Pinellas County Forensic Laboratory

FY2018 DNA Backlog Reduction Program

Program Narrative

Eligibility Statements

The Pinellas County Forensic Laboratory (PCFL) is a state designated existing crime laboratory (defined as such in Florida Statute 943) that conducts analysis of forensic DNA samples for law enforcement communities operating within Pinellas County, Florida.

All eligible DNA profiles obtained with funding from this program will be entered into the Combined DNA Index System (CODIS) and, where applicable, uploaded to the National DNA Index System (NDIS).

All DNA analysis performed under this program will be maintained under applicable federal privacy requirements.

PCFL follows NDIS DNA Data Acceptance Standards for all profiles uploaded to NDIS.

Statement of the Problem

DNA is a powerful tool to law enforcement for the investigation of both violent and non-violent crimes. The increased awareness of the ability of DNA to help solve all manner of cases, an increase in property crime investigations and submissions in Pinellas County, and increases in sexual assault submissions due to legislative action has placed a unanticipated burden on the laboratory to generate timely results within the confines of economy-driven local budget funding. Additionally, challenges to DNA statistical reporting has led to the need for significant change in the DNA mixture interpretation and reporting process nationwide. The current trend is a shift to likelihood ratio reporting using statistical software to minimize subjectivity in mixture interpretation.

The specific bottlenecks that exist a PCFL are in the processing, analysis, and reporting of evidentiary items submitted to the DNA section. The current number and types of requests now exceed the laboratory's existing capacity for analysis within a reasonable (30 day) turn-round time without the assistance of additional/continual funding from this program.

In 2016 alone, there was 13% increase in DNA submissions over 2015, which in itself was a record year; in 2016 there was a change in legislation that will result in an over 100% increase in sexual assault submissions. Pinellas County took specific action to increase the laboratory's budget, outside of this program, to assist in these challenges. However, there still is not sufficient funding available to allow for sufficient capacity to meet the needs of the criminal justice community.

In order to switch from current, manual, mixture interpretation techniques. The laboratory will need to acquire industry approved software for performing more automated mixture interpretations based upon likelihood ratios.

Project Design and Implementation

Goals, Objectives, and Expected Results

Goal 1: Enhance personnel and supply capacity to prevent additional increases in turnaround time and loss of analytical capacity.

Objective A: Continue to employ 1.5 FTE DNA casework analysts

Objective B: Procure sufficient casework supplies (extraction, quantitation and amplification) for casework analysis by program funded analysts.

Expected results: Grants analysts and the related supplies will increase laboratory throughput and reduce the number of DNA sample awaiting analysis. PCFL will be able to perform analysis of at least **300** cases and perform at least **200** technical reviews over 12 months of the award period with 1.5 FTE case analysts and providing analytical supplies for their analyses through this program.

Goal 2: Enhance mixture interpretation process through the use of specifically designed software for evaluating DNA mixtures based on likelihood ratios.

Objective A: Acquire software (STR Mix) for use in DNA mixture interpretation.

Objective B: Customize and validate software for laboratory use.

Objective C: Generate polices and procedure for the use of STR Mix.

Objective D: Train staff in the use of STR Mix in casework.

Timeline

The FTE positions will be funded under this program from January 1, 2019 to December 31, 2020. This is a continuation of funding of these positions from the 2015 DNA CEBR Program. Within the time period of this award, they will analyze at least **300** cases and perform at least **200** technical reviews.

The process for procurement of STR mix will begin in February 2018. Due to the sole source requirements for this projects, as defined by Pinellas County's purchasing policies, this procurement process is anticipated to take approximately 3-6 months. Manufacturer installation should occur by August 1, 2018. The software customization and validation will begin within one month of the receipt and implementation and training is expected to take another 6 months. STR MIX should be online for casework in by March 2019.

Addressing Bottlenecks

Currently, the primary bottlenecks in DNA analysis at PCFL are analysis unanticipated additional DNA item submissions as a result of: a) sexual assault kits (SAK) kit legislation that will require the analysis all kits collected and submitted to a law enforcement agency to be submitted to and tested by the laboratory; b) a significant surge in the use of DNA in the investigation of non-violent (property) crimes. The program will help to address this issue with an increase in staff and supply capacity.

