

B&F  
PS

Resolution No. 1775

A resolution approving an application for a DNA Capacity Enhancement Grant from the United States Department of Justice to The Metropolitan Government of Nashville and Davidson County, acting by and through the Metropolitan Nashville Police Department, to assist in the purchase of DNA laboratory processing software to increase the efficiency and effectiveness of the Forensic Biology Unit.

WHEREAS, the United States Department of Justice is accepting applications for a DNA Capacity Enhancement Grant with an award of \$250,000.00 and a required match of \$133,039.00 (Crime Lab Operating Budget); and,

WHEREAS, the Metropolitan Government is eligible to participate in this grant program; and,

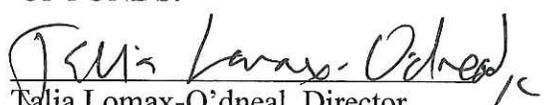
WHEREAS, it is to the benefit of the citizens of The Metropolitan Government of Nashville and Davidson County that this grant application be approved and submitted.

NOW, THEREFORE BE IT RESOLVED BY THE COUNCIL OF THE METROPOLITAN GOVERNMENT OF NASHVILLE AND DAVIDSON COUNTY:

Section 1. That the Metropolitan Government's grant application for a DNA Capacity Enhancement Grant, with an award of \$250,000.00, a copy of which is attached hereto and incorporated herein, is hereby approved, and the Metropolitan Nashville Police Department is authorized to submit said application to the United States Department of Justice.

Section 2. That this resolution shall take effect from and after its adoption, the welfare of The Metropolitan Government of Nashville and Davidson County requiring it.

APPROVED AS TO AVAILABILITY OF FUNDS:

  
Talia Lomax-O'dneal, Director  
Department of Finance

INTRODUCED BY:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Member(s) of Council

APPROVED AS TO FORM AND LEGALITY:

  
Assistant Metropolitan Attorney

GRANT APPLICATION SUMMARY SHEET

Grant Name: DNA Capacity Enhancement for Backlog Reduction (CEBR)  
Program 20-21

Department: POLICE DEPARTMENT

Grantor: U.S. DEPARTMENT OF JUSTICE

Pass-Through Grantor  
(if applicable):

Total Applied \$250,000.00

Metro Cash Match: \$133,039.00

Department Contact: Lt. Jim Stephens  
880-2850

Status: NEW

Program Description:

The DNA Capacity Enhancement for Backlog Reduction (CEBR) Program Grant will assist the MNP/D Forensic Biology Unit in purchasing DNA laboratory processing software from STACSDNA to replace the current LIMS in tracking and documenting analyses and quality assurance measures. This will increase the efficiency and effectiveness of the tasks performed by the Forensic Biology Unit by more efficiently by managing laboratory operations and thus eliminating unnecessary tasks. The matching funds will be paid through Fund 10101 and BU# 31121760.

Plan for continuation of services upon grant expiration:  
N/A

APPROVED AS TO AVAILABILITY  
OF FUNDS:

APPROVED AS TO FORM AND  
LEGALITY:

*Theresa...* 4/28/19 Date  
Metropolitan Attorney Date 5/1/19

APPROVED AS TO RISK AND  
INSURANCE:

*...* 4/30/19 Date  
Metropolitan Mayor Date 4.5.2.19  
(This application is contingent upon approval of the application by the Metropolitan Council.)

Director of Risk Management Services

Metropolitan Mayor

## Project Abstract

In May 2015, the Metropolitan Nashville Police Department (MNPDP) opened its own crime laboratory, becoming the first local laboratory in the State of Tennessee. The State of Tennessee has enacted legislation that requires 100% testing of sexual assault kits.<sup>1</sup> This piece of legislature has increased the volume of sexual assault kit submissions for DNA testing to the Metropolitan Nashville Police Department Crime Laboratory (MNPDP-CL). In addition, the MNPDP-CL has seen an increase in sample and case submissions for DNA analysis coupled with an increasing demand for decrease in turnaround time. Increases in sample and case submissions negatively affect backlog reduction and turnaround time.

The MNPDP-CL is committed to continuous improvements and efficiency and has made every effort to obtain updated technology in automation, chemistries, and adequate staffing levels to meet the high demands of forensic DNA testing.

The MNPDP-CL Forensic Biology Unit currently utilizes a laboratory information management system (LIMS) that is not conducive to encapsulate the full range of processes performed by the DNA analysts. Tracking and documentation of analyses and quality assurance measures are performed manually, which is inefficient and time consuming. This creates more work for the Forensic Biology Unit as the need to backtrack and verify quality assurance is necessary prior to continuing any work in processing more DNA samples to reduce the backlog. This in turn also increases the turnaround time.

If this grant funding is awarded, the MNPDP-CL Forensic Biology Unit plans to use the funding to assist in the purchase of a DNA laboratory processing software from STACSDNA to replace the current LIMS in tracking and documenting analyses and quality assurance measures. This will increase the efficiency and effectiveness of the tasks performed by the Forensic Biology Unit by more efficiently managing laboratory operations and thus eliminating unnecessary tasks. By more efficiently managing laboratory operations, more time and efforts can be dedicated to processing cases and samples to reduce the continuously increasing backlog of cases and decrease turnaround time. This will meet the goal of providing forensic DNA analysis of superior quality in a timely and efficient manner, decrease and eliminate the backlog, increase throughput, and reduce turnaround time by addressing workflow inefficiencies.

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<sup>1</sup> <https://openstates.org/tn/bills/109/HB1239/>

**MNPD Grant Application Internal Cover Sheet**

**2019 DNA Capacity Enhancement for Backlog Reduction (CEBR) Program**

**CFDA No. 16.741**

**Federal Grant Application ID Number: 2019-90248-TN-DN**

**Application Submission Deadline: May 13, 2019**

**Federal Request \$250,000**

**Non-Federal Amount \$133,039\***

**Match Requirements: None**

**Total Project Cost \$383,039**

\*\*Funding source is Crime Lab Operating Budget. Funding is currently dedicated to deliverables outlined in Project Narrative (attached) and is being identified as proof of project commitment beyond federal financial assistance requested.

This application is contingent upon approval of the application by the Metropolitan Council.

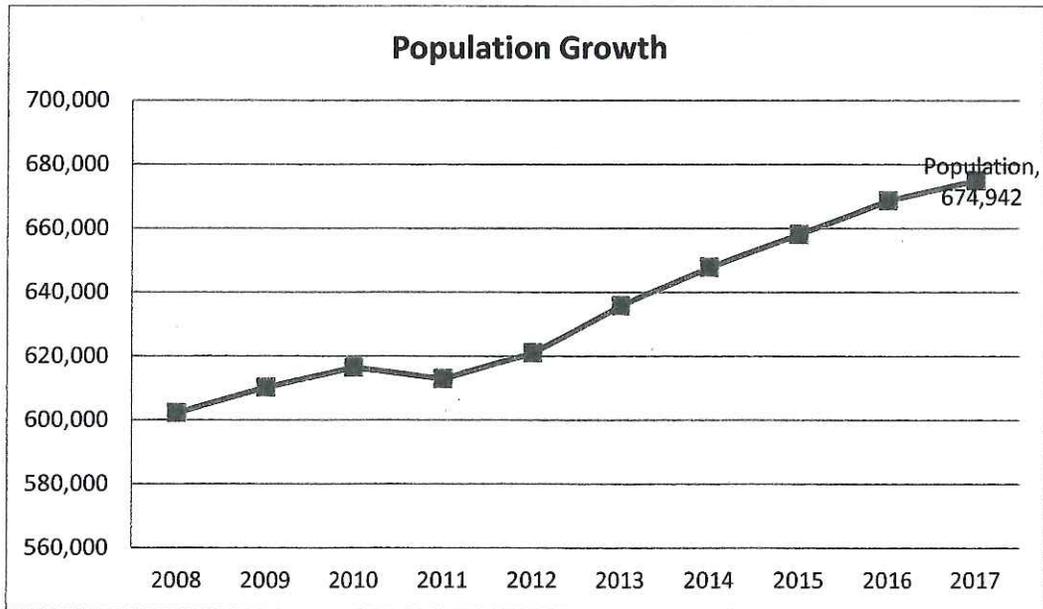
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## Program Narrative

### Description of the Issue

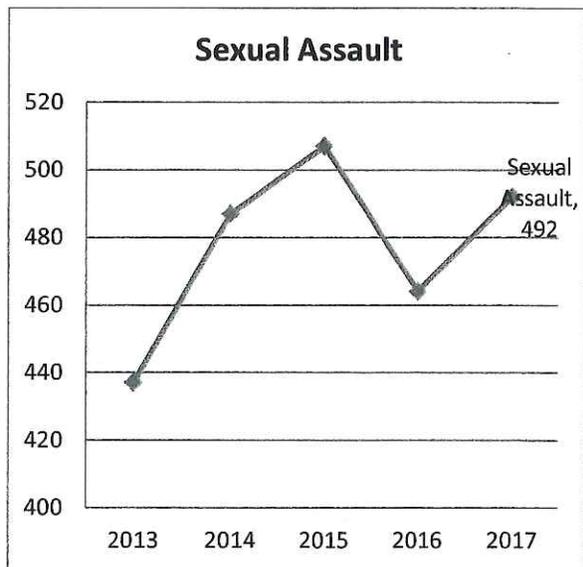
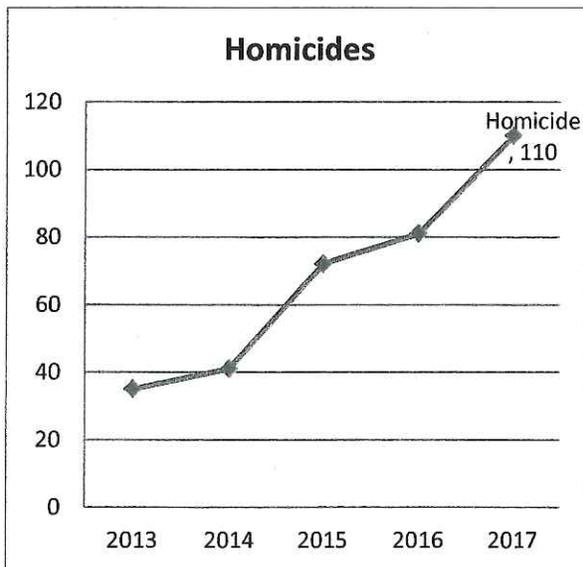
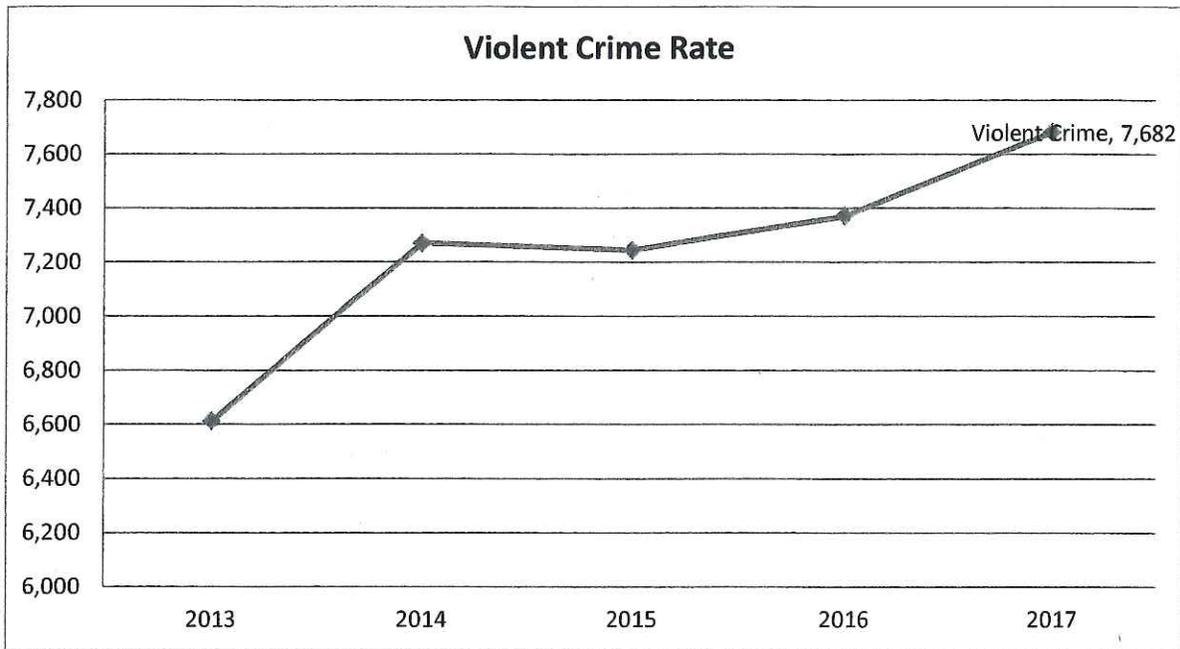
The Metropolitan Nashville Police Department Crime Laboratory (MNPDC-CL) provides services to all of Nashville and Davidson County, which encompasses 504.03 square miles.<sup>1</sup> According to 2017 census data, the Nashville and Davidson County Metropolitan Area surpassed the City of Memphis in total population, becoming the most populated geographic area in the State of Tennessee, home to an estimated 691,243 people. That resulted in an increase in 64,663 over 7 years (9,237/year; 177 per week; 1,371 people per square mile). The rapid increase in population greatly increases the demand for forensic DNA testing services as violent crimes also increase.<sup>2</sup>



Violent crime has increased by 13.9% over the last five years, with homicides increasing by 68.2% and sexual assaults increasing by 11.2%.

