

**DNA CAPACITY ENHANCEMENT AND BACKLOG REDUCTION PROGRAM
PROGRAM NARRATIVE
FY2016**

ABSTRACT

The Sedgwick County Regional Forensic Science Center (RFSC) is an independent local government agency which serves all Sedgwick County, Kansas Law Enforcement agencies. Currently, three of the four full time Biology/DNA Section positions are filled with qualified case-working scientists. A fourth scientist has been selected to join the section in mid-June and a qualified analyst cross-training in Firearms remains proficient in DNA analysis in the interim.

The Section has seen a dramatic rise in casework over the last two years. A multidisciplinary task force convened in Kansas to determine the number of untested kits statewide and the study revealed that over half of the untested kits reside in Sedgwick County. The heightened awareness accompanies an increase in reported sexual assaults in the jurisdiction; both factors contribute to the fact that the section has experienced a 4-fold increase in sexual assault submissions.

To address the caseload challenge the Center currently has two genetic analyzers. Both are 3130 models that are over a decade old and service for these models ends in 2018. Therefore, the laboratory must purchase and validate a genetic analyzer that is capable of unrestricted 6-dye analysis that will be fully supported beyond the 2018 timeframe.

The new instrument will interrogate 20+ loci (rather than the current 16). If the laboratory processes the same number of samples as are tested today, nearly twice the amount of data will result. Accordingly, the laboratory recognizes the limitations of human data interpretation and conventional statistical methods. A solution for the interpretation of challenging DNA profiles are probabilistic methods enabled by computer software. Continuous probabilistic genotyping systems, such as STRmix™, enable laboratories to streamline the interpretation and review of mixture samples. Since 2011, laboratories nationwide have been moving toward probabilistic methods because they are in compliance with mandates set forth by the National Commission on Forensic Science for improving DNA mixture interpretation.

This program is an acquisition program to allow the RFSC to replace instrumentation that is no longer supported, increase DNA quantification and typing efficiency, and to obtain the software, hardware, and training for the implementation of fully continuous probabilistic statistical analysis. The purchase acquisition will follow standard Sedgwick County [KS] purchasing polices. Funding of this equipment acquisition program will allow the RFSC to maintain the current level of forensic services.