While the primary benefit of mixture interpretation software is consistency in interpretation, a secondary benefit is that the automated process is faster than manual processes for mixture interpretation. Thus, the laboratory anticipates an increase in productivity upon the implementation of the software.

Potential Increases in Submissions

As of July 1, 2016, Florida Statutes require the analysis of ALL SAKs collected, regardless of perceived evidentiary value, by any law enforcement agency to be submitted to and analyzed by the corresponding forensic laboratory in the Florida Crime Laboratory System, of which PCFL is a member. This led to an increase SAK submissions to the laboratory of over 100.

Additionally, PCFL has seen double digit increases in property submissions in recent years. The current projection is for the increase rate of submission for property related crimes to stabilize near 10% per year. However, if the rate of increase continues at an annual rate of greater than 10%, it would negatively impact the project's expected results.

Finally, due to budgetary constraints, PCFL operates at the minimum staffing levels necessary to meet organizational objectives. Any turn-over in staff could have negative impact on project's expected results in terms of both capacity and turn-around-time.

Statement of Impact of Program on Casework Capacity

PCFL estimates that the laboratory will be able to analyze **300** cases, perform **200** technical reviews.

Capabilities and Competencies

Proposed Project Staff

Laboratory Staff:

Reta Newman, Laboratory Director will be the project point of contact/program manager for this project (Statement of Qualifications Attached). She will be responsible for the overall management of the grant to ensure completion of stated goals and objectives; gathering and reporting project progress and performance metrics; completing the quarterly FSR; and initiating reimbursements through the GPRS system. Note: funds are directly deposited into Pinellas County accounts, no funds are distributed directly to or from Pinellas County Forensic Laboratory staff and the OJP/NIJ.

Chad Summerfield, Technical Leader will be responsible for managing the validation and implementation of STR Mix software (Statement of Qualifications Attached).

Janel Borries (Assistant Lab Director-DNA) will be responsible for managing staff and casework assignments for this project (Statement of Qualifications Attached).

Tim Hartzog (DNA Analyst) is the award-fund analyst (1 FTE) who will perform analysis of forensic DNA casework associated with this award (Statement of Qualifications Attached).

Bijal Shah (DNA Analyst) is the part time award-funded analysts (0.5 FTE) who will perform analysis of forensic DNA casework with this award (Statement of Qualification Attached).

Plan for Collecting Required Data Required for Performance Measures

Note: Pinellas County has purchased the commercial out of the box (COTS) laboratory information management system (LIMs), Justice Trax. At the time of this application the software has not been implemented. It is likely that the process for collecting this performance measures may change in the course of this award. The descriptions provided below represent the current system for collecting this data.

Data collection for performance measures for Casework Laboratories

Average number of forensic DNA samples analyzed per analyst per month at the beginning of the award period:

The Laboratory Oracle Database reporting tool "Analyst Productivity" will be used to calculate the average turn-around-time. This report counts the number of original cases, items, supplemental cases, and technical reviews and calculates the average turnaround time for each analyst within each analytical unit and the cumulative total of all analysts in a given unit within a specified date range.

For the beginning of the award period, the average number of samples analyzed per analyst per month will be calculated based upon a six month average of the date range Jul 1, 2018-Dec 31, 2018.

The total number of items analyzed for this date range will be divided by the total number of FTE actively performing DNA casework within that date range and the number of months (6) within the date range.

Average number of forensic DNA samples analyzed per analyst per month at the end of the reporting period:

The same process as above will be used to determine the average number of forensic DNA samples analyzed per analyst per month at the end of a reporting period. The only difference will be the selection of the data range for generating the report. The data range will correspond to the reporting period.

Average number of days between the submission of a request, by type, for the forensic biology/DNA analysis to the laboratory and the delivery of the test results at the beginning of the award period:

The Laboratory Oracle Database reporting tool "Analyst Productivity" will be used to calculate the average turnaround-time (TAT). This report counts the number of original cases, items, supplemental cases, and technical reviews and calculates the average turnaround time for each analyst within each analytical unit and the cumulative total of all analysts in a given unit within a specified date range.

For the beginning of the award period, the average TAT calculated based upon a six month average of the date range Jul 1, 2018-Dec 31, 2018.

Average number of days between the submission of a request, by type, for the forensic biology/DNA analysis to the laboratory and the delivery of the test results at the beginning of the end of the reporting period:

The same process as above will be used to determine the average TAT at the end of a reporting period. The only difference will be the selection of the data range for generating the report. The data range will correspond to the reporting period.