<sup>1</sup> <https://www.census.gov/quickfacts/fact/table/memphiscitytennessee,davidsoncountytennessee/PST045218>

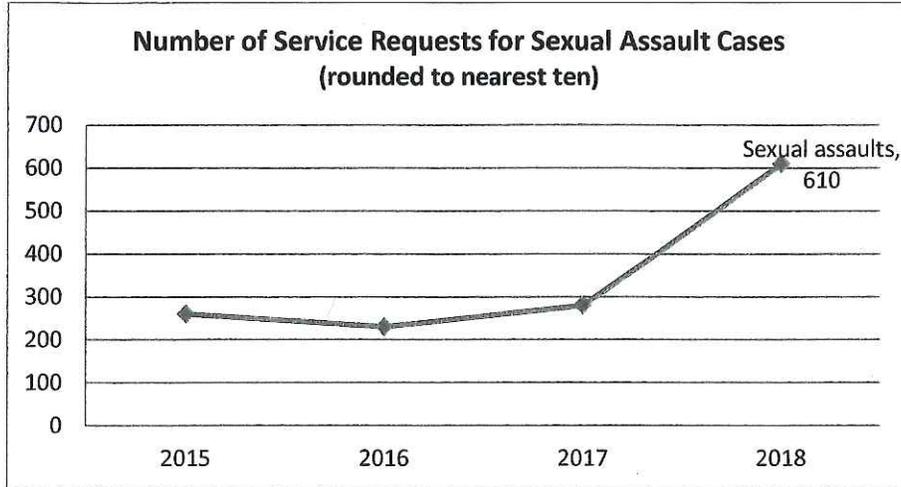
<sup>2</sup> <https://ucr.fbi.gov/crime-in-the-u.s>



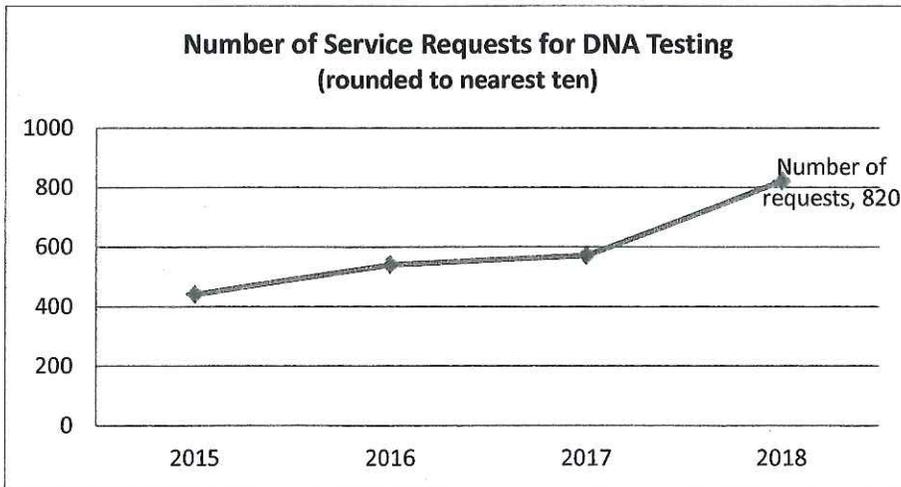
In May 2015, the Metropolitan Nashville Police Department (MNPd) opened its own crime laboratory, becoming the first local laboratory in the State of Tennessee. The State of Tennessee has enacted legislation that requires 100% testing of sexual assault kits.<sup>3</sup> This piece of

<sup>3</sup> <https://openstates.org/tn/bills/109/HB1239/>

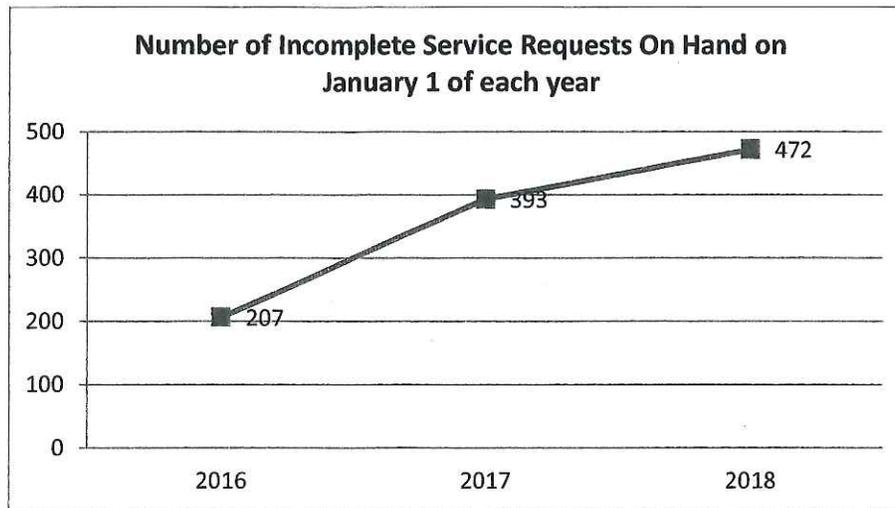
legislature has increased the volume of service requests for sexual assault cases for DNA testing to the Metropolitan Nashville Police Department Crime Laboratory (MNPDC-CL) by 57.4%.



The MNPDC-CL has seen an overall increase in service requests for DNA analysis (46.3%) coupled with an increasing demand for decrease in turnaround time.



Increases in service requests negatively affect backlog reduction and turnaround time.



The MNPD-CL Forensic Biology Unit currently utilizes a laboratory information management system (LIMS) that is not conducive to encapsulate the full range of processes performed by the DNA analysts. Tracking and documentation of analyses and quality assurance measures are performed manually, which are inefficient, cumbersome, and time consuming.

When a portion of evidence is sampled for DNA analysis, the documentation of what reagents are used, which instruments are used on the sample, and when each process takes place are all performed manually. The manual process requires the DNA analyst to ensure that reagents have been appropriately quality checked and not expired, and instruments have passed performance checks prior to usage on casework samples. DNA analysts currently must access a different system in order to determine if the reagents and instruments being used are acceptable to use. This information may not be available while the DNA analyst is in the middle of processing a case. Due to the extensive amount of documentation required to be maintained in any one DNA case, the manual tracking of samples, reagents, and instruments is very time consuming, labor intensive, and cumbersome. Maintenance and retention of quality assurance records for reagents, instruments, and case file records are also currently stored in separate

systems. This makes research into quality assurance matters as they relate to the cases processed inefficient, creating difficulties in the tracking and mitigation of errors.

As the MNPd-CL grows with the population of Nashville and Davidson County, it is expected that forensic service requests for DNA testing will increase. The increase in service requests negatively impact the DNA backlog and turnaround time if the Forensic Biology Unit does not have access to a laboratory processing system, such as STACSDNA, that would make managing laboratory operations more efficient by eliminating current manual systems.

By obtaining and implementing a laboratory processing software from STACSDNA, the MNPd-CL Forensic Biology Unit would be able to enhance the capacity to reduce the number of forensic DNA samples and cases awaiting analysis and decrease turnaround time because laboratory operations would be more efficiently managed.

### Project Design and Implementation

The goal of this project is to increase the capacity to reduce the number of forensic DNA samples and cases awaiting analysis and decrease turnaround time by more efficiently managing laboratory operations through the implementation of a laboratory processing software from STACSDNA.

STACSDNA has the capability to control and track all aspects of the DNA workflow from sample receipt through processing to analysis by integrating the laboratory's technical procedures. The software can also be customized to ensure that the system is adapted to the MNPd-CL Forensic Biology Unit's needs. Since STACSDNA is so versatile in its application, it has the overall ability to maximize and leverage the MNPd-CL's current technology investments to enhance the capacity and throughput of the Forensic Biology Unit. STACSDNA can therefore increase productivity, reduce cost per sample, decrease turnaround time, decrease samples

waiting to be processed (backlog reduction), reduce errors related to manual tasks and transcription, and improve quality assurance by preventing usage of expired or not quality checked reagents and instruments.

The acquisition and implementation of a laboratory processing software such as STACSDNA would fulfill the mission of the MNPd-CL's commitment to provide timely forensic services of superior quality to the Metropolitan Nashville and Davidson County area. In order to obtain this goal, the MNPd-CL has identified (4) objectives.

#### Objective 1

The MNPd-CL will initiate the procurement of a laboratory processing software from STACSDNA once this grant funding has been awarded and the grant period begins. This process will be initiated and overseen by the MNPd-CL Business Manager. Due to the MNPd-CL being part of a larger organization and governed by the Metropolitan Nashville and Davidson County officials, it is expected that this process could take approximately 3 months (January 1, 2020 through March 31, 2020).

#### Objective 2

The finalization of the purchasing and contractual agreements should be completed by the end of the first quarter of 2020 (April 1, 2020), allowing the MNPd-CL and STACSDNA to begin assessing gaps between current operations and the functions available from the STACSDNA software. This will be the responsibility of the DNA Technical Leader and STACSDNA.

#### Objective 3

Once a gap analysis has been completed and reviewed, the MNPd-CL and STACSDNA will begin working on the design and development of the software to a) meet the needs of the Forensic Biology Unit, b) increase the efficiency of managing laboratory operations, c)

incorporate quality assurance measures, and d) streamline documentation. This phase will take the longest as it also includes installation, training, customized configurations, validation, user testing, and finalization of the system for production. This is a team effort, requiring several staff members (Forensic Technician and Forensic Scientists) from the Forensic Biology Unit, the DNA Technical Leader, and IT Manager to collaborate together.

#### Objective 4

The final phase of the project would be to implement STACSDNA into daily casework and laboratory operations management. It is estimated that this could occur by January 1, 2021.

#### Expectations

It is expected that in the second year of this grant period the Forensic Biology Unit will be able to see an improvement in the efficiency and effectiveness in the management of laboratory operations and a reduction in the time and efforts spent in quality assurance research. This will result in an increase in time and efforts that can be dedicated to processing samples and cases to reduce the number of forensic DNA samples and cases awaiting analysis and decrease turnaround time. Throughput could also be increased as laboratory operations are more efficiently managed.

The MNPD-CL is actively providing forensic testing services to the Metropolitan Nashville and Davidson County community. As such, service requests are continuously being submitted and accepted by the MNPD-CL. As forensic DNA testing becomes more necessary and the service becoming more valuable, the MNPD-CL expects to see continued increases in forensic DNA testing service requests that could negatively impact the DNA backlog. Other factors that could negatively impact the DNA backlog, turnaround time, and/or the Forensic Biology Unit's capacity are issues with equipment and/or decrease in staffing.

#### Sustainability Plan

The MNPD-CL will submit the costs of Support and Maintenance for the STACSDNA system to the Metropolitan Finance Department annually.

#### Capabilities and Competencies

The Metropolitan Nashville Police Department Crime Laboratory (MNPD-CL) consists of a Forensic Biology Unit which provides DNA testing services. The Forensic Biology Unit consists of (1) Unit Supervisor/DNA Technical Leader, (1) CODIS Administrator/Forensic Scientist, (6) Forensic Scientists, and (1) Forensic Technician. The laboratory processing software, STACSDNA, will be validated and tested by (2) Forensic Scientists and (1) Forensic Technician (resumes/CVs included). The entire process from installation to finalizing the software for implementation will be overseen and managed by the DNA Technical Leader.

The MNPD-CL Business Manager will be responsible for the procurement process. In addition, the MNPD-CL Forensic Biology Unit will have the full support of the MNPD-CL IT Manager to facilitate installation and system configuration. The scope of this project will be overseen by the MNPD-CL Quality Manager. This project also has the full support of the MNPD-CL's Acting Assistant Director and Interim Director.

The MNPD-CL is committed to continuous improvements and efficiency and has made every effort to obtain updated technology in automation, chemistries, and adequate staffing levels to meet the high demands of forensic DNA testing services. The Forensic Biology Unit is equipped with automated extraction, quantification, amplification, and capillary electrophoresis instrumentation, software for data analysis, and chemistry kits that detect genetic markers approved by the FBI for entry into the CODIS database.

In terms of staffing capabilities, (4) of the Forensic Scientists are fully trained and qualified; the CODIS Administrator is also a fully trained and qualified Forensic Scientist; and the DNA Technical Leader has over 18 years of experience in the discipline of forensic DNA analysis. All participants working on this project will be appropriately and sufficiently trained to facilitate the successful completion of implementing the STACSDNA software into the Forensic Biology Unit's workflow.

#### Plan for Collecting the Data Required for this Solicitation's Performance Measures

Performance measure data will be derived from the current existing LIMS (before STACSDNA is implemented) and the newly implemented STACSDNA software (after STACSDNA is implemented). The data will be inputted into the LIMS by Forensic Scientists as they complete each service request and LIMS will serve as the collection and storage medium. Crystal reports written in the LIMS can calculate the number of days it takes from the date the service was requested to the date the report was released for DNA analysis to obtain turnaround time. The number of samples analyzed, the number of service requests completed, the number of service requests still outstanding, and the number of profiles entered into CODIS can all be extrapolated using crystal reports from the data entered by the Forensic Scientists into the LIMS. The MNPD-CL relies on the Forensic Scientists to accurately enter the number of samples worked and how many profiles are entered into CODIS into the LIMS. The data will therefore be able to measure the impact of the federal funds provided for this project. All data is auditable as the MNPD-CL retains all technical records that the data is derived from. All data entered and collected will be available for review for three (3) years from the date of submission of the final federal financial report (SF-425) under the award, or as otherwise required by law.

The system for metric collection has been used for (3) years and has demonstrated its value and accuracy. These same metrics are used by the MNPD-CL to determine areas of needed improvement. Once the data has been exported out of the LIMS, the DNA Technical Leader will be responsible for calculating the data for reporting.

The MNPD-CL will not expend any amounts under this award on procurement contracts to private accredited DNA laboratories for analysis of forensic DNA casework samples. There are no subrecipients under this award.

#### Baseline Backlog Data - Casework Laboratory

|  |                 |
|--|-----------------|
| Number of untested/not completed forensic biology/DNA cases on hand on January 1, 2018.  | 472             |
| Number of untested/not completed forensic biology/DNA cases more than 30 days old (backlogged) on January 1, 2018.   | 447             |
| Please estimate percentage of the backlogged cases that were from property crimes.   | 7%              |
| Number of new cases for forensic biology/DNA received in 2018.   | 276             |
| Please estimate percentage of these cases that were from property crimes.  | 2%              |
| Total number of forensic biology/DNA cases completed in 2018.  | 299             |
| Please estimate percentage of these cases that were property crimes.   | 10%             |
| Forensic biology/DNA cases closed by administrative means in 2018.   | 40              |
| Number of untested/not completed forensic biology/DNA cases on hand on December 31, 2018.  | 498             |
| Number of untested/not completed forensic biology/DNA cases more than 30 days old (backlogged) on December 31, 2018.   | 476             |
| The average number of days needed to complete (including peer review and report) non-priority forensic DNA cases for calendar year 2018. 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. | V 254<br>NV 257 |

#### Milestones

| Timeline                   | Milestone  |
|----------------------------|--|
| January 2020 – March 2020  | Procurement  |
| April 2020 – December 2020 | Gap analysis, installation, training, customized configurations, validation, user testing, and finalization of the system for production |
| January 2021               | Implementation   |



[General Instructions & Resources](#)

[View Budget Summary](#)

OMB APPROVAL NO.: 1121-0329  
EXPIRES 7/31/2016

Budget Detail Worksheet

- (1) **Purpose:** The Budget Detail Worksheet is provided for your use in the preparation of the budget and budget narrative. All required information (including the budget narrative) must be provided. Any category of expense not applicable to your budget may be left blank. Indicate any **non-federal**( **match** ) amount in the appropriate category, if applicable.
- (2) For each budget category, you can see a sample by clicking ([To View an Example, Click Here](#)) at the end of each description.
- (3) There are various hot links listed in red in the budget categories that will provide additional information via documents on the internet.
- (4) **Record Retention:** In accordance with the requirements set forth in [2 CFR Part 200.333](#) , all financial records, supporting documents, statistical records, and all other records pertinent to the award shall be retained by each organization for at least three years following the closure of the audit report covering the grant period.
- (5) The information disclosed in this form is subject to the Freedom of Information Act under 5 U.S.C. 55.2.

