Fall/Winter Issue 2020

Director's Corner

Wesley Fondal, Jr., Executive Director



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I hope during this time of Covid19 that all is well. We have been very busy since the summer. During our shutdown and quarantine in the Spring, the staff worked hard to convert our Girls STEM-powered Girls Academy, first to an open summer academy and then a virtual summer academy. The conversion was a success. The staff came back in June to do last-minute preparation for the virtual summer academy, such as securing and preparing materials for parents to pick up for students to use during the summer academy. The students were very engaged, and staff really enjoyed the interaction. We used the summer virtual academy as a precursor to a possible Fall readjustment as school districts were looking at how to reopen schools.

STARBASE

As school districts began the school year, many decided to open up virtually amid the rising number of Covid19 cases. One county decided on parents opting for either face to face or virtual. None of the school districts were allowing field trips or outside personnel in school buildings. As you can see, this posed a problem for STARBASE ROBINS to carry on business as usual. Again, the staff did a wonderful job of coming up with an alternate plan. They went through the curriculum to come up with a 20-hour virtual curriculum, staged a STARBASE studio, gathered supplies per classroom to be delivered to the schools that were meeting face to face and a pre/post-test to measure our effectiveness. The students, teachers, and the staff have really enjoyed the interaction with the students via Zoom. We are excited to continue the STARBASE learning, however, we really missed the students in our building. We look forward to their return soon.

We have had to modify our STARBASE 2.0 Program as well. In light of Covid19, many school districts opted out of after school programs. We presented them with the option of having virtual afterschool clubs so that students could still have a sense of connection to the school. Six schools took us up on that option, and we have put together a Coding and Gaming curriculum for the students that applied to be in the STARBASE 2.0 Afterschool Program. The new curriculum is delivered by our new STARBASE 2.0 Coordinator, Yakira West, with the help of a couple of mentors and college student interns.

We are hopeful that we will be back to meeting and greeting the students in January. Along with hopefully receiving students back in the Spring, we are also preparing for the summer. We are collaborating with Mercer University's STEM Education Innovation Lab and the Georgia Association of Conservation Districts for hopefully an enriching Girls STEM Academy as well as with the Broward County JROTC STEM Camp for our STARBASE 3.0 Program.

We are always looking for volunteers to speak to our students and to serve as mentors for our STAR-BASE 2.0 program. Please let us know if you or someone you know would like to partner with us in meeting the STEM needs of our students.

Please remain safe, and we wish everyone Happy Holidays!

"Success is the good fortune that comes from aspiration, desperation, perspiration and inspiration." Evan Esar

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About STARBASE ROBINS

STARBASE ROBINS

offers a hands-on Science, Technology, Engineering, and Mathematics (S.T.E.M.) curriculum to students from local school systems as well as several area private schools. STARBASE ROBINS is a Department of Defense (DoD) educational program sponsored through a partnership with the Air Force Reserve Command (AFRC), the Museum of Aviation, and the Museum of Aviation Foundation, Inc. **STARBASE** ROBINS emphasizes the importance of goal -setting, teamwork, and communication in everyday life.

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STARBASE Participating Schools



The STARBASE ROBINS 5th Grade program is a fiveweek program housed at the Museum of Aviation. This program presently serves 23 elementary schools within the following four Middle Georgia counties: Bibb, Dooly, Houston, and Twiggs.

Bibb County

Alexander II Elementary School, Bernd Elementary School, Brookdale Elementary School, Bruce Elementary School, Hartley Elementary School, Heard Elementary School, Lane Elementary School, Springdale Elementary School, Union Elementary School, Veterans Elementary School, L H Williams Elementary and Vineville Elementary School

> **Dooly County** Dooly County Elementary School

Houston County

Centerville Elementary School, Eagle Springs Elementary School, Langston Elementary School, Lindsey Elementary School, Miller Elementary School, Northside Elementary School, Shirley Hills Elementary School, Qual Run Elementary School Russell Elementary School, Sacred Heart Catholic School, Westfield Elementary School, and Westfield Elementary School

> *Twiggs County* Jeffersonville Elementary School



The STARBASE 2.0 After-School program is held one day a week for 12-13 weeks each academic semester. The STARBASE 2.0 program is currently held at 12 middle schools in the following four Middle Georgia counties: Bibb, Houston, Peach, and Twiggs.

Bibb County

Appling Middle School, Ballard Hudson Middle School and Weaver Middle School

Houston County

Feagin Mill Middle School, Huntington Middle School, Northside Middle School, Perry Middle School, Thomson Middle School, Warner Robins Middle School, and Sacred Heart Catholic School

Peach County Byron Middle School and Fort Valley Middle School

> *Twiggs County* Twiggs County Middle School



VIRTUAL STARBASE ROBINS 2.0 CLUB Yakira West

Despite everything that is happening with COVID 19 and the school system trying to decide what was going to happen with classes put the STARBASE 2.0 club in a little predicament. We were so accustomed to going to the schools to interact with the students and be hands-on with all the activities. We had to determine if we could provide instruction and how we would provide the instruction. We wanted to offer the students the same great experience they had in the past.

