



Division of Science, Technology, Engineering and Mathematics

Associate in Science in Biotechnology: Forensic DNA Science

In this program, students learn the allelic and mitochondrial DNA (mtDNA) techniques used in crime labs and anthropological research by their participation in actual criminal and anthropological cases. The program prepares students for entry-level technical positions in state and federal crime labs as well as public and private museums that conduct DNA-based anthropological studies. Students also receive extensive preparation in court testimony and the development of legal strategies in cases involving DNA. Students graduating from the Associate in Science in Biotechnology: Forensic DNA Science program will achieve proficiency in the college-wide learning outcomes.

Successful graduates of the program will be able to:

1. Conduct genomic and mtDNA sequence analysis;
2. Extract DNA from minute biological samples proficiently;
3. Conduct haplotype and haplogroup analysis;
4. Utilize public DNA databases;
5. Utilize hypervariable region (HVR) 1 and HVR 2 sequences in the identification of human remains;
6. Conduct exhumation and obtain analyzable mtDNA from human bones and remains;
7. Devise defense and prosecutorial strategies in criminal cases involving DNA;
8. Utilize allele panels in criminal investigations;
9. Maintain orderly, well-formatted laboratory and forensic notebooks;
10. Apply SWGDAM Interpretation Guidelines in Autosomal STR Typing;
11. Conduct Y- and autosomal-STR and SNP analyses;
12. Perform statistical analysis of the DNA typing results using the likelihood ratio (LR), or the combined probability of exclusion/inclusion (CPE/CPI);
13. Present DNA data in seminars, posters and public presentations to both scientific and lay audiences in a variety of settings;
14. Defend analytical findings in both scientific forums and trials.