A. **Personnel** – List each position by title and name of employee, if available. Show the annual salary rate and the percentage of time to be devoted to the project. Compensation paid for employees engaged in grant activities must be consistent with that paid for similar work within the applicant organization. Include a description of the responsibilities and duties of each position in relationship to fulfilling the project goals and objectives. (Note: Use whole numbers as the percentage of time, an example is 75.50% should be shown as 75.50) [To View an Example, Click Here](#)

**PERSONNEL (FEDERAL)**

| Name                 | Position | Computation |       |                    |                | Cost |
|----------------------|----------|-------------|-------|--------------------|----------------|------|
|                      |          | Salary      | Basis | Percentage of Time | Length of Time |      |
|                      |          |             | Year  |                    |                | \$0  |
| <b>FEDERAL TOTAL</b> |          |             |       |                    |                | \$0  |

**PERSONNEL NARRATIVE (FEDERAL)**

**PERSONNEL (NON-FEDERAL)**

| Name                     | Position | Computation |               |                    |                | Cost |
|--------------------------|----------|-------------|---------------|--------------------|----------------|------|
|                          |          | Salary      | Basis<br>Year | Percentage of Time | Length of Time |      |
|                          |          |             |               |                    |                | \$0  |
| <b>NON-FEDERAL TOTAL</b> |          |             |               |                    |                | \$0  |

**PERSONNEL NARRATIVE (NON-FEDERAL)**

|                        |     |
|------------------------|-----|
| <b>TOTAL PERSONNEL</b> | \$0 |
|------------------------|-----|

**B. Fringe Benefits** – Fringe benefits should be based on actual known costs or an approved negotiated rate by a Federal agency. If not based on an approved negotiated rate, list the composition of the fringe benefit package. Fringe benefits are for the personnel listed in budget category (A) and only for the percentage of time devoted to the project. Fringe benefits on overtime hours are limited to FICA, Workman's Compensation and Unemployment Compensation. (Note: Use decimal numbers for the fringe benefit rates, an example is 7.65% should be shown as .0765) [To View an Example, Click Here](#)

**FRINGE BENEFITS (FEDERAL)**

| Description          | Computation |      | Cost |
|----------------------|-------------|------|------|
|                      | Base        | Rate |      |
|                      |             |      | \$0  |
| <b>FEDERAL TOTAL</b> |             |      | \$0  |

**FRINGE BENEFITS NARRATIVE (FEDERAL)**

**FRINGE BENEFITS (NON-FEDERAL)**

| Description       | Computation |      | Cost |
|-------------------|-------------|------|------|
|                   | Base        | Rate |      |
| NON-FEDERAL TOTAL |             |      |      |
|                   |             |      | \$0  |

**FRINGE BENEFITS NARRATIVE (NON-FEDERAL)**

|                       |     |
|-----------------------|-----|
|                       |     |
| TOTAL FRINGE BENEFITS | \$0 |

C. **Travel** – Itemize travel expenses of staff personnel by purpose (e.g., staff to training, field interviews, advisory group meeting, etc.). Describe the purpose of each travel expenditure in reference to the project objectives. Show the basis of computation (e.g., six people to 3-day training at \$X airfare, \$X lodging, \$X subsistence). In training projects, travel and meals for trainees should be listed separately. Show the number of trainees and the unit costs involved. Identify the location of travel, if known; or if unknown, indicate "location to be determined." Indicate source of Travel Policies applied Applicant or Federal Travel Regulations. Note: Travel expenses for consultants should be included in the "Contractual/Consultant" category. [To View an Example, Click Here](#)

**TRAVEL (FEDERAL)**

| Purpose of Travel    | Location | Computation     |           |                |          |                  |                 | Cost   |
|----------------------|----------|-----------------|-----------|----------------|----------|------------------|-----------------|--------|
|                      |          | Item            | Cost Rate | Basis for Rate | Quantity | Number of People | Number of Trips |        |
|                      |          | Lodging         |           | Night          |          |                  |                 | \$0.00 |
|                      |          | Meals           |           | Day            |          |                  |                 | \$0.00 |
|                      |          | Mileage         |           | Mile           |          |                  |                 | \$0.00 |
|                      |          | Transportation: |           | Round-trip     |          |                  |                 | \$0.00 |
|                      |          | Local Travel    |           |                |          |                  |                 | \$0.00 |
|                      |          | Other           |           |                |          |                  |                 | \$0.00 |
|                      |          | Subtotal        |           |                |          |                  |                 | \$0.00 |
| <b>FEDERAL TOTAL</b> |          |                 |           |                |          |                  |                 | \$0    |

**TRAVEL NARRATIVE (FEDERAL)**

**TRAVEL (NON-FEDERAL)**

| Purpose of Travel        | Location | Computation     |           |                |          |                  |                 | Cost   |
|--------------------------|----------|-----------------|-----------|----------------|----------|------------------|-----------------|--------|
|                          |          | Item            | Cost Rate | Basis for Rate | Quantity | Number of People | Number of Trips |        |
|                          |          | Lodging         |           | Night          |          |                  |                 | \$0.00 |
|                          |          | Meals           |           | Day            |          |                  |                 | \$0.00 |
|                          |          | Mileage         |           | Mile           |          |                  |                 | \$0.00 |
|                          |          | Transportation: |           | Round-trip     |          |                  |                 | \$0.00 |
|                          |          | Local Travel    |           |                |          |                  |                 | \$0.00 |
|                          |          | Other           |           |                |          |                  |                 | \$0.00 |
|                          |          | Subtotal        |           |                |          |                  |                 | \$0.00 |
| <b>NON-FEDERAL TOTAL</b> |          |                 |           |                |          |                  |                 | \$0    |

**TRAVEL NARRATIVE (NON-FEDERAL)**

TOTAL TRAVEL \$0

**D. Equipment** – List non-expendable items that are purchased (Note: Organization's own capitalization policy for classification of equipment should be used). Expendable items should be included in the "Supplies" category. Applicants should analyze the cost benefits of purchasing versus leasing equipment, especially high cost items and those subject to rapid technological advances. Rented or leased equipment costs should be listed in the "Contractual" category. Explain how the equipment is necessary for the success of the project, and describe the procurement method to be used. [To View an Example, Click Here](#)

**EQUIPMENT (FEDERAL)**

| Item                 | Computation |              | Cost             |
|----------------------|-------------|--------------|------------------|
|                      | Quantity    | Cost         |                  |
| STACS-CW License     | 1           | \$227,275.00 | \$227,275        |
| <b>FEDERAL TOTAL</b> |             |              | <b>\$227,275</b> |

**EQUIPMENT NARRATIVE (FEDERAL)**

The MNPPD Crime Lab's Forensic Biology Unit will utilize STACS-CW to replace the current LIMS for tracking and documenting analyses. This will increase the efficiency and effectiveness of the tasks performed by the Forensic Biology Unit by eliminating unnecessary tasks. This will allow more time to be dedicated to processing cases and samples to reduce the continuously increasing backlog of cases and decrease turnaround time. We are following our agency's capitalization process.

**EQUIPMENT (NON-FEDERAL)**

| Item                     | Computation |             | Cost             |
|--------------------------|-------------|-------------|------------------|
|                          | Quantity    | Cost        |                  |
| STACS-CW License         | 1           | \$48,944.00 | \$48,944         |
| Customization Services   | 1           | \$61,076.76 | \$61,077         |
| Implementation Services  | 1           | \$23,018.00 | \$23,018         |
| <b>NON-FEDERAL TOTAL</b> |             |             | <b>\$133,039</b> |

**EQUIPMENT NARRATIVE (NON-FEDERAL)**

The MNPD Crime Lab's Forensic Biology Unit will utilize STACS-CW to replace the current LIMS for tracking and documenting analyses. This will increase the efficiency and effectiveness of the tasks performed by the Forensic Biology Unit by eliminating unnecessary tasks. This will allow more time to be dedicated to processing cases and samples to reduce the continuously increasing backlog of cases and decrease turnaround time. We are following our agency's capitalization process.

Customization Services include: Knowledge Transfer and IAD Sessions, Design & Development, User Acceptance Testing, System Acceptance Implementation Services include: Installation and Configuration, System Setup, User Training

TOTAL EQUIPMENT \$360,314

E. **Supplies** – List items by type (office supplies, postage, training materials, copying paper, and expendable equipment items costing less than \$5,000, such as books, hand held tape recorders) and show the basis for computation. Generally, supplies include any materials that are expendable or consumed during the course of the project. [To View an Example, Click Here](#)

**SUPPLIES (FEDERAL)**

| Supply Items         | Computation       |      | Cost |
|----------------------|-------------------|------|------|
|                      | Quantity/Duration | Cost |      |
|                      |                   |      | \$0  |
| <b>FEDERAL TOTAL</b> |                   |      | \$0  |

**SUPPLIES NARRATIVE (FEDERAL)**

**CONTRACTS (NON-FEDERAL)**

| Item              | Cost |
|-------------------|------|
|                   |      |
| NON-FEDERAL TOTAL |      |
| \$0               |      |

**CONTRACTS NARRATIVE (NON-FEDERAL)**

|  |
|--|
|  |
|--|

|                             |     |
|-----------------------------|-----|
| TOTAL CONTRACTS             | \$0 |
| TOTAL CONSULTANTS/CONTRACTS | \$0 |

**H. Other Costs** – List items (e.g., rent ( arms-length transaction only ), reproduction, telephone, janitorial or security services, and investigative or confidential funds) by major type and the basis of the computation. For example, provide the square footage and the cost per square foot for rent or provide a monthly rental cost and how many months to rent. The basis field is a text field to describe the quantity such as square footage, months, etc. [To View an Example, Click Here](#)

**OTHER COSTS (FEDERAL)**

| Description          | Computation |       |      |                | Cost |
|----------------------|-------------|-------|------|----------------|------|
|                      | Quantity    | Basis | Cost | Length of Time |      |
|                      |             |       |      |                | \$0  |
| <b>FEDERAL TOTAL</b> |             |       |      |                | \$0  |

**OTHER COSTS NARRATIVE (FEDERAL)**

**OTHER COSTS (NON-FEDERAL)**

| Description       | Computation |       |      |                | Cost |
|-------------------|-------------|-------|------|----------------|------|
|                   | Quantity    | Basis | Cost | Length of Time |      |
|                   |             |       |      |                | \$0  |
| NON-FEDERAL TOTAL |             |       |      |                | \$0  |

**OTHER COSTS NARRATIVE (NON-FEDERAL)**

|                   |     |
|-------------------|-----|
| TOTAL OTHER COSTS | \$0 |
|-------------------|-----|

**SUPPLIES (NON-FEDERAL)**

| Supply Items      | Computation       |      | Cost |
|-------------------|-------------------|------|------|
|                   | Quantity/Duration | Cost |      |
| NON-FEDERAL TOTAL |                   |      |      |
|                   |                   |      | \$0  |

**SUPPLIES NARRATIVE (NON-FEDERAL)**

|  |
|--|
|  |
|--|

|                |     |
|----------------|-----|
| TOTAL SUPPLIES | \$0 |
|----------------|-----|

F. **Construction** – Provide a description of the construction project and an estimate of the costs. As a rule, construction costs are not allowable. In some cases, minor repairs or renovations may be allowable. Minor repairs and renovations should be classified in the "other" category. Consult with the program office before budgeting funds in this category. [To View an Example, Click Here](#)

**CONSTRUCTION (FEDERAL)**

| Purpose       | Description of Work | Cost |
|---------------|---------------------|------|
| FEDERAL TOTAL |                     | \$0  |

**CONSTRUCTION NARRATIVE (FEDERAL)**

**CONSTRUCTION (NON-FEDERAL)**

| Purpose                  | Description of Work | Cost       |
|--------------------------|---------------------|------------|
|                          |                     |            |
| <b>NON-FEDERAL TOTAL</b> |                     | <b>\$0</b> |

**CONSTRUCTION NARRATIVE (NON-FEDERAL)**

|                           |            |
|---------------------------|------------|
| <b>TOTAL CONSTRUCTION</b> | <b>\$0</b> |
|---------------------------|------------|

**G. Consultants/Contracts** – Indicate whether applicant’s formal, written Procurement Policy or the Federal Acquisition Regulations are followed.  
**Consultant Fees:** For each consultant enter the name, if known, service to be provided, hourly or daily fee (8-hour day), and estimated time on the project. Consultant fees in excess of \$650 per day or \$81.25 per hour require additional justification and prior approval from OJP. [To View an Example. Click Here](#)

**CONSULTANT FEES (FEDERAL)**

| Name of Consultant | Service Provided | Computation |            |          | Cost |
|--------------------|------------------|-------------|------------|----------|------|
|                    |                  | Fee         | Basis      | Quantity |      |
|                    |                  |             | 8 Hour Day |          | \$0  |
| SUBTOTAL           |                  |             |            |          | \$0  |

**CONSULTANT FEES NARRATIVE (FEDERAL)**

**CONSULTANT FEES (NON-FEDERAL)**

| Name of Consultant | Service Provided | Computation |            |          | Cost |
|--------------------|------------------|-------------|------------|----------|------|
|                    |                  | Fee         | Basis      | Quantity |      |
|                    |                  |             | 8 Hour Day |          | \$0  |
| <b>SUBTOTAL</b>    |                  |             |            |          | \$0  |

**CONSULTANT FEES NARRATIVE (NON-FEDERAL)**

**Consultant Expenses:** List all expenses to be paid from the grant to the individual consultants in addition to their fees (i.e., travel, meals, lodging, etc.). This includes travel expenses for anyone who is not an employee of the applicant such as participants, volunteers, partners, etc.

**CONSULTANT EXPENSES (FEDERAL)**

| Purpose of Travel | Location | Computation     |           |                |          |                  |                 | Cost   |      |
|-------------------|----------|-----------------|-----------|----------------|----------|------------------|-----------------|--------|------|
|                   |          | Item            | Cost Rate | Basis for Rate | Quantity | Number of People | Number of Trips |        | Cost |
|                   |          | Lodging         |           | Night          |          |                  |                 | \$0.00 |      |
|                   |          | Meals           |           | Day            |          |                  |                 | \$0.00 |      |
|                   |          | Mileage         |           | Mile           |          |                  |                 | \$0.00 |      |
|                   |          | Transportation: |           | Round-trip     |          |                  |                 | \$0.00 |      |
|                   |          | Local Travel    |           |                |          |                  |                 | \$0.00 |      |
|                   |          | Other           |           |                |          |                  |                 | \$0.00 |      |
|                   |          | Subtotal        |           |                |          |                  |                 | \$0.00 | \$0  |
| SUBTOTAL          |          |                 |           |                |          |                  |                 |        | \$0  |
| FEDERAL TOTAL     |          |                 |           |                |          |                  |                 |        | \$0  |

**CONSULTANT EXPENSES NARRATIVE (FEDERAL)**

**CONSULTANT EXPENSES (NON-FEDERAL)**

| Purpose of Travel | Location | Computation     |           |                |          |                  |                 | Cost   |      |
|-------------------|----------|-----------------|-----------|----------------|----------|------------------|-----------------|--------|------|
|                   |          | Item            | Cost Rate | Basis for Rate | Quantity | Number of People | Number of Trips |        | Cost |
|                   |          | Lodging         |           | Night          |          |                  |                 | \$0.00 |      |
|                   |          | Meals           |           | Day            |          |                  |                 | \$0.00 |      |
|                   |          | Mileage         |           | Mile           |          |                  |                 | \$0.00 |      |
|                   |          | Transportation: |           | Round-trip     |          |                  |                 | \$0.00 |      |
|                   |          | Local Travel    |           |                |          |                  |                 | \$0.00 |      |
|                   |          | Other           |           |                |          |                  |                 | \$0.00 |      |
|                   |          | Subtotal        |           |                |          |                  |                 | \$0.00 | \$0  |
| SUBTOTAL          |          |                 |           |                |          |                  |                 |        | \$0  |
| NON-FEDERAL TOTAL |          |                 |           |                |          |                  |                 |        | \$0  |

**CONSULTANT EXPENSES NARRATIVE (NON-FEDERAL)**

|                   |     |
|-------------------|-----|
|                   |     |
| TOTAL CONSULTANTS | \$0 |

**Contracts:** Provide a description of the product or service to be procured by contract and an estimate of the cost. Applicants are encouraged to promote free and open competition in awarding contracts. A separate justification must be provided for sole source contracts in excess of \$150,000. A sole source contract may not be awarded to a commercial organization that is ineligible to receive a direct award. Note: This budget category may include subawards.

**CONTRACTS (FEDERAL)**

| Item          | Cost |
|---------------|------|
|               |      |
| FEDERAL TOTAL | \$0  |

**CONTRACTS NARRATIVE (FEDERAL)**

|  |
|--|
|  |
|--|

I. **Indirect Costs** – Indirect costs are allowed if the applicant has a Federally approved indirect cost rate. A copy of the rate approval, (a fully executed, negotiated agreement ), must be attached. If the applicant does not have an approved rate, one can be requested by contacting the applicant's cognizant Federal agency , or the applicant may elect to charge a de minimis rate of 10% of modified total direct costs as indicated in 2 CFR Part 200.414f . If the applicant's accounting system permits, costs may be allocated in the direct cost categories. (Use whole numbers as the indirect rate, an example is an indirect rate of 15.73% should be shown as 15.73) [To View an Example, Click Here](#)

**INDIRECT COSTS (FEDERAL)**

| Description          | Computation  |      | Cost            |
|----------------------|--------------|------|-----------------|
|                      | Base         | Rate |                 |
| Indirect costs       | \$250,000.00 | 9.09 | \$22,725        |
| <b>FEDERAL TOTAL</b> |              |      | <b>\$22,725</b> |

**INDIRECT COSTS NARRATIVE (FEDERAL)**

Indirect costs are based on Federally approved rate of 9.09%.

