KIERSTEN DAVIS & MARK FLOOD. Forensic Science program, Fairmont State University, Fairmont, WV 26554. The effect of ultraviolet radiation on DNA degradation in blood samples

Analyzing deoxyribonucleic acid (DNA) is one of the unique types of evidence found at crime scenes. Ultraviolet (UV) radiation, a natural component of sunlight, is a common environmental factor that can cause damage to biological molecules like DNA. In forensic science investigations, bloodstains are used to connect suspects and victims in a crime scene. When the stains are exposed to UV radiation the integrity of the evidence can be compromised and no longer be relevant to the investigation. In this research, the degradation of DNA from aseptic human blood samples when exposed to different wavelengths of UV light is being analyzed. Blood samples (100 uL) were dried on a piece of hardwood flooring, and exposed to UV-A, UV-B or UV-C for various lengths of time. Preliminary results show only a difference between the control (no UV) and UV-A exposure in terms of quantity of DNA extracted. Genotyping results will show whether DNA degradation is a significant issue. This research was made possible by WV Higher Education Policy Commission, STaR Division