerch, Engineering Framework from ASEE for teachers with high school engineering courses, New Teacher Orientation, and TSA.

***The call for presenters can be found on the VTEEA.org site.** The last day of the conference will be industry tours. Over all, it will be a great conference! We hope to record each session. There will be exhibitors and awards! Plan to attend July 26-28, 2022 and see old friends and make new ones*

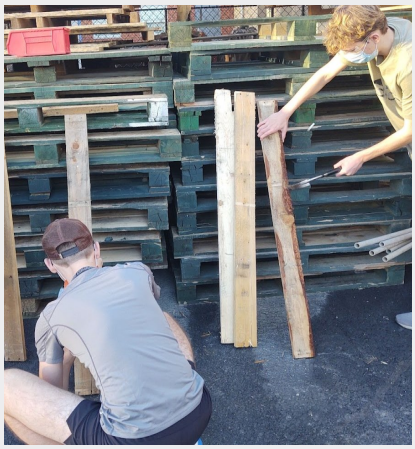
VTEEA
2022 SUMMER CONFERENCE
FREDERICK COUNTY
JULY 26-28
MANUFACTURING OUR FUTURE

Planters & Pallets Project

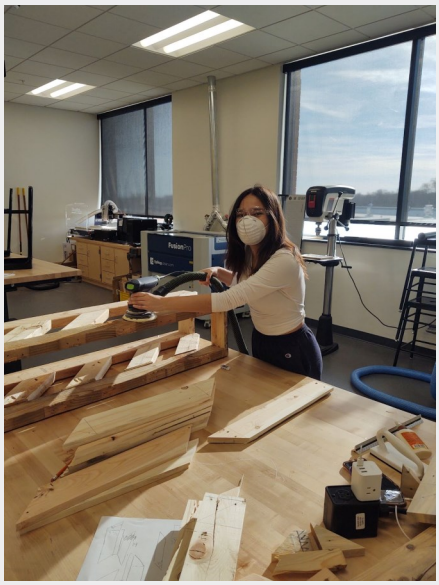
By Dr. Ray Wu-Rorrer

SUSTAINABILITY IN ACTION: PLANTERS AND PALLETS PROJECT

The "Planters and Pallets Project" started with a group of educators at Mary Ellen Henderson Middle School (MEH) and Meridian High School (MHS) submitting a grant proposal during the 2021-2022 school year seeking support for the installation of planters throughout both school buildings. It was determined that an assortment of containers such as wood rectangular planter boxes (12", 18" and 36" high x 4' long x 1' deep), square columnar containers, round containers and square containers be placed throughout both schools with an emphasis on high traffic areas such as the cafeteria and common areas . The wood rectangular planter boxes are being manufactured by the MHS Design classes out of reclaimed pallet wood. They will be stained (pictured) or painted Red or Black (MHS) and Green, Blue, or Gray (MEHMS) to reflect the school colors. The self-watering square and circular planters used were all made of recycled rubber tires.



The students between the two schools involved in the project are benefiting from the project through the application of the learning/experience/readiness model. Examples include plant propagation taking place in the MHS Environmental Science classes and the MEHMS Sustainable Design and Engineering classes, plant maintenance (watering, pruning, cleaning, etc.) by the Environmental Science class (MHS) and the Village program students (MEH) on a weekly basis. Both of these programs support the growth and development of special needs students.



This project focuses on multiple sustainability initiatives such as on interiorscaping, urban gardening, air quality, horticultural therapy, upcycling, etc. It also provides real-world experiences for the students involved. The MHS design classes converted used pallets into usable wood planter boxes after the creation of digital designs, the planing of the rough wood pallet pieces, fabrication of the boxes, and the exterior painting prior to installation. Students in the Environmental Science (MHS) classes, Design (MHS) classes, the Village Program (MEHMS), and the Sustainable Design, Engineering, and Energy (MEH/MHS) classes all worked to set up planters and place them throughout the schools.

The innovative, cross-curricular approach includes the Design class creating digital designs and completing the manufacturing of the planters; the environmental science propagating plant materials and participating in hands-on maintenance applications; the sustainable design, engineering, and energy propagating plant materials and the Village Program gaining plant maintenance experience and life skills.

