



# Workshops

## Workshops #16

For Workshops #16, our STEM Educators, Wanda Allaire and Dr. Naomi Hampson, switched the groups they usually work with, continuing what they began in Workshops #15. Naomi taught the 3-6th grade Scholars about Digital and Analog Signals, and Wanda did experiments with the 7th and 8th grade Scholars on Cryptography and Cyber Security. High school Scholars had the opportunity to work with Dr. Brandon Mitchell (at right) from West Chester University of Pennsylvania, who used fascinating exercises to explore the Physics of Sound with them.



## Workshops #17

Dr. Hampson and Ms. Allaire collaborated for Workshops #17 to guide Scholars in Learning About Pressure and Buoyancy. They led Scholars in making Cartesian Divers, which they got to take home. They made Cartesian Divers by cutting the bulb part and some of the stem off of disposable pipettes and attaching a binder clip for weight. They then filled the pipettes until the diver would float just under the surface of some water and put the diver inside a filled water bottle with the cap on. Squeezing the water bottles increased the pressure causing the air in the pipette to compress, which created a vacuum that sucked in more water. This increased the weight of the diver, so it would sink. Once the extra pressure was removed from the bottle, the air would expand and force out the extra water, and the diver would rise to the surface again.



Ms. Allaire also showed Scholars her Buoyancy Compensation Vest which she wears for scuba diving and discussed the real-world implications of buoyancy and pressure.

## Workshops #18

For our 18th and final workshops, Scholars were able to enjoy each other's companionship and participate in fun and games. Activities included "The Marshmallow Challenge," in which Scholars competed to see which team could make the tallest freestanding structure using only tape, string, spaghetti, and a marshmallow on top. There was lots of laughter and treats to eat, and a fun time was had by all!