**INDIRECT COSTS (NON-FEDERAL)**

| Description       | Computation |      | Cost |
|-------------------|-------------|------|------|
|                   | Base        | Rate |      |
|                   |             |      | \$0  |
|                   |             |      | \$0  |
| NON-FEDERAL TOTAL |             |      | \$0  |

**INDIRECT COSTS NARRATIVE (NON-FEDERAL)**

|                      |          |
|----------------------|----------|
| TOTAL INDIRECT COSTS | \$22,725 |
|----------------------|----------|

**Budget Summary** – When you have completed the budget worksheet, transfer the totals for each category to the spaces below. Compute the total direct costs and the total project costs. Indicate the amount of Federal funds requested and the amount of non-Federal funds that will support the project.

| Budget Category            | Federal Request  | Non-Federal Amounts | Total            |
|----------------------------|------------------|---------------------|------------------|
| A. Personnel               | \$0              | \$0                 | \$0              |
| B. Fringe Benefits         | \$0              | \$0                 | \$0              |
| C. Travel                  | \$0              | \$0                 | \$0              |
| D. Equipment               | \$227,275        | \$133,039           | \$360,314        |
| E. Supplies                | \$0              | \$0                 | \$0              |
| F. Construction            | \$0              | \$0                 | \$0              |
| G. Consultants/Contracts   | \$0              | \$0                 | \$0              |
| H. Other                   | \$0              | \$0                 | \$0              |
| Total Direct Costs         | \$227,275        | \$133,039           | \$360,314        |
| I. Indirect Costs          | \$22,725         | \$0                 | \$22,725         |
| <b>TOTAL PROJECT COSTS</b> | <b>\$250,000</b> | <b>\$133,039</b>    | <b>\$383,039</b> |

|                           |           |
|---------------------------|-----------|
| <b>Federal Request</b>    | \$250,000 |
| <b>Non-Federal Amount</b> | \$133,039 |
| <b>Total Project Cost</b> | \$383,039 |

*Public Reporting Burden*

*Paperwork Reduction Act Notice: Under the Paperwork Reduction Act, a person is not required to respond to a collection of information unless it displays a current valid OMB control number. We try to create forms and instructions that are accurate, can be easily understood, and which impose the least possible burden on you to provide us with information. The estimated average time to complete and file this application is four (4) hours per application. If you have comments regarding the accuracy of this estimate, or suggestions for making this form simpler, you can write the Office of Justice Programs, Office of the Chief Financial Officer, 810 Seventh Street, NW, Washington, DC 20531; and to the Public Use Reports Project, 1121-0188, Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503.*

## DISCLOSURE OF LOBBYING ACTIVITIES

Complete this form to disclose lobbying activities pursuant to 31 U.S.C. 1352

Approved by OMB

0348-0046

(See reverse for public burden disclosure.)

|   |   |   |
|---|---|---|
| <b>1. Type of Federal Action:</b><br><input checked="" type="checkbox"/> a. contract<br><input type="checkbox"/> b. grant<br><input type="checkbox"/> c. cooperative agreement<br><input type="checkbox"/> d. loan<br><input type="checkbox"/> e. loan guarantee<br><input type="checkbox"/> f. loan insurance  | <b>2. Status of Federal Action:</b><br><input checked="" type="checkbox"/> a. bid/offer/application<br><input type="checkbox"/> b. initial award<br><input type="checkbox"/> c. post-award        | <b>3. Report Type:</b><br><input checked="" type="checkbox"/> a. initial filing<br><input type="checkbox"/> b. material change<br><b>For Material Change Only:</b><br>year _____ quarter _____<br>date of last report _____ |
| <b>4. Name and Address of Reporting Entity:</b><br><input checked="" type="checkbox"/> Prime <input type="checkbox"/> Subawardee<br>Tier _____, if known:<br>Metropolitan Nashville Police Department<br>600 Murfreesboro Pike, P.O. Box 196399<br>Nashville TN. 37219-6399<br><br>Congressional District, if known: 5  | <b>5. If Reporting Entity in No. 4 is a Subawardee, Enter Name and Address of Prime:</b><br>N/A<br><br>Congressional District, if known:  |   |
| <b>6. Federal Department/Agency:</b><br>U.S. Department of Justice<br>Office of Justice Programs<br>National Institute of Justice   | <b>7. Federal Program Name/Description:</b><br><br>CFDA Number, if applicable: 16.741   |   |
| <b>8. Federal Action Number, if known:</b><br>2019-90248-TN-DN  | <b>9. Award Amount, if known:</b><br>\$ 250,000.00  |   |
| <b>10. a. Name and Address of Lobbying Registrant</b><br>(if individual, last name, first name, MI):<br>N/A   | <b>b. Individuals Performing Services (including address if different from No. 10a)</b><br>(last name, first name, MI):<br>N/A  |   |
| <b>11.</b> Information requested through this form is authorized by title 31 U.S.C. section 1352. This disclosure of lobbying activities is a material representation of fact upon which reliance was placed by the tier above when this transaction was made or entered into. This disclosure is required pursuant to 31 U.S.C. 1352. This information will be reported to the Congress semi-annually and will be available for public inspection. Any person who fails to file the required disclosure shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure. | Signature: <u>Jim Stephens</u><br>Print Name: <u>Jim Stephens</u><br>Title: <u>Lieutenant, MNPD Strategic Development Division</u><br>Telephone No.: <u>(615) 880-2850</u> Date: <u>4/19/2019</u> |   |
| <b>Federal Use Only:</b>  |   | Authorized for Local Reproduction<br>Standard Form LLL (Rev. 7-97)  |

## INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a followup report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, State and zip code of the lobbying registrant under the Lobbying Disclosure Act of 1995 engaged by the reporting entity identified in item 4 to influence the covered Federal action.  
  
(b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).
11. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB Control Number. The valid OMB control number for this information collection is OMB No. 0348-0046. Public reporting burden for this collection of information is estimated to average 10 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, DC 20503.



# CERTIFICATE OF ACCREDITATION

**ANSI-ASQ National Accreditation Board**  
2000 Regency Parkway, Suite 430, Cary, NC 27518

This is to certify that

**Metro Nashville Police Department Crime Laboratory**

has been assessed by ANAB  
and meets the requirements of

**ISO/IEC 17025:2005**

**ANAB 17025:2005 Forensic Science Testing Laboratories  
Accreditation Requirements:2017**

**FBI Quality Assurance Standards for Forensic Testing Laboratories:2011**

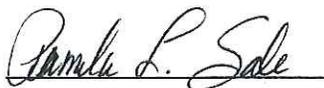
while demonstrating technical competence in the field of

**FORENSIC TESTING**

Refer to the accompanying Scope of Accreditation for information  
regarding the types of tests to which this accreditation applies

Certificate Number: FT-0062

Valid to: 01/31/2023



Pamela L. Sale  
Vice President, Forensics





**ANSI-ASQ National Accreditation Board**

**SCOPE OF ACCREDITATION TO:  
ISO/IEC 17025:2005**

**ANAB 17025:2005 Forensic Science Testing Laboratories Accreditation Requirements:2017  
FBI Quality Assurance Standards for Forensic Testing Laboratories:2011**

**Metro Nashville Police Department Crime Laboratory**

400 Myatt Drive, Suite 200  
Madison, TN 37115

**FORENSIC TESTING**

Valid to: January 31, 2023

Certificate Number: FT-0062

| <b>Discipline: Biology</b>                          |   |  |  |
|---|---|--|--|
| <b>Component/Parameter or Characteristic Tested</b> | <b>Test Method</b>  | <b>Items Tested</b>                          | <b>Key Equipment or Technology</b>   |
| Collection  | Forensic Biology Quality Manual – Evidence Handling; Forensic Biology Technical Procedures Manual (FBU TPM) – Sample Preparation                      | Physical Evidence                            | Refer to Method  |
| DNA-STR   | Flexible Scope <sup>1</sup>   | Blood, Saliva, Hair, Semen, Epithelial Cells | Robotic Extraction, Q-PCR, Thermal Cycler, Capillary Electrophoresis, Liquid Handler, Data Analysis Software |
| Body Fluid Identification                           | FBU TPM – Leeds Spectral Vision, Phenolphthalein, RSID Blood Test, Acid Phosphatase Mapping Test, Microscopic Examination for Sperm, ABACard p30 Test | Blood, Semen                                 | Refer to Method  |
| Individual Characteristic Database                  | CODIS Manual – DNA Profile Entry, Searching the Database, Match Management  | DNA Profiles                                 | Combined DNA Index System (CODIS)  |



| <b>Discipline: Firearms and Toolmarks</b>           |   |  |                                    |
|---|---|--|------------------------------------|
| <b>Component/Parameter or Characteristic Tested</b> | <b>Test Method</b>  | <b>Items Tested</b>  | <b>Key Equipment or Technology</b> |
| Collection  | Firearms/Toolmark Technical Procedure Manual (FTIU TPM) – Test Firing   | Physical Evidence  | Refer to Method                    |
| Physical Comparison                                 | FTIU TPM – Physical Examination and Classification of Firearms; Malfunctioning Firearm; Bullet Classification and Examination; Caliber Determination; Cartridge case/Shotshell case Classification and Examination; Shotshell Component Classification and Examination; Microscopic Comparison; Physical Examination and Classification of Tools and Toolmarks; Toolmark Test Standards and Casting | Firearm, Firearm Components, Toolmark, Toolmark Components | Comparison Microscope              |
| Determination of Functionality                      | FTIU TPM – Physical Examination and Classification of Firearms; Testing Firing; Rusted Firearm; Malfunctioning Firearm; Automatic Firearm   | Firearm  | Refer to Method                    |
| Length Measurement                                  | FTIU TPM - Barrel and Overall Length Measuring  | Firearm  | Refer to Method                    |
| Serial Number Restoration                           | FTIU TPM – Serial Number Restoration  | Physical Evidence  | Refer to Method                    |
| Distance Determination                              | FTIU TPM – Testing Firing; Distance Determination   | Firearm, Firearm Components                                | Refer to Method                    |



|                                    |   |                             |   |
|------------------------------------|---|-----------------------------|---|
| Product (Make/Model) Determination | FTIU TPM – Physical Examination and Classification of Firearms; Bullet Classification and Examination; Cartridge case/Shotshell case Classification and Examination; Shotshell Component Classification and Examination | Firearm, Firearm Components | General Rifling Characteristics (GRC)                     |
| Individual Characteristic Database | FTIU TPM – NIBIN Method   | Firearm, Firearm Components | National Integrated Ballistic Information Network (NIBIN) |

**Discipline: Friction Ridge**

| Component/Parameter or Characteristic Tested | Test Method   | Items Tested  | Key Equipment or Technology                        |
|--|---|---|--|
| Enhancement                                  | Latent Print Technical Procedures Manual (LPU TPM) – Submission and Processing of Latent Digital Images | Patent, Latent, Plastic   | Visual, Photoshop, Photography                     |
| Physical Comparison                          | LPU TPM – Blind Verification; Determining Workability; Identifications; Workable Submissions (ACE-V)    | Patent, Latent, or Plastic to a Known; Known to Known; Unknown to Unknown | Refer to Method                                    |
| Individual Characteristic Database           | LPU TPM – AFIS Processing; AFIS Hits  | Patent, Latent, Plastic or a Known  | Automated Fingerprint Identification System (AFIS) |

**Discipline: Seized Drugs**

| Component/Parameter or Characteristic Tested | Test Method  | Items Tested             | Key Equipment or Technology  |
|--|--|--------------------------|--|
| Qualitative Determination                    | Flexible Scope <sup>1</sup>                                | Solid, Liquid, Botanical | Macroscopic Exam; Microscopic Exam; Logo Identification; Color Spot Tests; Thin Layer, Gas and Liquid Chromatography; Mass Spectrometry; Ultraviolet and Infrared Spectroscopy |
| Weight Measurement                           | Drug Identification Procedures Manual – Weighing Practices | Solid, Liquid, Botanical | Balance  |



| Discipline: Toxicology                       |                             |              |   |
|--|-----------------------------|--------------|---|
| Component/Parameter or Characteristic Tested | Test Method                 | Items Tested | Key Equipment or Technology                           |
| Qualitative Determination                    | Flexible Scope <sup>1</sup> | Blood        | Immunoassay, Liquid Chromatography, Mass Spectrometry |
| Quantitative Measurement                     | Flexible Scope <sup>1</sup> | Blood        | Gas and Liquid Chromatography, Mass Spectrometry      |

Note 1: A flexible scope has been granted for this component/parameter or characteristic tested. ANAB has assessed the competence required to develop, validate, and perform quality assurance within this provided service. New or modified methods for the item(s) and equipment/technology(ies) listed in this row on the Scope of Accreditation may be introduced. New measurement principles, item(s), and technology(ies) will require evaluation by ANAB prior to granting a scope extension. Contact the forensic service provider for information on the specific test method in use at any point in time and utilized for accredited testing work.



Pamela L. Sale  
Vice President, Forensics





**METROPOLITAN NASHVILLE POLICE DEPARTMENT  
FORENSIC SERVICES DIVISION  
CRIME LABORATORY**

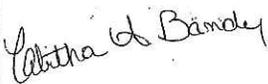
April 8, 2019

To whomever this may concern,

The Metropolitan Nashville Police Department Crime Laboratory

1. Is an existing crime laboratory that conducts analysis of DNA samples
  - The Metropolitan Nashville Police Department Crime Laboratory exists under the Metropolitan Nashville Police Department, which is governed by the Metro Government of Nashville & Davidson County, and is a Metropolitan government laboratory.
  - The Metropolitan Nashville Police Department Crime Laboratory Forensic Biology Unit was established in 2015.
2. Is accredited by a nonprofit professional organization actively involved in forensic science that is nationally recognized within the forensic science community
  - The Metropolitan Nashville Police Department Crime Laboratory is accredited by ANAB to ISO/IEC 17025:2005, ANAB 17025:2005 Forensic Science Testing Laboratories Accreditation Requirements 2017, and FBI Quality Assurance Standards for Forensic Testing Laboratories:2011.
3. Participates in external audits, not less than once every two (2) years, that demonstrate compliance with the requirements of the Quality Assurance Standards established by the Director of the Federal Bureau of Investigation
  - External audits occurred in 2015, 2017, and 2018.
4. Will enter into the Combined DNA Index System (CODIS) all eligible DNA profiles obtained with funding from this program and, where applicable, uploaded to the National DNA Index System (NDIS)
5. Participates in the National DNA Index System (NDIS), or has an agreement with an NDIS participating laboratory to upload its data
6. Follows NDIS DNA Data Acceptance Standards for all profiles uploaded to NDIS
7. Ensures that all DNA analysis performed under this program will be maintained under applicable federal privacy requirements

Sincerely,

|   |   |
|---|---|
|  | Digitally signed by Tabitha Bandy<br>DN: cn=Tabitha Bandy, o, ou=MNPD,<br>email=tabitha.bandy@nashville.gov,<br>c=US<br>Date: 2019.04.16 09:08:09 -05'00' |
|---|---|

Tabitha Bandy  
DNA Technical Leader  
Metropolitan Nashville Police Department  
Crime Laboratory  
Ph: 615-880-1274

Attached:  
Laboratory Accreditation Certificate  
FBI QAS 2015; FBI QAS 2017; FBI QAS 2018



**METROPOLITAN NASHVILLE POLICE DEPARTMENT  
FORENSIC SERVICES DIVISION  
CRIME LABORATORY**

April 8, 2019

To whomever this may concern,

Federal funds will be used to supplement existing State and local funds for program activities and will not supplant those funds that have been appropriated for the same purpose.

Sincerely,

**Julia Hooper**  
**2019.04.18 06:47:26 -05'00'**

Julia Hooper  
Interim Laboratory Director  
Metropolitan Nashville Police Department  
Crime Laboratory  
Ph. 615-862-7432



**METROPOLITAN NASHVILLE POLICE DEPARTMENT  
FORENSIC SERVICES DIVISION  
CRIME LABORATORY**

April 8, 2019

To whomever this may concern,

The Metropolitan Nashville Police Department Crime Laboratory does not employ a fee for service model or otherwise accept compensation from external organizations or jurisdictions to conduct DNA sample testing.