Each year the STARBASE 2.0 club presents STEM activities to 12 schools but this year the program looks a little different. The club now virtually hosts 7 middle schools (Appling, Ballard Hudson, Byron, Fort Valley, Sacred Heart, Twiggs, and Weaver). The club still meets one day a week after from 4:30-6:30 (times vary) and the students are learning how to code and make their own video games using programs like Python, HTML, JavaScript, and Cascading Style Sheets (CSS). The club will run from October 5th—December 9th. Learning options for the students have not changed, it has only made us more creative in how we present the information. I am amazed by the sheer knowledge of the youth of today. Our children are embracing technologies that far exceeds anything we could have imagined during our time. As an Information Technology professional, it is my responsibility to help inform the next generation of the inherent flaws and dangers that they may encounter while going about their daily lives. We must be ambassadors of goodwill and teach real-life lessons that will empower them to make educated decisions on how to safely use the technology they rely on daily.

But how do you teach kids these lessons without coming off like an exam guide? STARBASE Robins 2.0 has created another new and fresh curriculum plan for the upcoming semester. We have planned for the students to learn Cybersecurity. This will consist of key lessons and concepts along with games & scenarios that will teach kids at an early age about how the internet works. This would be a step towards keeping them safe as they learn about technology and the potential STEM careers. By teaching our children cybersecurity basics including both the why and how we can prepare them for the risks they may face and what to do when they encounter them. Plus, kids who grow up with a strong foundation in these practices can even begin to fill the cybersecurity skills shortage and help keep everyone safe.



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Changing Our Approach to Instruction

Audra Hubbard

As the beginning of the school year loomed questions remained as to whether we would be able to access any schools to teach our program. School systems still were not sure if they would be holding in-person classes or if they would be totally virtual. As a team, we discussed different ways we could offer instruction and came up with a plan for an in person, at the school, and virtual instruction option. As it turned out only one of our regular school systems had in-person classes when school started. They still wanted their students to participate in STARBASE, but they were not allowed to travel, nor were we allowed to come to the school. So, the virtual option was our course of action. We still wanted to provide hands-on experiences, high-quality instruction, and have the ability to get to know the students.

We decided the lessons that allowed us to provide as many hands-on experiences without sending too many supplies would be: Newton's Laws with Straw Rockets, Metric Measurement, Engineering Design Process a Variation of our Eggbert Launch, Characteristic Properties, Bernoulli's Principle, Coding, and have Career Guide Visit. Each week we provide instruction to one school and up to four classes at a time. On Monday, each class receives a bin of materials we will be using for the rest of the week. The bins are picked back up on Friday and the items are sanitized before the next set of classes. We Zoom in from 9-12 Tuesday-Friday and have the classroom teachers' complete launches after lunch on Tuesday and Wednesday. In the bin, teachers receive a webcam that is set up for us to see as many of the students in the classroom as possible and they view us on Projection Boards in their room. On our end, we have a "studio" for instruction where one person is in charge of instruction, and one person assists with a second camera for experiment close-ups. Another person "drives" on a third computer. This person controls PowerPoints, videos, Spotlighting classrooms/ instruction, and allowing access to the Zoom meeting. We rotate jobs every day, so the students can interact with each instructor.

Before the assigned week of STARBASE classroom teachers meet with us via Zoom and send us class rosters. During the week the classroom teachers are very involved as they set up cameras and check the audio, pass out materials as needed each day, conduct some demonstrations for us, and lead the Straw Rocket and Eggbert Launches. None of this instruction would be possible without them. When students answer questions; they come up to the camera, tell us their name, then discuss their answer with us. We keep a copy of each class roster in front of us to keep names straight, but we still feel that we get to know the students in that short amount of time. From time to time classroom teachers do have to repeat what a student says because we cannot hear them clearly, but the students are doing a great job of speaking as clearly as possible.

Another problem arose with our new normal. Each fall we work with a cohort of teacher candidates from Fort Valley State University and have them teach a lesson to one of our classes, how could we help them meet the needed criteria if the students weren't here? As an alternative, the teacher candidates observed our new form of instruction either in person or virtually. They then took a STARBASE Lesson and made it into a recorded lesson that might be shareable as a resource for virtual students. Our goal is for the teacher candidates to learn how to change their normal instruction into something virtual; something most teachers had to learn on the fly this year. Virtual instruction is not going away, we try to improve ours a little more each week. We hope the teacher candidates and students gain ideas from us as we gain ideas from them.



Sound travels 4 times faster in water than it does through air.

