

# A View Into the Future

## Forensic Academy for Students and Teachers (FAST)

### STEMiversity

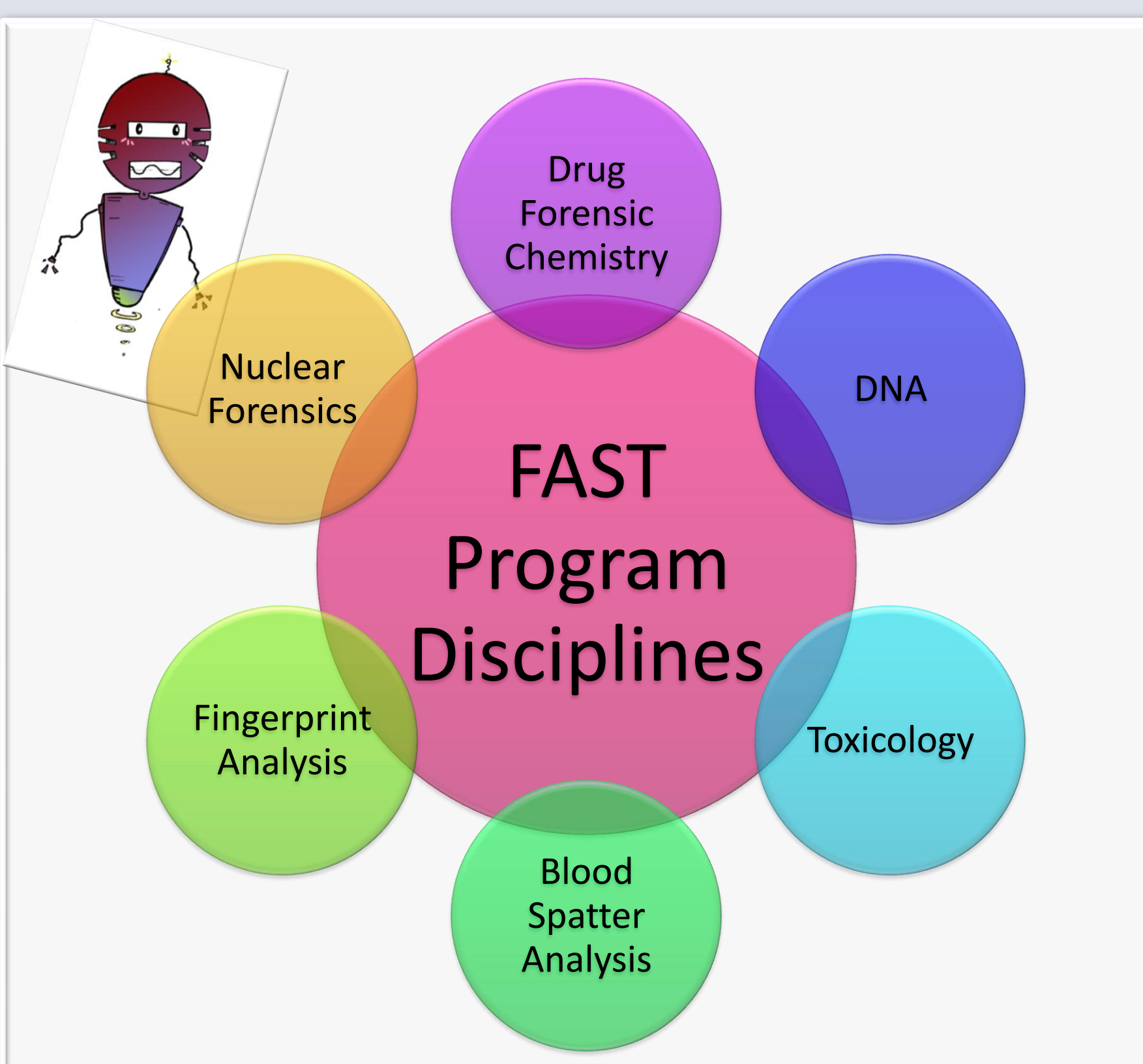
STEMiversity, a 501(c)3 was formed to address the shortage of students who pursue higher education and careers in the Science, Technology, Engineer, and Mathematics (STEM) fields. The mission of STEMiversity is to provide training and educational programs that encourage exploration, develop experiences, and provide necessary instruction for students and educators preparing for college and today's workforce opportunities.

STEMiversity is dedicated to providing access to training early in student learning; to encourage excitement in areas of study that have historically lacked diversity. The program is aimed to achieve inclusivity in the STEM fields.