Team/VTEEA members include Dr. Ray Wu-Rorrer, Carey Pollack, Kenny George, and Steve Knight. For more information, contact Dr. Ray Wu-Rorrer at wurorrerr@fccps.org.

Focus on Us!

Submitted by Ron Vickers

Sarah Gerrol is currently teaching at Andrew Lewis Middle School in Salem, VA. She was hired for the Salem High School position and asked to transfer to the middle school when an opening came up. It took five years but she did enjoy helping high school students with career choices.

Sarah is married to Scott and they have a 12 year son. She is in her 20 continuous year of teaching technology.

Her current teaching classes are: Architecture and Engineering- which is a high school credit class at the middle school, Robotics, also a high school credit class, Introduction to Computer Science, also a high school credit class for eighth graders, Technology Systems in 7th Grade and Introduction to Technology - 6 week exploratory class for 6th Grade

Unfortunately, her high school partner (Randy Brinkley) passed away with Covid this year. They were unable to find someone to hire in the middle of the year. So... I am helping the long term sub prepare curriculum and projects for them right now. This is a crazy time!

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Top 6 Things I love:

- a creative space for learning and discovery!
- Project Based Learning! I love it! I try to develop authentic projects in all classes that cover the standards for each class.
- Seeing the students get excited about all technologies!
- Working with other teachers on collaborative projects
- Community Involvement
- Documentation and Reflection of earning! My favorite tool is a digital portfolio!

Examples of my classroom, designed and put together by me to enhance creativity for students. I even helped with installing the TV screens around the room so I could project with my teaching computer.

- Podcasting and YouTube Station
- Equipment storage
- Project Storage
- 3D Printer shelves and equipment

A few examples of projects completed in class! I just picked a few of my favorites!

- 3D Printing, CNC Router Projects, Guitar Project
- Numerous Design Challenges

Collaborative Projects

- National Geographic Grant - Collaborative endeavor with the Geography Teacher at our school.
  - We wrote a grant, “Beyond the Walls” focusing on technology, mapping, and the environment. We are completing inquiry based projects with the students.
  - We have taken our students on numerous hikes and used many technologies to document our adventures

- The Business Teacher and I developed a cross curricular curriculum to incorporate Make it your business and manufacturing. Students create a business, make the product in a manufacturing setting, then sell the product at the local farmers market.
- I work with English teachers to develop STEM activities for the elementary students. They create a book that goes with the STEM lesson my students develop and we take the middle school students to teach the elementary kids.

Community involvement

- Mrs. Sarah Gerrol's Technology and Engineering Education Classes (makerfaire.com)
- Farmers Market - Collaborative Project and Community Involvement
- Numerous Service Projects with elementary schools and nursing homes in the community
- City Planner, Field Trips in the Community, Guest Speakers

What’s Happening Around the State?

By Ron Vickers

None of the regions have reported any professional development opportunities since last reported. If your county or even your individual school is planning an event that other teachers can benefit from, please let us know. With a long enough lead time, this newsletter may help spread the word and increase your attendance.

Comments and suggestions are welcome! Send me a note if you see any errors. Ron Vickers, Editor

vickersr@fcpsk12.net or text 540-860-2807

PRE-CONFERENCE WORKSHOPS, JULY 25

We hope you are as excited as we are to be back in person at the Summer VTEEA annual conference! This year we have 4 amazing opportunities for you to embrace your love of lifelong learning in technology and engineering education!

First off, let's dive into the depths of engineering with SEAPerch! SeaPerch is an integrated STEM education program that engages students and educators through a real-world engineering design project oriented around building an underwater remotely-operated vehicle called a SeaPerch. In this one day workshop, attendees will be introduced to the SeaPerch competitive obstacles and the design notebook requirement. Attendees will design and construct an ROV. Lesson plans, cost saving ideas and project organization ideas will be shared so that SeaPerch may be implemented in the classroom.

Next up, if you build it they will come. Every good structure needs good framing. In this full day session, participants will be introduced to the structure of the p12 Framework for engineering learning in a minds-on hands-on experience. Participants build a model smart house using microbits and apply the habits, practices and knowledge of the P12 Framework for engineering learning to enhance instruction!