Sincerely,

**Julia Hooper**  
**2019.04.18 06:48:33 -05'00'**

Julia Hooper  
Interim Laboratory Director  
Metropolitan Nashville Police Department  
Crime Laboratory  
Ph: 615-862-7432

The National Institute of Justice Grants Programs Checklist  
Instructions:

1. Complete the following information below: Applicant Name, Point of Contact Name, POC signature, Date Submitted, Application/Grant Number, and Grant Program.
2. Complete the Grants Programs Checklist, starting on page 2.
3. Return this document in electronic format with your application.

**Applicant Name:** Metro Nashville Police Department Crime Laboratory

**Point of Contact Name:** Lt. James Stephens

**POC signature:** 

**Date Submitted:** 4/19/19

**Application/Grant Number:** 2019-90248-TN-DN

**Grant Program:** FY 2019 DNA Capacity Enhancement for Backlog Reduction  
(CEBR) Program (Formula)

**TCG Technical Recommendation:**

**NIJ Approval:**

**National Institute of Justice Grants Program Checklist**

| <b>Resource</b>   | <b>Concern</b>  | <b>Yes or No</b> | <b>Comments</b> |
|---|---|------------------|-----------------|
| <b>Air Quality</b>  | Does the project comply with state air quality standards for all criteria pollutants?   | N/A              |                 |
|   | Is the project located in an area designated by the EPA as in attainment for the seven criteria pollutants?   | N/A              |                 |
|   | Would the action produce minimal emissions (100 tons per year or less for each of the seven criteria pollutants and/or does not exceed 10% of an area's total emissions)? | N/A              |                 |
|   | Would potential exposure to chemical emissions in a laboratory be controlled through the use of a biological hood?  | N/A              |                 |
|   | Would the project only produce emissions that do not impede the area's conformity with the State Implementation Plan under the Clean Air Act?                             | N/A              |                 |
| <b>Significance Criteria</b>  |   |                  |                 |
| <i>An impact would be considered significant if pollutant emissions result in exposure of people, wildlife, or vegetation to ambient air that does not meet the standards established under the Clean Air Act, or interfere with state ambient air quality standards.</i>   |   |                  |                 |
| <b>Resource</b><br><b>Geology, Topography, Soils (includes Farmland Protection)</b>   | <b>Concern</b><br>Would there be compliance with local soil erosion mitigation measures in construction and renovation projects?  | N/A              |                 |
|   | Would the project avoid erosion and deposition, compacting soils in fragile environments, or altering the character of soils over a large area?                           | N/A              |                 |
|   | Would the project comply with the Farmland Protection Policy Act?   | N/A              |                 |
| <b>Significance Criteria</b>  |   |                  |                 |
| <i>An action would cause a significant impact if soil erosion produced gulying, damage to vegetation, or a sustained increase in sedimentation in streams. This includes a substantial loss of soil, and/or a substantial decrease in soil stability and permeability. Also, significant impacts can occur when soils are substantially disrupted, displaced, compacted or covered over. An action would also constitute a significant impact if the action caused ground fracturing, folding, subsidence, or instability. Impacts associated with soil contamination would be significant if the affected area was no longer able to support its current function or vegetative cover.</i> |   |                  |                 |

| Resource   | Concern   | Yes or No | Comments |
|--|---|-----------|----------|
| Water Resources (Water Quality, Surface Water, Wetlands, Floodplains, Coastal Barrier Resources, Wild and Scenic Rivers)   | Would project activities avoid contamination, sedimentation, or otherwise significantly affecting the water quality or hydrology of a nearby surface water body?  | N/A       |          |
|  | Would changes to surface water quality or hydrology be confined to the immediate project area?  | N/A       |          |
|  | Does the project ensure that local and state regulations concerning stormwater runoff are followed?   | N/A       |          |
|  | During construction activities, would all state, local, and tribal regulations concerning erosion controls, runoff abatement, and vegetation removal be followed? | N/A       |          |
|  | During construction activities, would proper hazardous spill procedures be in place to minimize impacts of spills on water quality?                               | N/A       |          |
|  | Would the project avoid affecting a designated Wild and Scenic River in any manner?   | N/A       |          |
|  | Would the project avoid affecting any portion of a 100-year or 500-year floodplain or jurisdictional wetland?   | N/A       |          |
| <b>Significance Criteria</b>   |   |           |          |
| <i>Impacts on water resources would be considered significant if effluent or pollutant emissions result in exposure of people, wildlife, or vegetation to surface or ground waters that do not meet the standards established under the Clean Water Act, or interfere with state water quality standards.</i>  |   |           |          |
| <i>An action would cause a significant impact on wetlands and floodplains if the soil structure, hydrology or the vegetation of more than 1/4 acre (1/10 ha) of a wetland would be altered, or a floodplain area is altered enough to present a reasonable flood danger to the area, causes the degradation or loss of habitat for populations indigenous to the floodplain area, or prohibits farming activities.</i> |   |           |          |
| Resource   | Concern   | Yes or No | Comments |
| Natural Environment (Wildlife, Habitat, and Vegetation)  | Would the project avoid causing more than a short-term change in the composition, structure, or density of vegetation?  | N/A       |          |
|  | Would the project avoid causing more than temporary disturbance or relocation of wildlife?  | N/A       |          |
|  | Would the project avoid impacting current or future wildlife or vegetation biodiversity or species composition?   | N/A       |          |

|  |  |                  |                 |
|--|--|------------------|-----------------|
|  | Would the project insure that the potential for the establishment of non-native plant species within disturbed areas created by this project would be minimal? | N/A              |                 |
|  | Would project construction occur in an area other than a unique or sensitive plant community?  | N/A              |                 |
|  | Would the project avoid extirpating any plants or animals from the project area?   | N/A              |                 |
| <b>Significance Criteria</b>   |  |                  |                 |
| <i>An action would cause a significant impact if any changes to native vegetation extend beyond a small area and affect the viability of a plant species population or vegetation community. Full recovery would not occur in a reasonable time, considering the size of the project and the affected resource's natural state.</i>  |  |                  |                 |
| <i>An action would cause a significant impact if any changes affect a large portion of a wildlife population and the viability of that population. Full recovery would not occur in a reasonable time, considering the size of the project and the affected species' natural state.</i>  |  |                  |                 |
| <i>An action would cause a significant impact if the degradation or loss of habitat is sufficient to cause native wildlife populations to leave or avoid the area.</i>   |  |                  |                 |
| <b>Resource</b>  | <b>Concern</b>   | <b>Yes or No</b> | <b>Comments</b> |
| <b>Endangered Species</b>  | Would the project avoid impacts on T&E species or critical habitat?  | N/A              |                 |
|  | Is the project area free of any Federal or state listed T&E species or critical habitat, as determined by consultation with FWS or NMFS?                       | N/A              |                 |
|  | Would the project avoid impacting any areas in or adjacent to habitat for rare, threatened, or endangered species?   | N/A              |                 |
|  | If the project is expected to adversely affect a listed species, would mitigation measures be employed that would successfully avoid such effects?             | N/A              |                 |
| <b>Significance Criteria</b>   |  |                  |                 |
| <i>Any effect to a federally listed species or its critical habitat would be so small that it would not be of any measurable or perceptible consequence to the protected individual or its population. This effect would equate to a "no effect" or "not likely to adversely affect" determination in U.S. Fish and Wildlife Service terms. Anything else would be considered significant.</i> |  |                  |                 |

| Resource   | Concern  | Yes or No | Comments |
|--|--|-----------|----------|
| <b>Historic Preservation</b>   | Is the project site free of any historic structures, archeological concerns, or other cultural resource issues, as determined by consultation with the SHPO?   | N/A       |          |
|  | Would the project avoid affecting any NRHP listed properties, or properties that are eligible for listing?   | N/A       |          |
|  | Would the project occur within an existing facility that is not considered historic, as determined by consultation with the SHPO?  | N/A       |          |
|  | If project activities are determined to impact cultural resources as defined by Section 106, would mitigation steps as outlined in Section 106 be followed?  | N/A       |          |
| <b>Significance Criteria</b>   |  |           |          |
| <i>An impact would be significant if an effect occurs that may diminish the integrity of, cause a substantial adverse change in the significance of, or directly or indirectly destroy a cultural resource. This effect would equate to an "adverse effect" determination for purposes of Section 106.</i> |  |           |          |
| <b>Land Use</b>  | Concern  | Yes or No | Comments |
|  | Would the project comply with local zoning and development ordinances (apply for rezoning if needed)?  | N/A       |          |
|  | Would the project comply with local comprehensive and development plans?   | N/A       |          |
| <b>Significance Criteria</b>   | Would the project obtain necessary building and occupancy permits from local authorities?  | N/A       |          |
|  | <i>An impact would be significant if a proposed action conflicts with any Federal, regional, State, or local land use plans. If land use patterns are changed in the immediate project area due to a proposed action, the impact would also be considered significant.</i> |           |          |
| <b>Human Population (Socioeconomics and Environmental Justice)</b>   | Concern  | Yes or No | Comments |
|  | Would the project avoid appreciably changing the total population or demographics of the population, housing demand or employment levels, or property values?  | N/A       |          |
|  | Would the project avoid increasing human infrastructure requirements (i.e., new workers need housing and consume additional community resources such as water, electricity, roadways, open space, etc.)?   | N/A       |          |

|   |   |                  |                 |
|---|---|------------------|-----------------|
|   | Would the project avoid displacing existing residents or workers from their homes and communities?  | N/A              |                 |
|   | Would the action avoid areas that have a high proportion of minority residents or residents living below the poverty level?   | N/A              |                 |
|   | If it does occur in such an area, would the grantee ensure that low-income households are not adversely impacted by the project?  | N/A              |                 |
|   | Would environmentally unsafe, unpleasant, or noxious conditions for nearby populations, including release of contaminants into air or water, increased levels of traffic or noise occur only during the period of construction? | N/A              |                 |
| <b>Significance Criteria</b>  |   |                  |                 |
| <i>A change of more than 2 percent of the previously projected level of local employment, population, or gross domestic product would be considered a significant impact on socioeconomic. Also, if school populations decrease by more than 2 percent, revenues decrease by more than 2 percent, and if vacancy rate increases by more than 2 percent, that would constitute a significant impact.</i>   |   |                  |                 |
| <i>A significant impact on environmental justice would occur if a disproportionate amount of minority and/or low-income populations were adversely affected by the project.</i>   |   |                  |                 |
| <b>Resource</b>   | <b>Concern</b>  | <b>Yes or No</b> | <b>Comments</b> |
| <b>Noise</b>  | Would project activities avoid noise impacts to sensitive receptors?  | N/A              |                 |
|   | If noise levels during construction projects exceed existing background sounds temporarily, would the project insure that they do not exceed applicable noise standards?  | N/A              |                 |
|   | Would operation of a newly constructed facility avoid producing noise levels that would disturb people or displace wildlife?  | N/A              |                 |
| <b>Significance Criteria</b>  |   |                  |                 |
| <i>Sounds levels of 65 dBA are considered annoying to most individuals, while constant or repeated exposure to sounds of 90 dBA or higher can lead to significant impacts. Noise levels are significant if they exceed ambient noise level standards determined by the federal, state, and/or local governments. An impact would be considered significant if there is sustained exposure of sensitive receptors to a DNL of greater than 65 dBA.</i> |   |                  |                 |

| Resource   | Concern  | Yes or No | Comments |
|--|--|-----------|----------|
| Energy   | Would the demand on the region's energy supply be negligible (for projects occurring within existing facilities that may require additional energy)? | N/A       |          |
|  | Would the project comply with regulations for electricity and gas provisions?  | N/A       |          |
|  | Would the project avoid the wasteful, inefficient and unnecessary consumption of energy?   | N/A       |          |
| <b>Significance Criteria</b>   |  |           |          |
| <i>Significant impacts to energy would occur if a proposed project were to create a substantial increase in the level of demand for energy supplies and/or use energy in a wasteful, inefficient, excessive or unnecessary manner.</i> |  |           |          |
| Resource   | Concern  | Yes or No | Comments |
| Solid Waste Management   | Would any solid (or liquid) waste that is created by the project, including hazardous waste and construction debris, be disposed of properly?        | N/A       |          |
|  | Would laboratories maintain safe and adequate storage and disposal procedures for hazardous waste and chemicals?                                     | N/A       |          |
| <b>Significance Criteria</b>   |  |           |          |
| <i>An action would cause a significant impact if it would increase the generation of solid or hazardous waste beyond the capacity to safely handle and dispose of that waste.</i>  |  |           |          |
| Resource   | Concern  | Yes or No | Comments |
| Transportation   | Would the project avoid generating new traffic over the long-term?   | N/A       |          |
|  | Would the project avoid creating an additional need for parking?   | N/A       |          |
|  | Would the project avoid short- or long-term decreases in the level of service of a roadway?  | N/A       |          |
|  | Would the project ensure unrestrained movement of emergency vehicles?  | N/A       |          |
|  | Would the project avoid conflicts with planned transportation projects or adopted public transportation policies?                                    | N/A       |          |

|   |  |                  |                 |
|---|--|------------------|-----------------|
|   | Would the project avoid causing noticeable deterioration of local roadway surfaces?  | N/A              |                 |
| <b>Significance Criteria</b>  |  |                  |                 |
| <i>A significant impact to transportation would be a traffic increase which is predicted to upset the normal flow of traffic, create the need for major road repair as a result of the action, or generate traffic levels requiring the expansion of existing roadways or facilities.</i> |  |                  |                 |
| <b>Resource</b>   | <b>Concern</b>   | <b>Yes or No</b> | <b>Comments</b> |
| <b>State Environmental Policy Act</b>   | Would the project occur in states other than Arkansas, California, Connecticut, District of Columbia, Georgia, Guam, Hawaii, Indiana, Maryland, Massachusetts, Minnesota, Montana, Nevada, New Jersey, New York, North Carolina, Puerto Rico, South Dakota, Virginia, Washington, or Wisconsin? If so, the project would not require compliance with a state environmental policy act. | Yes              |                 |
| <b>Intergovernmental Review and Other Federal Agency Reaction to the Project</b>  | Would grantees partnering with other federal agencies, or whose project may affect another federal agency consult and coordinate with that entity and conduct intergovernmental review as necessary?   | N/A              |                 |
| <b>Cumulative Impacts</b>   | Would cumulative impacts be less than significant for all resources affected by the project?   | N/A              |                 |



**METROPOLITAN NASHVILLE POLICE DEPARTMENT  
FORENSIC SERVICES DIVISION  
CRIME LABORATORY**

April 8, 2019

To whomever this may concern,

The Metropolitan Nashville Police Department Crime Laboratory does not have (and is not proposed as a subrecipient under) any pending applications submitted within the last 12 months for federally-funded grants or cooperative agreements (or for subawards under federal grants or cooperative agreements) that request funding to support the same project being proposed in this application to OJP and that would cover all identical cost items outlined in the budget submitted as part of this application.