### FAST PROGRAM

In partnership with Baldwin County Schools, Georgia Technical College, Georgia College Early College, National Institute of Standards and Technology and the Air Force Technical Applications Center, the Drug Enforcement Administration, and the Office of Forensic Science, the FAST program will target under-served and under-represented middle and high school students and teachers. The goal of the project is to use forensic, pharmaceutical, environmental, and space science to stimulate interest and prepare students for STEM fields. FAST will also equip teachers with the resources to better teach and train students.



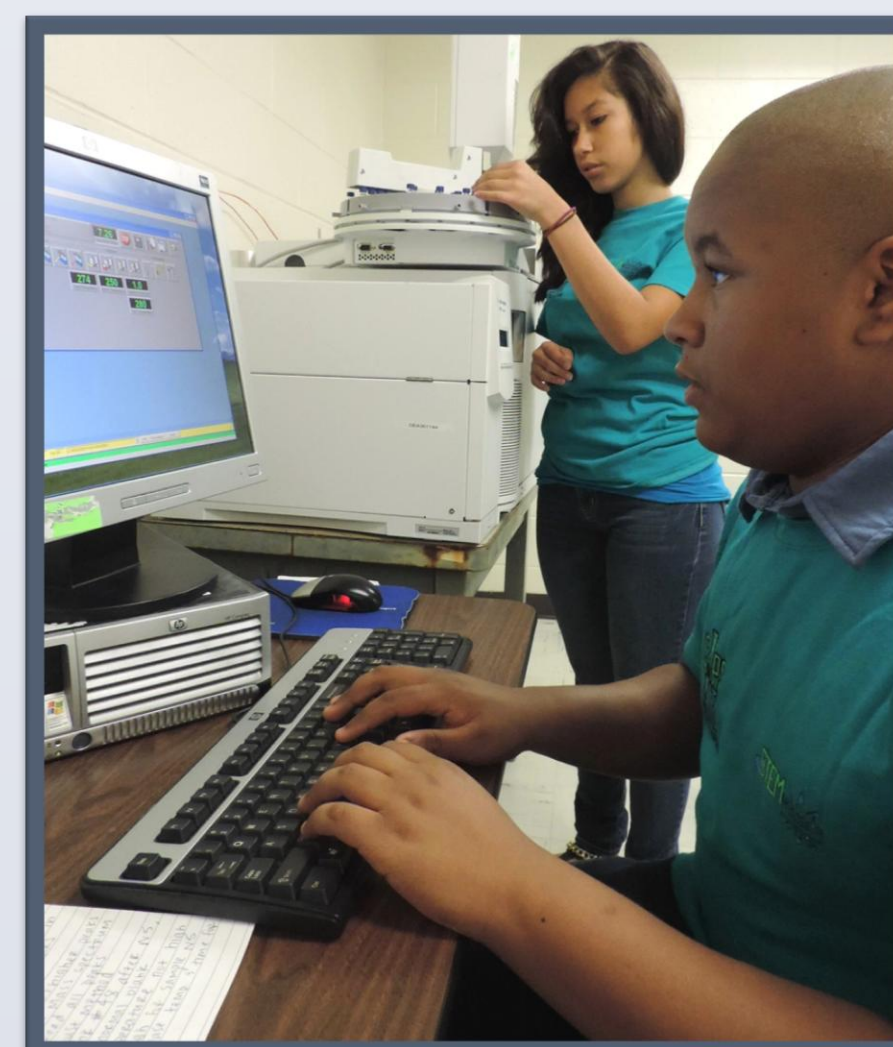
Students learn how forensics is used on the job.

### HANDS-ON LABORATORY TRAINING

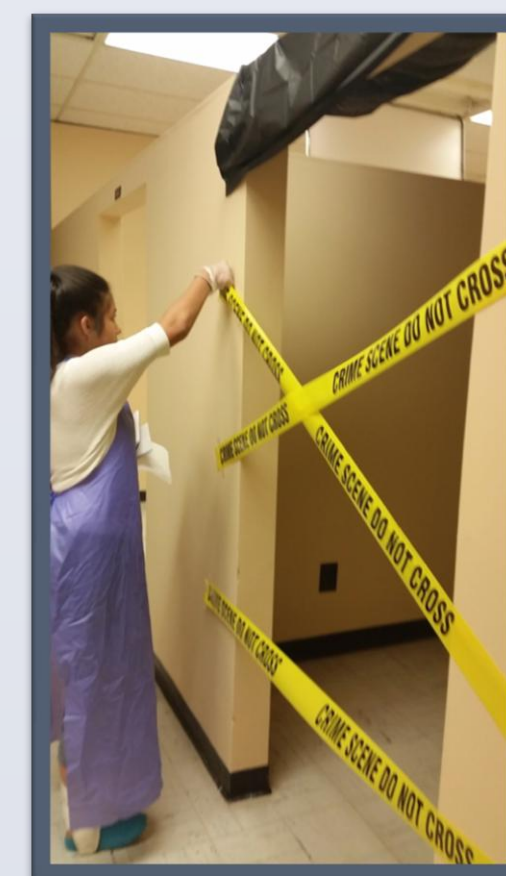
Students have the capacity to conduct laboratory exercises that will expose them to analytical instrumentation. Students get an opportunity to learn the theory and use of the instrumentation. Seminars Topics include:

- ∞ Separation techniques for drug samples
- ∞ Qualitative/Quantitative analysis- the definition and how each is used in drug analysis
- ∞ How does a GC/MS work to identify samples
- ∞ Infrared Spectroscopy and how is it used in forensics
- ∞ DNA, Toxicology, Fingerprinting

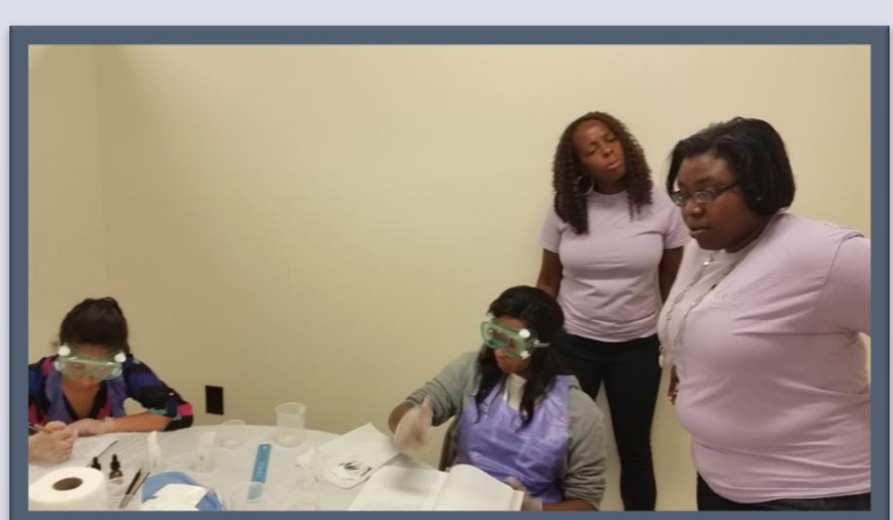
Students gain valuable knowledge and utilize analytical techniques they can use in forensic analysis and science fair projects. Students gain experience using analytical instrumentation used in drug forensic chemistry laboratories normally reserved for college students and professionals.



Students learning how to operate a gas chromatograph/mass spectrometer



Students conduct Crime Scene Investigations



NIST scientists teach DNA techniques to students



Drug field testing will be utilized for screening



Students learn drug field testing procedures

### SCIENCE TEACHERS WORKSHOPS (STW)

FAST offers professional development to science teachers consisting of lecture and theory with hands on demonstrations. The workshops offer forensic chemistry, qualitative/ quantitative, analysis, DNA, fingerprinting and chromatography. The program offers two STW's per semester.

- ∞ Drug Forensic Chemistry- include presumptive testing, separation techniques, drug classes and identification.
- ∞ Qualitative/Quantitative analysis- the definition and how each is used in drug analysis
- ∞ Chromatography – Separation techniques
- ∞ Infrared Spectroscopy – Identification techniques

Educators use this knowledge to deliver a more robust science curriculum to their students. The STWs are designed for teachers who do not have a science education degree.



Teachers receive training from experienced Forensic Scientist



Teachers learn in a laboratory environment



Teachers share best practices



Training includes hands on experiments



Teachers collaborate and share ideas

### URGENT NEED

The urgent need of STEMiversity is to improve and develop poorly supported science laboratories in the public and charter schools. STEMiversity is an advance technical laboratory that will address this need by offering hands on training utilizing analytical instrumentation.



Pictured left to right: Dr. Noris Price, Ella Davis, Darrell Davis, Dana Davis and Mike Couch pose in a laboratory on Central Georgia Technical College campus, which will be the new home for STEMiversity thanks to a grant from the National Institute of Standards and Technology.

### NIST SUPPORT



The National Institute of Standards and Technology has supported the Summer Science Academy for the last two years. Starting in the fall of 2016, STEMiversity was awarded a three-year grant that will support the FAST Program.

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