New to Technology and Engineering? We have your back! Come to this pre-conference session to learn about what today's technology and engineering education is, what course pathways there are, how to maintain your lab and keep it safe. Lastly, participate in a hands-on engineering-in-action portion of the day!

Last but not least, TSA! This session provides everything you need to know about how to have a successful TSA chapter! Some highlights include managing the application process, managing dates and events, how to prepare for competitive events, the virtual judge system, and having a more productive chapter. A popular and important pre-conference session!

Go to VTEEA.org to register.

Amy Sabarre. VTEEA President-Elect

A Cool Place to Work!

Arlington Public Schools is in Northern Virginia on 26 square miles that was to be part of the District of Columbia. If you look at a map Arlington would have made the District of Columbia a diamond shape with the Potomac River flowing through the district. There are three comprehensive High Schools and four high school programs within the district, one Career Center which houses Arlington Tech, the county's Governor's STEM Academy. In addition, there are six middle schools, and 24 elementary schools. We have Technology Education classes in all middle and high schools. At the high school level, we teach PLTW engineering classes, IB design tech classes, computer assisted drafting classes, construction and energy and sustainability classes, some graphic and game design classes as well. At the middle school level, we teach the three middle school courses and the robotics course. We have experienced teaching staff that work well together enhancing our curriculum materials and activities over the various levels. The CTE office in collaboration with the teachers continues to look at emerging technologies which will enhance the programs to keep students on the cutting edge of technology. Over the last two years we have hired a CTE teacher specialist that works directly with teachers to enhance their teaching practices.

Cigar Box Guitar concert preparation.

Board Game Design regional winners from W&L High

The goal is to have quality CTE programs across all schools in the county. We are continuing to grow in enrollment and looking for highly motivated technology education teachers to join our team.

If you are interested in employment , Kris Martini, CTE Director, would be glad to speak with you. He is best contacted by email **kris.martini@apsva.us**

Shenandoah Valley Electric Vehicle Grand Prix

By Ron Vickers

Last Saturday, May 21st, the very first grand prix in the valley was held at the Shenandoah Valley Electric Cooperative with ten schools participating.. This is a competition for high school teams held annually since 2013 in the DC area. Students build and race a single person, 3-wheeled electric vehicle. Sponsored by Global IEEE.org, new teams acquire a kit that contains all the parts needed to build a car. A detailed assembly manual and technical support is supplied by Global EEE staff and volunteers.

I first learned of the event via an email about an organizational meeting back in November. The local Electric Co-op provided grants for 1/2 the cost of the kit of $2,350 with teams needing to fundraise the rest of the cost. While at the meeting I asked two question: 1. Would this take over my life? With an answer of there was plenty of time to assemble the kit and if I choose the group of students to work with, it would not be a problem. My second question was., " What percentage of teams that got into the process was not able to produce a working vehicle? The answer was zero as volunteers would be available to help as much as needed with any technical problems. I found this to be true!

I signed a letter of intent with a supportive letter from my principal and was awarded the grant with kit pick up in late January. I had agreed to enter the race for two years. I introduced the project to my engineering and electronics students. It soon became obvious which kids really got into the process and we formed a team that worked some during class time, study hall, or after school.

My division media team decided to make a series of videos showing our progress during the build and you can find this on Facebook by searching ***fcps media spotlight*** *and click posts to see a three part series. We also shared what we did with the hashtag* ***#shsevgp*** *on Instagram and Facebook.*

The fact that there were several unknowns in getting it all together kept me busy. Global EEE offered serval possible awards from fastest Qualifying lap, Best use of 3D printing, Best Event/Team Promotion, Best Graphics, Best Photo. The graphics teacher in my school were a fantastic help on our vehicle. A safety inspection was held the week

before the race to allow us to make any changes to comply with all the rules.

Race day came on a hot 90 degree day, clear sky and everyone gathered for the dogleg course at the power company's parking lot and maintenance buildings. It was very well organized and our students were able to practice, have a free pizza lunch and enjoy watching the vehicle make laps. As this is a grand prix, you were racing against the clock and not each other. With only one battery charge, the teams had to strategize on how best to use power. One did not want to run out of electricity at the end and watch cars complete more laps until the hour was up.