Sincerely,

**Julia Hooper**  
**2019.04.18 06:47:57 -05'00'**

Julia Hooper  
Interim Laboratory Director  
Metropolitan Nashville Police Department  
Crime Laboratory  
Ph: 615-862-7432

## **APPENDIX I**

**2019 DNA Capacity Enhancement for Backlog  
Reduction (CEBR) Program**

**Key MNPD Program Personnel**

## **SUMMARY OF PROFESSIONAL QUALIFICATIONS**

**Julia C. Hooper – Interim Lab Director**

### **EDUCATION**

Bachelor of Science degree, Middle Tennessee State University - 1974

### **FORENSIC TRAINING**

Fingerprint Identification - Institute of Applied Science - 1976  
Fingerprint Classification & Identification, FBI @ TN Law Enforcement Academy - 1976  
Tennessee Division IAI Training Seminar - Sex Crimes Investigation - 1978  
Tennessee Division IAI Training Seminar - Death Investigation - 1979  
Advanced Latent Fingerprint Techniques - FBI @ Metro Police Academy - 1980  
Administrative Advanced Latent Fingerprint Techniques - FBI Academy Quantico, VA - 1981  
Crime Scene Investigation Seminar - National Law Enforcement Institute – Atlanta, GA - 1982  
Forensic Laser Technology - Omnicrome Products – Nashville, TN - 1988  
Tennessee Division IAI Training Seminar - Testimony/AFIS Seminar - 1988  
International Association for Identification Educational Conference – Nashville, TN - 1990  
Latent Photography Course, FBI @ /FBI Academy Quantico, VA - 1992  
AFIS Latent Identification Training, NEC – Nashville, TN - 1995  
Live Scan System Manager Training, DBI – Nashville, TN - 1995  
NEC AFIS Internet Training Conference – Arlington, TX - 1995  
NEC AFIS Internet Training Conference – Nashville, TN - 2000  
TN Division IAI Training Seminar – Nashville, TN - 2003  
Ridgeology Science Workshop – Nashville, TN - 2004  
AFIS Latent GWSL Training, NEC – Nashville, TN - 2004  
AFIS NSW, GWST Training, NEC – Nashville, TN - 2004  
Tennessee Division IAI Training Seminar – Nashville, TN - 2004  
Palm Print Training – Ron Smith – Nashville, TN - 2004  
Tennessee Division IAI Training Seminar – Nashville, TN - 2005  
NEC Palmprint Methods and Operations – Nashville, TN - 2006  
Tennessee Division IAI Training Seminar – Nashville, TN - 2006  
Advanced Palm Print Comparison Techniques – Nashville, TN - 2007  
Tennessee Division IAI Training Seminar – Nashville, TN – 2007, 2008, 2009, 2011, 2012  
NEC AFIS Internet Training Conference – Chicago, IL - 2008  
FBI Daubert Training Seminar – Nashville, TN - 2010  
ASCLD/LAB Prep Course – San Diego, CA - 2010  
RTI-NIJ On-line Training Ethics I & II – 2011  
NEC AFIS Internet Training Conference – Henderson, NV - 2011  
FBI Advanced Comparison Techniques – Nashville, TN - 2011  
Analysis of Distortion in Latent Prints – Nashville, TN - 2012  
Universal Latent Workstation Training WVU FSI – Nashville, TN - 2012  
Scientific Analysis: Applying ACE-V and Daubert to Testimony - WVU FSI – Nashville, TN - 2012  
ASCLD/LAB International Assessor Training – Franklin, TN - 2013  
AFIS Integra User Training – Nashville, TN – 2014  
LIMS User Training – Nashville, TN - 2014  
Understanding Basic Statistical Concepts - NIJ RTI - 8/26/14  
Measurement Traceability ASCLD LAB Assessor Training 7/22/15  
ASCLD LAB Technical Assessor Refresher Training 7/28/15  
Universal Latent Workstation Workshop Patricia Mason, FBI Nashville TN 9/22-23/15  
New Paradigm Fingerprint Reporting w/out Individualization - NIJ RTI - 7/14/2016  
Expert Witness Testimony Techniques - RSA - Nashville TN April 14-15, 2016  
TN Division IAI Educational Conference - Nashville TN June 7-9, 2016  
Exclusionology: Standards and Reducing Errors – Nashville TN April 1-12, 2017  
Essentials of Latent Print Examination – Nashville TN April 17-21, 2017

## **SUMMARY OF PROFESSIONAL QUALIFICATIONS**

**Julia C. Hooper – Interim Lab Director**

### **MISCELLANEOUS TRAINING**

Peer Advocate Training - 1987  
ROCIC Criminal Intelligence Analysis Techniques - 1990  
Coaching & Counseling - 1991  
Effective Supervisory Practices - 1991  
UT Management Development Training - 1993-94  
Team Building - 1993  
Performance Evaluations - 1998  
Effective Supervisory Practices Review I – 2001  
Effective Supervisory Practices Review II - 2002  
Substance Abuse, Diversity, Coaching & Counseling – 2002  
Sexual Harassment Awareness Training for Supervisor – 2004  
Metro Management Institute – 2010  
Strategic Management for Crime Lab Managers – 2011

### **CERTIFICATIONS/AWARDS**

|   |                                     |
|---|-------------------------------------|
| Certificate of Commendation                               | Metropolitan Police Department 1981 |
| Honorary Member   | Tennessee General Assembly 1982     |
| Certificate of Commendation                               | Metropolitan Police Department 1985 |
| Exemplary Service Award                                   | Metropolitan Police Department 1993 |
| Commendation for Service of Excellence Chief's Coin Award | Metropolitan Police Department 2006 |

NCIC Certified  
POST Certified Instructor  
Certified Latent Print Examiner International Association for Identification 1981  
Certified Ten Print Examiner International Association for Identification 2008  
Certified Technical Assessor ASCLD LAB 2015

### **PROFESSIONAL MEMBERSHIPS**

International Association for Identification – Life Active Member  
Tennessee Division International Association for Identification

### **PROFESSIONAL EXPERIENCE**

Forensic Services Division - Metropolitan Nashville Police Department – 1975 to present

1975-1988 - Assigned to various duties in the Division, including fingerprinting/photographing of arrestees, fingerprint classification, crime scene investigations, processing evidence for latent prints, and AFIS processing. Primary duties involved latent analysis and comparison.

1988 - Promoted to Fingerprint Technician Supervisor, responsible as shift supervisor for personnel involved in fingerprint classification, photographic processing, latent evidence processing, latent analysis and comparison, and AFIS processing.

1997 - Assigned as Latent Unit Supervisor, responsible for supervision of personnel involved in latent analysis/comparison and AFIS processing.

September 2018 to February 2019 - Assistant Director, Metro Nashville Police Department Crime Lab

March 2019 to current - Interim Director, Metro Nashville Police Department Crime Lab

## CURRICULUM VITAE

### **Amanda Sweet**

amanda.sweet@nashville.gov  
Acting Assistant Director  
MNPD Crime Lab

#### Education:

|  |   |
|--|---|
| University of Florida,<br>Gainesville FL.                              | Master's of Science Drug Chemistry (2006)<br>Certificate in Toxicology (2005) |
| Eastern Kentucky University,<br>Richmond KY.<br>(Regent's Scholarship) | Bachelor's of Science in Forensic Science<br>Chemistry Option (Spring 2003)   |

#### Professional Experience:

**Acting Assistant Laboratory Director, Metro Nashville Police Department Crime Lab, Nashville, TN. (March 2019-Present)**

- Duties include oversight of laboratory scientific operations. Reviewing and approving forensic units Technical Procedures Manuals and training programs, reviewing and approving implementation of validations of new scientific methods. Assisting with short and long term goals of the laboratory.

**Toxicology Supervisor, Metro Nashville Police Department Crime Lab, Nashville, TN. (Sept. 2013-Feb. 2019)**

- Duties include writing technical procedures and training manuals for the MNPD toxicology unit. Performing and overseeing the analysis of blood for alcohol and drugs in DUI cases.

**Lab Manager, PremierTox Laboratory: Lexington, KY. (February 2013-August 2013)**

- Duties include overseeing daily operations of a CLIA certified laboratory conducting screening and confirmatory testing. Managing employees in data entry, specimen processing, drug extraction, screening, and LCMSMS confirmation.

**Confirmation Coordinator, PremierTox Laboratory : Lexington, KY. (October 2011-February 2013)**

- Duties included overseeing daily operations of the confirmation department with 17 LCMSMS instruments. This involved troubleshooting instrument issues, developing methods, sequencing, data review, and peer review.

**Forensic Scientist Specialist II, Kentucky State Police Toxicology Lab: Frankfort, KY. (June 2009-October 2011)**

- Analyzed biological samples for alcohol and drugs of abuse in DUI cases. Utilized GCMS, GC-FID/NPD instrumentation for analysis following liquid-liquid drug extractions. Job duties also included expert witness testimony.

**Forensic Scientist Specialist I, Kentucky State Police Toxicology Lab: Frankfort, KY.**  
(September 2008-May 2009)

**Forensic Scientist Specialist I, Medical Examiner's Toxicology Lab: Frankfort, KY.**  
(January 2007-August 2008)

- Analyzed postmortem biological specimens for alcohol, drugs, and toxins for purposes of death investigation. Used liquid-liquid and solid phase extractions and analyzed data by GCMS or GC-FID instrumentation. Job duties also included expert witness testimony.

**Forensic Chemist II, Medical Examiner's Toxicology Laboratory: Frankfort, KY.**  
(August 2005- December 2006)

**Chemist II, Medical Examiner's Toxicology Laboratory: Frankfort, KY.**  
(November 2004- July 2005)

**Chemist I, Medical Examiner's Toxicology Laboratory: Frankfort, KY.**  
(June 2003-October 2004)

Relevant Coursework:

**(Eastern Kentucky University):**

- Introduction to Chemistry
- Organic Chemistry I and II
- Principles of Forensic Chemistry
- Inorganic Chemistry
- Forensic Microscopy
- Forensic Toxicology
- Analytical Techniques in Forensic Science
- Quantitative Analysis
- Physical Chemistry

**(University of Florida):**

- Forensic Toxicology I
- General Toxicology
- Toxic Substances
- Laboratory QA/QC
- Forensic Toxicology II
- Xenobiotic Biotransformation
- Scientific Evidence/Statistics
- Principles of Forensic Science
- Medicinal Chem. Drugs of Abuse
- Natural Medicinal Products
- Synthetic Medicinal Chemistry
- Special Topic in Drug Chemistry
- Literature Survey Drug Chemistry

Scientific Techniques and Instrumentation:

- AbSciex 3200 Qtrap (LCMSMS)
- Waters Acquity UPLC (LCMSMS)
- 96 well plate micro SPE extractions

- Thin Layer Chromatography, Gas Chromatography, High Performance Liquid Chromatography
- Infrared Spectrometry, UV-Visible Spectrometry
- Forensic Microscopy
- Mass Spectrometry
- Fluorescence Polarization Immunoassay, Enzyme-Linked ImmunoSorbent Assay
- Co-Oximeter
- Solid Phase/Liquid-Liquid Extractions
- Analysis of biological specimens for drugs of abuse/poisons

Scientific Conferences/ Memberships:

- FORESIGHT User's training, Salt Lake City, UT. (March 2019)
  - ANAB ISO 17025: 2017 and AR3125 Overview, TBI- Nashville (November 2018)
  - Arbinger Institute, Atlanta GA. (May 2018)
  - ASCLD Symposium, Atlanta GA. (May 2018)
  - Society of Forensic Toxicologist's Conference, Boca Raton (2018)
  - LEACT Training, Huntsville AL. (2017)
  - ASMS Conference, San Antonio, TX. (2016)
  - Expert Witness Testimony Techniques for Laboratory Analysts (2016)
  - Borkenstein Drug Course, Tempe, Arizona (2015)
  - ASCLD-Lab Assessors Training, Minneapolis MN. (2015)
  - Society of Forensic Toxicologist's Conference, Grand Rapids Michigan (2014)
  - Society of Forensic Toxicologist's Conference, Orlando FL. (2013)
  - Society of Forensic Toxicologist's Conference, Richmond VA. (2010)
  - Annual Kentucky Coroner's Conference, Louisville KY. (2003-2007)
  - Society of Forensic Toxicologist's Conference, Nashville TN. (2005)
- Society of Forensic Toxicologist's Full Member (2015-Present)  
 AAFS- Student Member (2002-2003) Trainee Affiliate Member (2004-2005)

# Allison Verre

## Curriculum Vitae

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### EDUCATION

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**University of Wisconsin- Madison**  
Bachelor of Science-May 2014  
Major: Biology  
Criminal Justice Certificate

**University of Florida- Gainesville, FL**  
Master of Science in Pharmacy-May 2017  
Major: Pharmaceutical Sciences with a  
concentration in Forensic DNA and Serology

### PROFESSIONAL EXPERIENCE

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#### **Forensic Biology-Forensic Scientist I**

**Metro Nashville Police Department in Nashville, TN**

December 2016-Present

##### *Forensic Biology Unit*

My responsibilities as a Forensic Scientist I within the Forensic Biology Unit include performing serological screening for casework, report writing of serological report and testimony as an expert witness. Additionally, I am authorized to perform DNA processing and analysis and testify as an expert witness to those procedures. I am continuing my training towards DNA interpretation and report writing of DNA casework. I participate in the execution of validations and performance checks in order to benefit the advancement of the unit. I currently serve as the lead liaison between the laboratory and the SANE nurses for distribution and training of sexual assault kit collection.

#### **Forensic Biology Technician,**

**Metro Nashville Police Department in Nashville, TN**

June 2016-December 2016

##### *Forensic Biology Unit*

My responsibilities as a Forensic Biology Technician with the MNPd included the support of the forensic biology unit. I handled the inventory of the laboratory consumables, made reagents for laboratory use, performed the quality control of laboratory reagents, and ensured all of the maintenance on laboratory instruments was completed on a weekly, monthly, quarterly, and annual basis. I was responsible for performing validation studies for various research topics to benefit the Forensic Biology Unit.

**Forensic Program Technician,  
State Crime Laboratory in Madison, WI**

December 2014-May 2016

##### *DNA Databank Unit*

As a Forensic Program Technician (FPT) for the Wisconsin State Crime Lab my duties included providing support to the Databank unit with the sample intake of convicted offenders/arrestee samples for the state of Wisconsin. I took a lead role in the preparation and quality control of the reagents used within the DNA laboratory. I was also responsible for the upkeep of lab maintenance. I participated in lab support as an evidence specialist particularly in aiding in evidence management and secretarial duties of the front desk.

