



## AIR FORCE TECHNICAL APPLICATIONS CENTER

Office of Public Affairs \*\* 10989 S. Patrick Drive, Suite 4222  
Patrick Air Force Base, Florida 32925  
(321) 494-7688 \* DSN 854-7688 \* [aftac.pa@us.af.mil](mailto:aftac.pa@us.af.mil)

**FOR IMMEDIATE RELEASE**

Release 16-07-21/001  
July 21, 2016

### Nuke scientists mentor students at STEMiversity

*By Susan A. Romano, AFTAC Public Affairs*

**PATRICK AIR FORCE BASE, Fla.** – For the second year in a row, a team of scientists with the Air Force Technical Applications Center traveled to Milledgeville, Ga., June 20-21 to mentor high school students in science, technology, engineering and math (STEM).

First Lt. David Donndelinger, Tech. Sgt. Dustin Hoffman, Diana Velosa and Rose Day, all members of the nuclear treaty monitoring center, made the trip to STEMiversity, a non-profit organization on the grounds of the historic Central State Hospital Campus, to provide state-of-the-art, hands-on STEM training to underrepresented high schoolers.



The program gives students the opportunity to conduct forensic experiments using precision instruments in real-world laboratories with field professionals. AFTAC, the Department of Defense's sole nuclear treaty monitoring center, has been continuously looking for ways reach out to various communities, championing multiple programs and initiatives to emphasize the importance of STEM career fields.

A typical day at STEMiversity starts with classroom instruction. Mentors give oral presentations about the experiments the students will be working on, and go over safety procedures, observation reporting and report preparation. A question-and-answer session is then conducted, similar to a college lecture seminar. Once the Q&A is complete, the students are broken up into smaller groups with two to three mentors to oversee the experiments and lab work while the students get to perform their hands-on activities.

Hoffman, AFTAC's laboratory measurements flight chief, demonstrated the effects liquid nitrogen has on solids. "We took an ordinary cut flower and showed the students how quickly liquid nitrogen can freeze the petals," he said. "The students also learned about the special and physical properties of liquid nitrogen and how important it is to exercise extreme caution and safety cryogenics."

The AFTAC group also discussed how the treaty monitoring center applies STEM to its mission and what kind of scientific opportunities exists for those pursuing a career with the Air Force. They also explained how forensic science plays a significant role in how they monitor nuclear treaties.

-- more --

## 2-2-2 STEM

Velosa, a chemist at AFTAC's Ciambrone Radiochemistry Laboratory, taught the students how to use survey meters to detect radioactive objects. "The kids were really amazed just how much radioactivity exists in their everyday lives," she said. "We had the students suit up in protective gear and then had them take normal household items such as Brazil nuts, smoke detectors, granite and Fiestaware to gauge the trace amounts of radioactivity in each item. I think they really enjoyed it!"

Velosa's enthusiasm was echoed by her co-worker.



"We came to Georgia for two-day's worth of presentations, demonstrations and activities," said Donndelinger, AFTAC's tech room manager, "and we left with a huge sense of accomplishment. The students really seemed to enjoy learning about the STEM opportunities in the Air Force and experiencing hands-on activities involving radioactive sources."

"STEMiversity's Summer Forensics Academy is designed to train, educate and develop the future STEM workforce, which is something AFTAC is heavily invested in," said Day, AFTAC's human resources program manager. "Historically, STEM career fields have lacked diversity. Our involvement in programs such as STEMiversity gives us the opportunity to expose underserved segments of the community to various aspects of science and technology. It also allows our Airmen to serve as force multipliers and assists with our continuing recruiting efforts."

AFTAC's involvement with STEMiversity directly supports current Air Force diversity and inclusion initiatives outlined in the service's Diversity Strategic Roadmap – an action plan developed by Headquarters Air Force's Global Diversity Division at the Pentagon to provide guidance to Airmen on how to enhance institutional diversity in the Air Force and track its progress and success.

"We've now participated in STEMiversity for two years in a row," said Day. "I'm hoping this becomes an annual AFTAC tradition for years in the future."