Stuarts Draft High won the overall race with 60 total laps*. Two Frederick County schools, James Wood High and Millbrook High each had 57 total laps to come in 2nd and 3rd place.*

Matt Brame, Technology Teacher at Millbrook sent me this quote from his student. Zach Malatt-Graduating Senior and Team Captain: "This was the best experience of my high school career".

Now that we have gone through a season, my students know so much more and are excited about how they can get the vehicle to perform better next year. The plan is to have the engineering class decide on an aspect of the vehicle to improve and reassemble the vehicle to make it better. BJ Scott hopes to make this competition happen throughout the state as a TSA event.

I was very fortunate to have my CTE Director and Assistant Superintendent make the hour drive to come watch the race . It's worth the effort, for sure.

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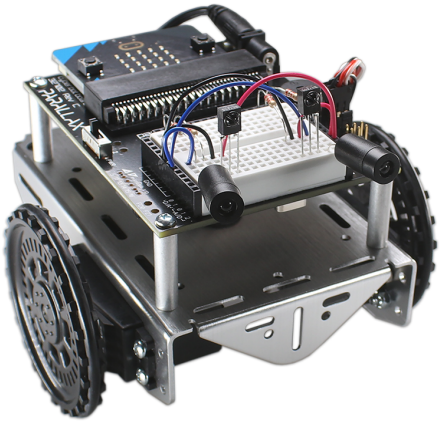

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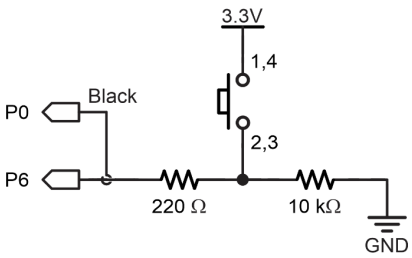

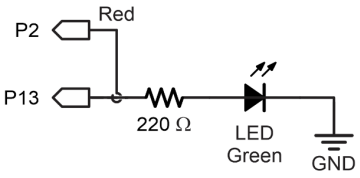

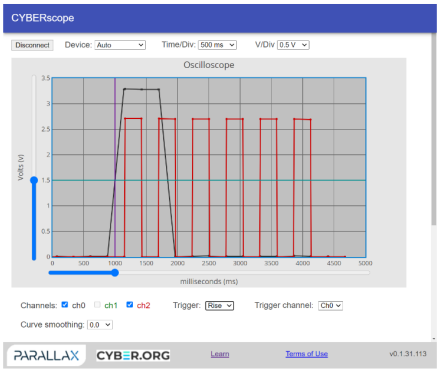

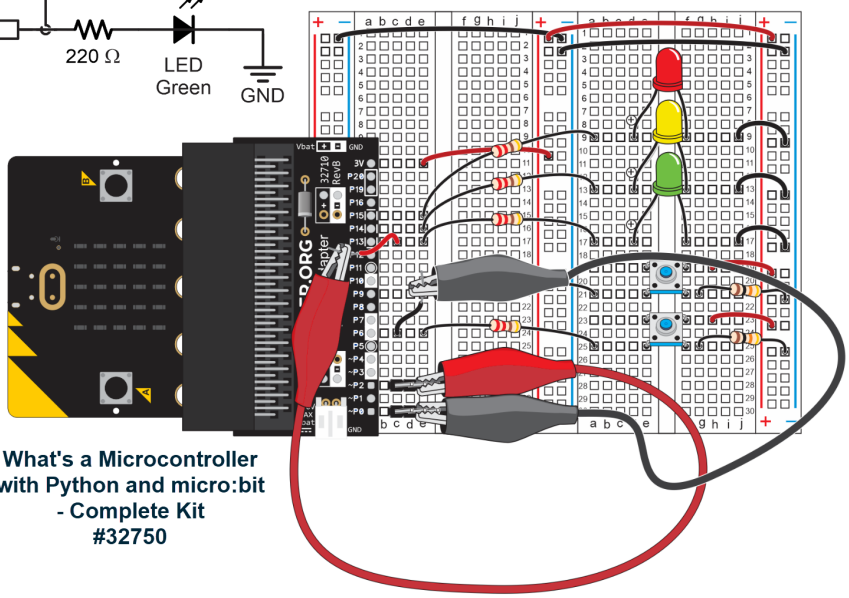

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