

Workshops

by EDVOTEK®

NSTA
Charlotte, NC
Thurs. Nov. 29, 2018

■ **Martian Genetics: A DNA and Electrophoresis Exploration**

Thursday, 8:00 AM - 9:00 AM • Charlotte Convention Center, 207 B/C

Explore genetics with our "out of this world" workshop! Imagine being the first scientist to explore Mars and discovering extraterrestrials. How would you use biotechnology to learn about the Martians? Learn how to explore the relationship between genotype and phenotype and how to see DNA in your middle school classroom. This workshop will cover both DNA extraction using spooling and the separation of simulated DNA fragments using electrophoresis.

■ **Exploring STEAM with Transformation**

Thursday, 9:30 AM - 10:30 AM • Charlotte Convention Center, 207 B/C

Transforming bacteria with plasmids that express brightly colored or fluorescent proteins is an unforgettable way to teach the central dogma of molecular biology. Why not take it a step further and see the art your students can create using their transformed bacteria? We will review tips and tricks to maximize classroom success and also ask you to dust off your paintings skills! Artistic? Our favorite design will win a free kit.

■ **Left at the Scene of the Crime: Introduction to Forensic Science**

Thursday, 11:00 AM - 12:00 PM • Charlotte Convention Center, 207 B/C

Explore genetic diversity using forensic science! Your students become crime scene investigators as they analyze biological evidence using blood typing and DNA fingerprinting. An agglutination test is used to conclusively identify crime scene samples as "blood" and to preliminarily screen suspects by ABO type. Next, gel electrophoresis is used to create DNA profiles from crime scene and suspect samples.

■ **Exploring the Genetics of Taste: SNP Analysis of the PTC Gene Using PCR**

Thursday, 12:30 AM - 1:30 PM • Charlotte Convention Center, 207 B/C

Explore the relationship between genotype and phenotype using phenylthiocarbamide (PTC). Some think PTC tastes bitter, while others find it tasteless. The ability to taste PTC has been linked to variations in a taste receptor gene. Learn to use PCR to distinguish between PTC alleles. We will share tips and tricks along the way to ensure experimental success!

■ **Cancer Investigators: Medical Diagnostics in Your Classroom**

Thursday, 2:00 PM - 3:00 PM • Charlotte Convention Center, 207 B/C

Cancer contributes to almost one in every four deaths in the United States. Fortunately, innovations in biomedical research have improved our understanding of the differences between normal and cancer cells. In this hands-on workshop, participants use microscopy and electrophoresis to explore the hallmarks of cancer.

■ **What's in My Lunch? Using Biotechnology to Detect GMOs and Common Allergens**

Thursday, 3:30 PM - 4:30 PM • Charlotte Convention Center, 207 B/C

Biotech got its first break with the domestication of animals and plants and the use of microorganisms to make cheese, bread, beer, and wine. We want to bring the field back to these rich roots with two of our most delectable experiments! Discover how to identify foods containing GMOs by separating amplified DNA using gel electrophoresis. Next, use the enzyme-linked immunosorbent assay (ELISA) to detect common food allergens.