### CONTINUING EDUCATION

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American Academy of Forensic Science, 2018 70<sup>th</sup> Annual Scientific Meeting,  
Seattle Washington (17.50 hours)

Certification of Participation from *An Introduction to Lean Fundamentals and Six Sigma Operational Improvement*

# MELISSA V. OSWALD

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400 Myatt Dr., Suite 200 • Madison, TN 37115 • (615) 880-1276 • melissa.oswald@nashville.gov

## EDUCATION

---

**Florida International University**, Miami, FL

Master of Science in Forensic Science, April 2013

Thesis: Differential Extraction of Equine Epithelial Cells from Fecal Matter Using Pressure Cycling Technology and IPCRp

**Oklahoma State University**, Stillwater, OK

Bachelor of Science in Biological Science, December 2009

Minor in Microbiology, December 2009

## TECHNICAL SKILLS

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- Proficient knowledge of DNA/RNA Extraction, Gel Electrophoresis, PCR, qPCR, dPCR, Fragment Analysis, Sanger Sequencing, and Next-Generation Sequencing
- Extensive experience analyzing several chronic lymphocytic leukemia (CLL) genes, including the TP53 and IgVH genes, and the interpretation of results in order to determine risk potential for clinical trials based on ACMG guidelines
- Ability to troubleshoot and operate laboratory instruments, including the Barocycler NEP 2320; NanoString nCounter® Dx Analysis System; Qiagen EZ1 and QIAcube extraction platforms; QuantStudio 6, ViiA7, and 7500 Real-Time PCR Systems; ABI 310, 3130, and 3500 Genetic Analyzers; and Illumina MiSeq
- Well-versed in TaqMan® Genotyper, AlleleTyper™, GeneMapper®, Mutation Surveyor®, VariantStudio™, and InvivoScribe's LymphoTrack™ software

## PROFESSIONAL EXPERIENCE

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**Metropolitan Nashville Police Department – Crime Laboratory**, Nashville, TN

FORENSIC SCIENTIST I – FORENSIC BIOLOGY UNIT, October 2018 – Present

- Participate in performance checks and quality control of laboratory equipment to further advance the Forensic Biology Unit
- Conduct validations on new equipment and procedures under the direction of the technical leader
- Train in serology and DNA processing and analysis
- Serve as the Crime Laboratory Safety Manager

FORENSIC TECHNICIAN – FORENSIC BIOLOGY UNIT, January 2018 – September 2018

- Performed routine maintenance and performance checks on laboratory equipment while maintaining records and documentation in a compliance management system
- Monitored equipment and supply inventories, and placed orders when necessary
- Prepared reagents and performed quality control tests using standard laboratory equipment

**Aegis Sciences Corporation**, Nashville, TN

MOLECULAR BIOLOGIST II, April 2017 – January 2018

- Executed internal audits of clinical trial work with a commitment to integrity and accountability to uncover discrepancies and confirm proper handling of samples and complete records
- Trained and evaluated molecular biologists' and technicians' ability to handle samples appropriately, manage chains of custody properly, and perform all laboratory assays efficiently
- Performed Next-Generation sequencing of a 10-gene CLL panel followed by analysis and classification of found variants as benign or pathogenic

MOLECULAR BIOLOGIST, April 2015 – April 2017

- Extracted DNA from buccal swabs and amplified resulting products for quantification and SNP analyses used in pharmacogenetic testing to identify poor, intermediate, extensive, and ultra-rapid drug metabolizers
- Performed B-cell isolation from blood and bone marrow, followed by Sanger sequencing of the TP53 gene and Next-Generation sequencing of the IgVH-SHM gene for CLL clinical trials
- Created validation plans, SOPs, and chains of custody in compliance with CLIA, CAP, and FDA standards
- Demonstrated a proven ability to work independently and collaboratively in a dynamic, fast-paced team environment on multiple projects with varying complexities

FORENSIC SPECIAL CHEMIST, December 2013 – April 2015

- Extracted samples from biological specimens including urine, blood, and oral fluid
- Isolated drug metabolites via techniques such as liquid-liquid extraction, solid-phase extraction, supported liquid extraction, and dilute and shoot methods for toxicology analyses
- Carefully monitored and preserved quality of samples, reagents, and chemicals necessary for extraction
- Maintained precise documentation via chain of custody procedures

**RESEARCH EXPERIENCE**

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**International Forensic Research Institute, Florida International University, Miami, FL**

RESEARCH ASSISTANT, January 2011 – May 2013

- Extracted DNA from highly compromised samples, such as soil, hair, feces, tissue, and others
- Optimized equine fecal extractions using the Pressure Cycling Technology (PCT) instrument Barocycler NEP 2320
- Applied the novel Isolation of PCR products (IPCRp) purification method, previously used exclusively for human samples, to compromised equine samples for enhanced determination of profiles
- Gained proficient knowledge in the interpretation of electropherograms to acquire accurate DNA profiles

**West Virginia University Research Corporation – FBI Subcontract, Florida International University, Miami, FL**

RESEARCH ASSISTANT, June 2011 – June 2012

- Assisted in the development of a novel cell collection device for touch samples
- Perfected and optimized DNA collection and PCT extraction techniques in a simulated environment before applying methods to live subjects for validation purposes
- Collected qPCR and genotyping data while interpreting results using statistical tests such as t-tests and ANOVA
- Learned the importance of good laboratory practices and the significance of an Institutional Review Board in research associated with human subjects
- Presented monthly reports and presentations to the Federal Bureau of Investigation with a summary of findings and troubleshooting solutions

**Department of Botany, Oklahoma State University, Stillwater, OK**

LABORATORY TECHNICIAN, May 2009 – July 2010

- Executed crosses on F1 hybrid plants with heightened attention to detail in order to obtain a genetically modified F2 generation for the understanding of genetic inheritance
- Performed plant extractions and PCRs followed by the analysis of microsatellite marker amplifications
- Evaluated and interpreted results acquired through findings and reached appropriate conclusions
- Maintained responsibility for the overall well-being of plants, such as daily watering and pollination
- Reliably obtained and accurately performed duties with limited supervision

## **PUBLICATIONS**

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Deshpande, K., **Villarreal, M.**, Mills, D.K. (2016) "Improved DNA profiles from aged horse feces using pressure cycling technology." *Conservation Genet. Resour.*, 8(4): 487-495.

## **PRESENTATIONS**

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**Co-Author** – Shrecker, J., Roberts, A., **Oswald, M.**, Heltsley, R., Hardison, M., "A Curious Case of Contrary Concentrations: Drug Interactions vs. Genetic Polymorphism" Clinical Laboratory Management Association (CLMA) KnowledgeLab 2017, March 28, 2017, Nashville, TN (poster).

**Co-Author** – Deshpande, K., **Oswald, M.**, Mills, D.K., "Application of 6-plex microsatellite kit in the analysis of aged fecal DNA samples: prospective use in equine slaughter forensic cases" American Academy of Forensic Science, February 24, 2016, Las Vegas, NV (poster).

**Co-Author** – Dimsoski, P., Mendel, J., **Villarreal, M.**, Mills, D.K., McCord, B., "Obtaining genotypes from low copy DNA," Second Annual Forensic Science Symposium, March 15, 2013, Miami, FL (oral presentation).

**Presenter** – **Villarreal, M.**, Dimsoski, P., Mills, D.K., "Differential extraction of equine epithelial cells from fecal matter using Pressure Cycling Technology and IPCRp," Second Annual Forensic Science Symposium, March 14, 2013, Miami, FL (poster).

**Presenter** – **Villarreal, M.**, Mills, D.K., "Differential extraction of host cells from equine fecal matter using Pressure Cycling Technology," Florida Annual Meeting and Exposition Conference, May 18, 2012, Innisbrook, FL (poster).

## **CONTINUING EDUCATION**

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American Academy of Forensic Sciences 71<sup>st</sup> Annual Meeting, Baltimore, Maryland, February 2019 (13 hours)

## Career Summary

Experience in forensic biology casework and databasing in government and private laboratories, nationally and internationally.

## Education

2011-2012, **Master of Science in Pharmacy** (emphasis in Forensic Serology and DNA),  
University of Florida Gainesville

1994-1995, **Bachelor of Science** (Major: Recombinant Genetics / Minor: Chemistry),  
Western Kentucky University

## Chemistry / Instrumentation Training/Experience

Organic Extraction using ethanol precipitation or Filtration (Amicon or Microcon)

Bead extractions (DNA IQ using the Maxwell 16, Chargeswtech using the Biosprint 96 or Kingfisher 96, Qiagen EZ1)

Tecan Genesis RSP 150 and Workstation 200, BSD Punch, and Titertek

Aquarius and Nanodrop Express

Quantifiler, Plexor HY, Profiler Plus, Cofiler, Identifiler, Powerplex 16, Minifiler, Y-filer, Powerplex Fusion and Powerplex Y23

ABI 7000, 7500, 310, 3100, 3130XL, and 3500

Genescan/Genotyper, Genemapper ID, and Genemapper IDX

## Positions Held

**DNA Supervisor/ Technical Leader**, August 2010 - Present

Metro Nashville Police Department

- Selected and supervise staff of six analysts and two technicians
- Perform technical and administrative reviews of casework
- Address and troubleshoot quality, efficiency and technical issues in the Forensic Biology Unit
- Review and develop policies and procedures for the future MNPd crime laboratory, including but not limited to the DNA Quality Assurance Program, Forensic Biology Technical Operating Procedures, and Forensic Biology Training Manual
- Assisted with the development of the floor plans and construction of the DNA Unit of the future MNPd Crime Lab
- Develop budgetary plan, equipment, and supplies for DNA Unit of the future MNPd Crime Lab
- Establish edMNPd LDIS acting as CODIS Administrator/ Alternate CODIS Administrator until December 6, 2016

**DNA Supervisor/ Technical Leader (continued)**

- Liaison between MNPB, Tennessee Bureau of Investigation, disseminating and tracking FBI DNA database (CODIS) hit information for the department
- Manage ordering and purchasing of Forensic Biology Instruments, equipment, and consumables
- Assist MNPB personnel in DNA evidence selection, submission, and outsourcing
- Develop and present for training and informative purposes to MNPB (i.e. in-service, COMSTAT, and individual investigative units including South Precinct detectives and domestic violence), SANE Programs, TN International Association of Identification, TN Arson Investigation School, and Middle Tennessee State University
- Attended monthly Homicide Summits to assist and answer DNA related questions until 2015
- Team member of the Homicide Investigative Review Team (HIRT) until 2015
- Attend professional meetings and training and conduct research on the most current technologies and policies to implement into the future DNA Unit
- Established relationship through meetings and communication with TBI, the District Attorney's office, and the community
- All Duties outlined in 5.2.3 of the FBI Quality Assurance Standards (QAS) for Forensic Biology DNA Testing Laboratories (2011)

**Scientist III/ DNA Lead/ Scientist IV, March 2010 - May 2011**

Joint Expeditionary Forensic Facility (JEFF) BAE Systems based out of King George, VA deployed to Bagram, Afghanistan

- Primary DNA Section liaison to the Joint Expeditionary Forensic Facility (JEFF) Officer in Charge (OIC), Lab Manager, and DNA Technical Leader in Dahlgren, VA communicating issues, challenges, future requirements, and successes of the DNA unit
- Primary coordinator with DNA subject matter experts (SMEs) training and mentoring on lab policies, procedures, and protocols
- Assisted U.S. military and federal attorneys and justices, along with the Afghan court system to integrate DNA analysis into Afghan Rule of Law - Developed and conducted training for six Afghan National scientists from the Ministry of Interior (MOI) on forensic DNA analysis and capabilities
- Performed forensic serology and DNA analysis in order to provide intelligence for U.S. and Coalition Forces in the Afghan Theater of Operation - Documented analysis and established reports of findings
- Performed technical peer and administrative reviews on reports
- Performed troubleshooting on instrumentation (AB 7500, 9700, and 3130 XL), data, and technical issues with DNA analyst's cases
- Prepared weekly situation reports (SIT REP) for the military and administration in Dahlgren, VA
- Recruited prospective employees through seminars and presentations equipment and instruments
- Recruited prospective employees through seminars and presentations

**Scientist III/ DNA Lead/ Scientist IV, March 2010 - May 2011 (continued)**

- Educated U.S. and coalition forces along with contracted law enforcement professionals (LEP's), attorneys and judges (U.S. and Afghan), medical personnel, intelligence analysts, and government officials through briefings and tours about proper evidence collection, submission, the capabilities of the DNA unit, and probative use of DNA in battlefield forensics

- Established and maintained records of evidence and maintenance performed on equipment and instruments

**Forensic DNA Analyst III, May 2006 - March 2010**

Orchid Cellmark Nashville

- Performed forensic serology and DNA analysis in both CODIS and casework for various government agencies in the U.S. and Canada using a variety of different chemistries, instruments, and protocols

- Established and maintained records of evidence and maintenance performed on equipment and instruments

- Documented analysis and established reports of findings

- Provided expert testimony in Ohio, Indiana, and Texas regarding forensic serology and DNA including paternity

- Validated new procedures and technologies (Microcon filtration and Powerplex 16 for casework) including technical write up and development of standard operating procedure

- Developed training modules, conducted training, and evaluated analysts and management on execution of procedures in both forensic serology and DNA for training coordinator

- Performed quality control checks on products and instruments in the laboratory including routine maintenance and troubleshooting procedures

- Performed forensic serological and DNA testing according to various contract specifications and guidelines submitted by the various clients

- Developed guidelines and conducted training on new contract specifications

- Evaluated analyst's court room testimony

- Acted as senior analyst on contracts requiring team processing, processing 300-500 sexual assault cases

- Casework representative on quality assurance team, troubleshooting both quality and technical issues with the Quality Assurance Manager

- Conducted quality control testing on reagents and kits for use in both CODIS and casework

**Forensic Biologist I/II/ Forensic Scientist Specialist, September 2000 - May 2006**

Kentucky State Police

- Performed technical peer and administrative reviews on reports

- Testified in court on scientific findings

- Educated laboratory personnel regarding safety and OSHA regulations

#### Forensic Biologist I/II/ Forensic Scientist Specialist (continued)

- Designed and organized training of law enforcement agencies, attorneys, and medical personnel on the collection and preservation of evidence and capabilities of the Kentucky State Police Forensic Laboratory
- Assisted in interviewing, selecting, and training new employees
- Established and maintained records of evidence and maintenance performed on equipment and instruments
- Recruited prospective employees through seminars, job fairs, and presentations
- Assisted law enforcement agencies in the field
- Performed a variety of chemical, biological, and microscopic techniques in order to identify biological evidence such as blood, urine, saliva, and hair (i.e. Forensic Serology) (Phadebas, Thymophthalein Monophosphate Test, Leucomalachite Green, in addition to serological tests previously listed)
- Perfomed autosomal STR analysis on biological evidence (using DNA IQ and technologies previously listed)
- Documented analysis and established reports of findings
- Designed and organized training of law enforcement agencies, attorneys, and medical personnel on the collection and preservation of evidence and capabilities of the Kentucky State Police Forensic Laboratory
- Assisted in interviewing, selecting, and training new employees
- Educated laboratory personnel regarding safety and OSHA regulations

#### Technical Training

- International Symposium on Human Identity, Phoenix, AZ, September 22-27, 2018 (including NIJ Grant Workshop and High Impact Leadership Workshop)
- Technical Leaders Summit, FBI, Norman, OK, November 13-16, 2017
- 28th International Symposium on Human Identity, Promega, Seattle, WA, October 3-5, 2017
- 3<sup>rd</sup> Annual Technical Lead Summit / 21<sup>st</sup> Annual CODIS Conference, Norman, OK, November 14, 2016
- USA STRmix Training Workshop, Los Angeles, CA, April 19-22, 2016
- 2<sup>nd</sup> Annual Technical Lead Summit / 21<sup>st</sup> Annual CODIS Conference, Norman, OK, November 16-18, 2015
- Technical Leader Workshop, 26<sup>th</sup> International Symposium on Human Identification, Grapevine, TX, October 15, 2015
- 20<sup>th</sup> Annual CODIS Conference, including New CODIS Administrator Training, Norman, OK, November 17-19, 2014
- Y-STR Introduction, Y-STR Statistical Training, Y-STR Interpretation, and Autosomal STR Interpretation and Statistics by Dan Hellwig of Sorenson Forensics, MNPCL Nashville, TN November 4-6, 2014
- Promega Powerplex Fusion Validation Presentation by Craig Nolde of Sorenson Forensics, MNPCL Nashville, TN, October 16, 2014