Did You

Know

Butterflies taste food by standing on top of it. Their taste receptors are in their feet.



Why are Helium, Curium, and Barium the medical elements?

Because if you can't heal-ium or cure-ium, you bury-um.

What should you do when no one laughs at your science jokes?

Keep trying until you get a reaction.

FUN STEM Idea

What's at the end of the Density Rainbow?

Density Column Materials

You can use some or all of these liquids, depending on how many layers you want and which materials you have handy.

Honey

Corn syrup or pancake syrup

Liquid dishwashing soap

Water (can be colored with food coloring) Vegetable oil

Rubbing alcohol (can be colored with food coloring)

Lamp oil



Make the Density Column

Pour your heaviest liquid into the center of whatever container you are using to make your column.

Carefully pour the next liquid you are using down the side of the container. Continue adding liquids until you have completed your density column.

Make sure that there is an even layer of oil before you add the alcohol because if there is a break in that surface or if you pour the alcohol so that it dips below the oil layer into the water then the two liquids will mix.



When the pandemic first started, no one could have predicted how it would impact everyday life. With school closures, educators had to go to extraordinary measures to reach students virtually. Zoom has been one of the many platforms used to provide human interactions that we all so desperately need. People all over the world have implemented Zoom for teaching, job interviews, family/friend gatherings, weddings, and so much more. Zoom has proven to be the new normalcy in these unprecedented times.

With the anticipation of school starting up in August, we were all unsure how the school year would go. Would students attend school face to face, virtually, or both? How can we reach out to students and keep them engaged? We decided to revamp our curriculum to meet the needs of our students that signed up to attend virtually. Lessons and assessments were shortened, bins of materials were gathered and prepared, web cameras, LED lights, and microphones were purchased, but most importantly, masks and cleaning materials were purchased to keep us all safe. School teachers were able to meet with us beforehand via Zoom so we could all discuss the guidelines and expectations for the week.

Since August, we have taught seven schools, one per week and so far, things have been going well! As we are entering November, we have all been genuinely surprised and pleased with how well teaching via Zoom has been going. Zoom has allowed us to bring our STARBASE experience virtually to students with little setbacks. Students are actively par-

When the pandemic first started, no one ticipating, engaged, and still able to get step could have predicted how it would impact by step instruction and do hands-on experieveryday life. With school closures, educators ments that permit the lessons to be reinforced had to go to extraordinary measures to reach with real-life examples and experiences.

> No one is sure how long this pandemic will last but, Zoom has changed our perceptions about screen time. All screen time is not created equal, and it may not be for everyone but, anything that promotes social interaction is always beneficial.



Quiet on the Set

Demetria Smith



COVID 19 put a halt to production worldwide but that did not stop STARBASE Robins. The productions we create is not for Hollywood, but it is for the big screen. Even on a small scale, the production process can be expensive, unpredictable, and messy but always satisfying. Bright lights, camera, ready, action is becoming the new norm for us. Creating a production seems like an easy achievement when you sit back and think of all the tasks, but when you begin the process you realize that preparing requires nothing short of creativity, discussion, and teamwork from everyone.

In preparation for the semester, we purchased bins, cameras, microphones, LED lights, and speakers. Normally materials like Newton bags, straw rocket materials, rulers, scales, measuring tape, water balloons, and other materials for Eggbert launch and blow dryers are bought to welcome the students to the STARBASE classrooms. This year we gathered all the materials for the students and delivered the packed bins to each school for each week. The bins are delivered the Friday before the class starts along with the consent paperwork and the t-shirt forms. The bins are picked up at the end of the week and each bin with contents is thoroughly sanitized and then we prepare for the next class.

Five tips for a flawless production:

- * Be in the know—Know the schedule and be on time
- * Communicate—Practice and ask many questions
- * Organize- Set everything up the day before and test the equipment
- * Plan– Always have a backup plan
- * Always double-check everything



A Day in a Life of a Virtual Learner

Tammie White

This year the school year began by giving parents and students a choice of learning face to face alongside some peers that would attend school or distance learning. For some parents, the decision was easy because they were able to stay home with their learner or make the necessary arrangements for them to be a virtual learner. For other parents, the option to send their students to school amidst a pandemic was not an easy decision. For working parent Jessica C., the option was easy to have 10-year-old daughter Carmen stay at home. Jessica works overnight but, with the help of her mom, she knew Carmen would be in good hands. Carmen attends Parkwood Elementary and has access to her own laptop and iPad and internet service. Carmen says, "I do miss my friends at school but, I'm not ready to go back to school yet". "I like that we have a break during the morning and it's easier for me to do all of my work and have time for zoom games too".

Monday through Friday Carmen uses Google classroom, and she has an assigned teacher to help in any area she may trouble with. She is committed to 9 weeks for distance learning and each day she must log in at 8:30 am and actively participate in the class to be counted as present for the day.



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