Number of backlogged forensic biology/DNA cases, at the end of the reporting period:

The Laboratory Oracle Database reporting tool "Backlogged Cases" will be used to calculate the number of backlogged cases at the end of each reporting period. This reporting tool counts/calculates every case that was submitted more than 30 days prior to end date of the reporting period and in which no report has been issued and released by the end of the reporting period.

Number of forensic biology/DNA cases analyzed:

The Laboratory Oracle Database reporting tool "Analyst Productivity" will be used to count the number of forensic biology/DNA cases analyzed in a reporting period. This report counts the number of original cases, items, supplemental cases, and technical reviews and calculates the average turnaround time for each analyst within each analytical unit and the cumulative total of all analysts in a given unit within a specified (reporting period) date range. Only "original" cases will be counted, supplemental analyses of additional items will not be included in the count.

Number of DNA profiles from forensic analysis entered into CODIS:

The number of DNA profiles entered into CODIS within a reporting period will be generated from the CODIS database. The system will generate a report with the number of forensic samples uploaded within the specific time reporting period. This will include all profiles separated/generated from items of evidence, but will not include suspect standards uploaded into the system.

Number of CODIS hits:

The number of CODIS hits within a reporting period will be generated from the PCFL Excel Spreadsheet "CODIS Hit Report" which documents and manages all critical information regarding CODIS hits (both offender and forensic) obtained by the laboratory. This database is audited two times per year to ensure accuracy. The laboratory will use the counting function of EXCEL to determine the number of hits obtained within a given reporting period.

Data collection for performance measures for Database Laboratories

No metrics will be collected/reported for DNA analysis of database samples as PCFL does not perform DNA database analyses.

Additional Program Defined Metrics

Cases analyzed by program funded analysts and with grant funded supplies:

The Laboratory Oracle Database reporting tool "Analyst Productivity" will be used to count the number of forensic biology/DNA cases analyzed using award funded analysts and supplies. At PCFL, only grant funded analyst use grant funded supplies, and grant funded supplies are only used for grant funded

analysts. This report counts the number of original cases, items, supplemental cases, and technical reviews and calculates the average turnaround time for each analyst within each analytical unit and the cumulative total of all analysts in a given unit within a specified (reporting period) date range. Therefore this metric can be determined by adding the number of cases analyzed by the two grant funded analysts, within the reporting period. By limiting the case analyses of grant funded supplies to grant funded analyst the program ensures no double counting of cases.

Cases processed by through program funded overtime:

Each case processed by award-funded overtime will be flagged in the case file and entered into an Excel spreadsheet with the date of processing, analyst identifier, and case number. The number reported will be based upon an Excel count of the number cases with a processing date within the reporting period.

Responsibility for the performance measure data

The laboratory director (Reta Newman) will be responsible for collecting/reporting the data. All data will be maintained and be available for review three (3) years post award. The data will be stored in electronic form (pdf) on a secure and backed up county maintained server. *Note: PCFL is in the acquisition process of obtaining a commercial LIMS system which may alter the data collection/preservation process in the time frame of this award.*

Baseline Backlog Data

Number of untested/not completed forensic biology/DNA cases on hand on January 1, 2016.	134
Number of untested/not completed forensic biology/DNA cases more than 30 days old **(backlogged)** on January 1, 2016.	37
Please estimate percentage of these cases that were from property crimes.	80
Number of new **cases** for forensic biology/DNA received in 2016.	1990
Please estimate percentage of these **cases** that were from property crimes.	80
Total number of forensic biology/DNA **cases** completed in 2016.	1581
Please estimate percentage of these **cases** that were property crimes.	75
Forensic biology/DNA cases closed by administrative means in 2016	10
Number of untested/not completed forensic biology/DNA cases on hand on December 31, 2016.	543
Number of untested/not completed forensic biology/DNA cases more than 30 days old December 31, 2016.	402
The average number of days needed to complete (including peer review and report) non-priority forensic DNA cases for calendar year 2016. Please indicate violent crime time with a **"V"** and the nonviolent crime time with **"NV."** If the applicant cannot separate violent and nonviolent cases, give the number with no other markings.	42.4

* PCFL's current database cannot differentiate between priority and non-priority forensic cases.