EVALUATING A MEANS OF REDUCING THE CURRENT COST OF SETTING UP A DNA LAB THROUGH EQUIPMENT CHOICE AND A NOVEL MULTI-PLEXING AND GENDER TYPING QUANTIFICATION METHOD

Fernanda M. Henry, BS[1], Byron C. Smith, BS[2], Jonathan P. Wilson, MS[2] and Valerie M. Fuller, PhD[1]
[1]Ministry of Justice Forensic Science Laboratory, Saint Lucia, West Indies
[2]Tulsa Police Department Forensic Laboratory, Tulsa, OK

DNA technology has revolutionized the forensic community and the crime-fighting efforts of law-enforcement agencies. The access to DNA services is an invaluable tool, and as such, should be accessible to all judicial and law-enforcement agencies. Accessibility is limited, however, by the exorbitant costs of starting and running a traditional DNA laboratory oneself or by outsourcing to DNA laboratories that are costly and bogged down with delays due to their own inefficiencies and abilities to keep up with casework demand.

In this study we describe a solution to the accessibility problem. Through the use of a new DNA screening and quantitation assay, the Government of St. Lucia has set-up an affordable and efficient DNA lab in its newly constructed Forensic Science Laboratory. This facility is set apart from any other of its kind, due to the cost, time, and space efficiency being realized as a result of the choices of instrumentation that this assay allows. In this lab, a genetic analyzer is used for both quantification and profiling. This nullifies the need for a real-time PCR instrument and its consumables and greatly simplifies process flow. The St. Lucian lab serves as a template for small through-put manual DNA labs, but in a fully automated form, this St. Lucian template could maximize DNA testing efficiency on any scale.