## Technical Training (continued)

- Promega Plexor HY Validation Presentation, Michael Lin of Sorenson Forensics, MNPD-CL Nashville, TN, August 19, 2014
- EZ1 and Introduction to Plexor HY Validation Presentation by Bobby Sheen and Craig Nolde of Sorenson Forensics, MNPD-CL Nashville, TN July 22, 2014
- DNA Technical Leader Summit, National Institute of Standards and Technology & Federal Bureau of Investigation CODIS Unit, Norman, OK, November 20-21, 2013
- 24th International Symposium on Human Identity, Promega, Atlanta, GA, October 7-10, 2013
- Technology Transition Workshop: A DNA Revolution—Next Generation Technologies, Dr. Art Eisenberg and Dr. Bruce Budowle, University of North Texas Health Science Center, Ft. Worth, TX, May 21-23, 2013
- Introduction to the 3500 Genetic Analyzer and Advanced GMIDX Software Training, Melissa Kotkin, Nashville, TN, March 5-8, 2013
- 18th Annual National CODIS Conference, Norman, OK, November 13-14, 2012
- "Validation of New Techniques and Assays," Susan Greenspoon, Nashville, TN, October 18, 2012
- 23rd International Symposium on Human Identification, Promega, Nashville, TN, October 15-18, 2012
- "Bringing Y-STRs into Your Laboratory: Practical Applications and Data Interpretation," Sorenson Forensics, Nashville, TN, October 15, 2012
- "How to Tackle a DNA Backlog," Chuck Heurich & Minh Nguyen, Nashville, TN, October 14, 2012
- Successfully completed American Society of Crime Laboratory Directors Laboratory Accreditation Board International's Internal Auditor Training Course, Anja Einseln, Memphis, TN March 20-23, 2012
- American Academy of Forensic Sciences 64th Annual Scientific Meeting, Atlanta, GA, February 22-25, 2012
- "Advanced DNA Mixture Interpretation and Statistical Approaches", Debra A. Figarelli / Debra E. Glidewell, Atlanta, GA, February 20-21, 2012
- 17th Annual National Combined DNA Indexing System (CODIS) Conference, Federal Bureau of Investigation, Jacksonville, FL, November 14-17, 2011
- 22nd International Symposium on Human Identification, Promega, National Harbor, MD, October 3-6, 2011
- Technical Leaders Workshop, National Harbor, MD, October 6, 2011
- 21st International Symposium on Human Identification, Promega, San Antonio, TX, October 11-14, 2010
- "Mixture Interpretation Principles, Protocols & Practices Workshop," Dr. John M. Butler, et. al., San Antonio, TX, October 11, 2010
- Promega Presentation, Melissa Schwandt, Orchid Cellmark Nashville, October 6, 2009
- "Mixture Interpretation Principles, Protocols & Practices Workshop," Dr. John M. Butler, et. al., San Antonio, TX, October 11, 2010
- 19th International Symposium on Human Identification, Promega, Hollywood, CA, October 13-16, 2008

## Technical Training (continued)

- Promega Working Group Meeting (Training on Maxwell 16 and Plexor Y), Madison, WI, July 17-18, 2007
- "The Use of Non-Autosomal Markers," HITA/AABB, Hollywood, CA, October 12, 2008
- In-house training at Orchid Cellmark including Microscopy, Sperm Elution Extraction, Low Copy Number DNA, Troubleshooting Capillary Electrophoresis, Forensic Serology, Reduced Relative Fluorescent Units for Casework, Comparison of Short Tandem (STR) kits, What's Going on in Research and Development - Various Validations, Audit Prep, Parentage Testing, Chimerism and Mosaicism, PCR Amplification: Theory and Application, Y-STR's, Mitochondrial DNA, Mixture Interpretation, Accreditation and Audits, Applied Biosystems 7300/7500 Real-time Polymerase Chain Reaction (PCR) Data Systems, Ethics in Forensic Science, Proper Pipetting Techniques, Forensic Statistics, and DNA Forensics Lab and Theory Basics, Nashville, TN, 2006-2008
- "Improved Results from Integrating Real-Time PCR based DNA Quantitation with Amp FLSTR Y-filer PCR Amplification Kit in Sexual Assault Investigations," WebEX training, Nicole Oldroyd Applied Biosystems (ABI), November 2005
- President's DNA Initiative Advanced Training: 3130 Capillary Electrophoresis, 7500 Quantifiler Real-Time PCR, and GeneMapper ID, Marshall University, Huntington, WV, November 7-11, 2005
- 16th International Symposium on Human Identification, Promega, Grapevine, TX, September 27-29, 2005
- GeneMapper ID, WebEx Training, ABI, March 7, 2005
- "Presenting DNA Evidence in Court," Dr. Charlotte Word, Grapevine, TX, September 26, 2005
- YSTR WebEx Training, ABI, January 18, 2005
- GeneMapper ID Training, Catherine Caballero ABI, Kentucky State Police (KSP) Central Laboratory Frankfort, KY, January 11-12, 2005
- In-house DNA Training, KSP Central Laboratory Frankfort, KY, September 1, 2004
- "Basic Evidence Collection Training," Special Agent Tracey L. Riley FBI, September 15-19, 2003
- "Future Trends in Technology," ABI, Cincinnati, OH, August, 2003
- "Bloodstain Pattern Analysis Workshop," Toby Wolson, Miami-Dad Police Department, Miami, FL, December 9-13, 2002
- International Association of Bloodstain Pattern Analysts (IABPA) Annual Training Conference, Harrisburg, PA, October 2-4, 2002
- "Introduction to Hairs," Karen Lanning FBI, Toledo, OH, April 29 - May 3, 2002
- "Future Trends in Technology," ABI, Nashville, TN, December 2001
- Bloodstain Interpretation Workshop, KSP Central Laboratory, Frankfort, KY, June 2001
- Forensic Biology (Serology) Training, KSP Central Laboratory, September 2000 to September 2001

## Conference Presentations

- "What Do the DNA Results Really Mean? The Limitations of Current Forensic DNA Testing," International Crime Scene Investigators Association Conference, Nashville, TN May 17, 2018
- "Powerplex Fusion Artifact and Drop-In Study," Promega Tech Tour, Washington D.C., October 18, 2016
- "Establishing a Metropolitan DNA Unit," 26<sup>th</sup> International Symposium on Human Identification, Technical Leaders Workshop, Grapevine, TX, October 15, 2015
- "Validations and Evaluations of PowerPlex Fusion and Plexor HY," Promega Tech Tour, Orlando, FL May 29, 2015; New York City Office of the County Medical Examiner, New York City, NY June 23, 2015; and Denver, CO, August 11, 2015
- "Validating Promega PowerPlex Fusion using a Veriti Thermal Cycler and 3500 Genetic Analyzer for a New Laboratory" and "Validating Plexor HY with 7500 REal-Time PCR System to Establish Amplification Cut-off and Screen Sexual Assault Kits for the Presence of Male DNA," Promega Tech Tour, Tennessee Bureau of Investigation, Nashville TN, May 13, 2015
- "Battlefield Forensics: The Law Enforcement Community Aiding in Global Military Operations," Tennessee International Association for Identification, Tennessee Bureau of Investigation, Nashville, TN, October 14, 2011
- Poster Presentation: "Comparison of Microvariants at DYS458 in Iraq, Afghanistan, and U.S. Populations," 21st International Symposium on Human Identity, San Antonio, TX, October 1-14, 2010

## Awards and Activities

- NDIS Audit Review Panel January 2018—Present
- ASCLD/LAB-International Assessor 2014 to present
- FBI QAS Auditor 2013 to present
- Courtroom Experience (Paternity - One time 2009 or 2010 Houston, TX; Microscopic Hair Comparison - At least one time 2002 - 2004 Kentucky; Serology - At least ten times 2002 - 2012 Kentucky, Indiana, Texas; DNA - At least five times Kentucky, Indiana, Ohio, Indiana, Texas)
- Coin of Excellence 19th MP Battalion August 2010
- Member of Orchid Cellmark Nashville's Quality Assurance Team 2008 to 2010
- Member of Kentucky State Police Centralized Laboratory Safety Committee August 2005 - May 2006
- Kentucky State Police Civilian Employee Award 2002

## Professional Organizations

- American Academy of Forensic Sciences 2008-Present
- International Association of Bloodstain Pattern Analysts 2003-2006
- Midwestern Association of Forensic Scientists 2001-2006

# Heather L. Watson

## Experience

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3/2011 – Present Metro Nashville Police Department Nashville, TN

### **MNPD Crime Laboratory Business Manager**

- Provides fiscal and HR oversight for the Lab
- Manages capital inventories and maintains vendor relations to assure a seamless supply chain
- Assures all special projects fall within budgetary requirements

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10/2007 – 3/2011 Metro Nashville Finance Department Nashville, TN

### **Strategic Management and Budget Analyst**

- Manage and analyze fiscal reports
- Participate in Metro's budget development process
- Develop, implement, and manage strategic management products

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11/2006 – 10/2007 Tennessee Department of Health Nashville, TN

### **HIV Prevention Community Services Director**

- Develop, implement, and manage TN's federal HIV prevention grant
- Manage state-wide contracts with regional health departments, lead agencies, and community based organizations
- Identify trends and provide guidance to enhance HIV prevention programming in TN

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7/2005 – 10/2006 Tennessee Department of Health Nashville, TN

### **HIV Prevention Evaluation Consultant**

- Manage state-wide contracts with regional health departments, lead agencies, and community based organizations
- Provide technical assistance and capacity building to regional health departments, lead agencies, community based organizations, and planning groups
- Assist in the development of TN's federal HIV prevention grant

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4/2002 – 6/2005 Tennessee Department of Health Nashville, TN

### **HIV Prevention Administrator**

- Assist in the development of TN's federal HIV prevention grant
- Assist in the management of state-wide contracts with regional health departments, lead agencies, and community based organizations

## Education

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2006 Tennessee State University Nashville, TN

### **Master of Public Administration**

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2005 Tennessee State University Nashville, TN

### **Graduate Certificate in Health Administration and Planning**

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2000 Lipscomb University Nashville, TN

### **Bachelor of Science in Government and Public Administration**

# Sofia Arichavala

## EDUCATION

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### **Bachelor of Science in Biology**

**August 2013-May 2017**

*Murray State University, Murray, KY*

GPA: 3.82/4.00

Minor: Chemistry

- Dean's list for 8 semesters.

## EXPERIENCE

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### **Forensic Technician**

**May 2018-Present**

*Metro Nashville Police Department*

- Conduct performance checks, recalibrations, and maintains records of laboratory equipment.
- Conduct quality control testing on reagents and supplies
- Maintain technical forensic laboratory files and records of findings
- Establish and maintain records to support the quality assurance system
- Perform physical inventories of equipment and supplies
- Clean and sterilize laboratory utensils, equipment, and facilities
- Attain and maintain proficiency according to the laboratory quality system
- Ensure compliance with safety rules and regulations, the quality assurance system, and laboratory and departmental policies
- Maintain knowledge of currently used technologies and procedures through extensive reading of forensic literature and training
- Troubleshoot laboratory instruments, equipment, and procedures
- Conduct research under the direction of the technical leader to improve the methods and practices of the Forensic Biology Unit

### **Clinical Trial Assistant**

**October 2017-May 2018**

*ICON Clinical Research Organization, Brentwood, Tennessee.*

- Provide administrative and project tracking support to the Project Manager and Clinical Trial Manager
- Assist in the processing of data collection forms and quality control
- Coordinate ordering/dispatch and tracking of trial materials
- Run, review and analyze study reports for accuracy
- Tracking and distribution of safety reports.

### **Teaching Assistant**

**January 2017-May 2017**

*Biological Inquiry and Analysis, Department of Biology, Murray State University*

- Prepare materials for experiments.
- Supervise and instruct students during their experiments.
- Guide students and help them improve their research paper writing skills.

### **Intern**

**May 2016-June 2016**

*Conservation of the Ecosystem of the Galapagos Islands, FUNDAR-Galapagos, Galapagos Islands-Ecuador.*

- Lead group discussion with farmers about the importance of organic agriculture.
- Restore degraded ecosystems and promote sustainable agriculture.
- Environmental education for children in schools.

**Intern****May 2015-June 2015***Medical Examiner Intern, Forensic Science Research Center, Cuenca-Ecuador.*

- Observation of autopsies while assisting staff in taking notes or photographs.
- Assisting in general office duties including inventorying medications and specimens.
- Observation of toxicological practices.

**ACTIVITIES/LEADERSHIPS**

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**Organization President****2016-2017***International Student Organization, Murray State University.*

- Hold monthly meetings with advisor, officers, and student members
- Propose ideas and hold events for students.
- Actively join in campus activities to build a bridge between international and american students

**Associate Justice****2016-2017***Student Government Association – Judicial Board, Murray State University.*

- Interpret SGA constitution.
- Serve as the appellate board for parking tickets and hearing of appeals.

**Student Ambassador****January 2015-December 2016***Recruitment and Admission Department, Murray State University*

- Give campus tours to prospective students and their families.
- Support in marketing and promotion of the university.

**KEY SKILLS**

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- **Language:** English and Spanish, proficient.
- **Equipment:** Qiagen EZ1, QIAcube, 7500 Real-Time PCR, ABI3500, NMR, Western blot, Mass spectrometry.
- **Computer:** Proficient in Microsoft Office (Word, Excel, PowerPoint)

**KRISTIN JOY HEIL, PMP**  
Greater Nashville Area  
(615) 351.9709  
Kristin.Heil@Nashville.Gov

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**SUMMARY**

*Project Management professional with extensive experience in healthcare, government, and IT. Agile adapter with the ability to partner with and lead diverse teams. Possesses a strong desire to learn and a passion to see an initiative through to successful completion.*

**PROFESSIONAL EXPERIENCE**

**METRO NASHVILLE POLICE DEPARTMENT CRIME LABORATORY**

**2014 to PRESENT**

*Information Technology Manager*

Manage all information technology operations for the MNPd forensic crime laboratory. Serves as the project manager in all IT projects. Purchases all technology needs for the lab. Provides technical consultation services to management. Acts as a liaison between scientists, management, Police IT, MetroITS, vendor support and customers. Investigates and solves systematic and workflow problems. Writes documentation for laboratory software systems, electronic security policies, and training for departmental use. Trains, or establishes training programs, for departmental use with lab staff. Provides hardware support for computers, printers, instrumentation, scanners and other technology hardware. Works with vendors to provide software updates and system configurations. Builds custom reports used for services tracking, turn-around, productivity, output and other requests as received.

**VANDERBILT UNIVERSITY MEDICAL CENTER**

**2011 to 2013**

*Application Support Analyst*

Provide ad-hoc reports through Crystal Reporting and Microsoft Access queries. Responsible for database parameter updates. Actively sought process improvement and recommend potential solutions based on technical capabilities, system interfaces, and application limitations. Assist with design and development of enhancements to existing systems and new system implementations.

- Created testing scenarios and performed testing for software implementations as well as system interfaces and process improvement resolution.
- Train Materials, Nursing, and SuperUser staff on new software and processes.
- Develop training documents and manuals for end-users and peers.
- Administrator for MMIS, McKesson and clinician materials tracking system, Omnicell
- Proficiency in GHX registration and contract center and SSRS Reporting.
- Write, photograph, design, and maintain Supply Chain website.

*Special Projects*

- Systematically coordinated the transition of the physical lab storeroom relocation. Trained 60+ users on the new ordering/receiving process, coordinated with supply chain materials staff, and worked with all vendors to ensure accuracy in delivery of supplies to the new location.
- Implemented Global Location Number (GLN) transition between our GPO, MMIS system, and vendors. Location review of over 2000 ship-to locations.

- Collaborated with software programmer to interview end users, design, beta test, and train 200 + users on application affecting the entire medical center. Process improvement project designed to streamline the capital application request and approval process.
- Coordinated the delivery of five projects to adequately prepare teams for medical center unit moves, renovations and transitions. Systematically update users, units, supplies, and licensing.

**ST. THOMAS HOSPITAL,****2008 to 2011*****Supply and System Analyst***

Support and maintain the St. Thomas Materials Management application (Lawson). Acted as a liaison between Finance, Purchasing, Billing, and Materials Management Information Systems (MMIS) departments. Performed advanced analytical duties to support MMIS. Communicate effectively with vendors to ensure the accuracy of all Bill Only purchases.

- Developed analytical and problem solving skills related to the control of inventory and supply chain.
- Trained employees on how to enter FDA implants.
- Cross-trained as an OR Implant Coordinator.

**EDUCATION****Project Management Institute**

Project Management Professional (PMP) Certified, 2016

**Vanderbilt University, Nashville, TN**

Masters in Liberal Arts and Science, 2013

**Rochester College, Rochester Hills, MI**

Business Administration, BS, 2007

**PROFESSIONAL DEVELOPMENT**

Global Six Sigma USA Jumpstart, 2019

Tableau Data for the Analyst, 2017

Tableau Desktop I: Fundamentals, 2016

Project Management, Project Management Academy, 2016

Certified Qualtrax System Administrator, 2016

Microsoft Technology Associate (MTA), 2016

Crystal Reports Training, 2015, 2018

Project Management, SANS Institute, 2014

Certified JusticeTrax LIMS System Administrator, 2014

Certified Omnicell Optiflex System Administrator, 2012