

**U.S. Department of Justice**

Office of Justice Programs

*National Institute of Justice*



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## **Forensic DNA Backlog Reduction Program: Fiscal Year 2010 Awards and Abstracts**

This document lists grants awarded by NIJ in 2010 under the Forensic DNA Backlog Reduction Program. The abstracts are reproduced here exactly as they were submitted by the grantee.

**FY 2010 Recipient Name:** State of Alaska Department of Public Safety

**Award Number:** 2010-DN-BX-K061

**Award Amount:** \$207,143

**Abstract:** The State of Alaska's Scientific Crime Detection Laboratory (SCDL), the only crime laboratory in the state, receives requests to perform biological testing on more than 400 forensic cases per year, with approximately 75% of those continuing on for DNA analysis. The laboratory also receives approximately 500 convicted offender and arrestee samples per month for DNA analysis and entry into the Combined DNA Index System (CODIS). These services are available at no cost to all law enforcement agencies within the State.

The primary objective of this program is to decrease the Alaska SCDL's backlog (requests for DNA analysis exceeding 30 days) of forensic DNA casework. The laboratory intends to achieve this by using funds from this award to purchase consumables and reagents for forensic DNA casework analysis, validation and training.

During this award period the laboratory anticipates completing training for 3 additional casework analysts and therefore, expects to see a decrease in forensic DNA sample turnaround time and an increase in the capacity of the laboratory. Both of these outcomes will serve to decrease the backlog of forensic DNA cases. The laboratory anticipates that at least 208 requests for DNA analysis can be completed using funds from this award (\$207,139 in supplies (and other costs) / \$1,000 per case = 208 cases).

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**FY 2010 Recipient Name:** Alabama Department of Forensic Sciences

**Award Number:** 2010-DN-BX-K115

**Award Amount:** \$977,422

**Abstract:** The Alabama Department of Forensic Sciences (ADFS) is respectfully requesting Federal assistance to reduce forensic DNA sample turnaround time, increase the throughput of Alabama's Forensic DNA laboratories, and reduce the statewide backlog of forensic DNA casework. Alabama's plan for the F10 Forensic DNA Backlog Reduction Program is designed to realize specific improvements to Alabama's DNA laboratory infrastructure and analysis capacity so that Alabama DNA samples may be processed efficiently and cost effectively, thereby preventing future DNA backlogs while aiding the criminal justice system realize the full potential of DNA technology.

ADFS is a well established Crime Laboratory system with a 75 year history of service to the citizens of the State of Alabama. ADFS is the only forensic science system present within the State of Alabama and is charged with the responsibility of analyzing biological evidence recovered by all local and state law enforcement agencies statewide. The scientific analysis of

Forensic DNA cases is carried out in four (4) Regional Casework DNA Laboratories, situated across the State. ADFS laboratories are accredited by ASCLD/LAB and undergo external audits at least every two (2) years, in accordance with the FBI Director's Quality Assurance Standards for Forensic DNA Testing Laboratories. Since ADFS is the only Agency tasked with the responsibility of analyzing DNA evidence in criminal cases statewide, ADFS is an essential and integral component of the judicial process within the State of Alabama. The effectiveness of Alabama's judicial system is severely eroded without the timely scientific analysis of Forensic DNA cases by the Department of Forensic Sciences.

Project Plan: The Goals of this grant initiative are to utilize Federal Funding in a cost-effective and efficient manner to improve the infrastructure and analysis capacity of the DNA Laboratories within the Alabama Department of Forensic Sciences, as well as utilize Federal funding to demonstrate a marked improvement in the Biology section's turnaround time and realize a reduction in the number of backlogged forensic DNA cases awaiting analyses throughout Alabama. Funding is also respectfully requested for DNA training activities aimed at insuring the Forensic Scientists within the Departments Biology Section remain compliant with the Continuing Education requirement of the FBI Director's Quality Assurance Standards.

Funding for the backlog reduction portion of this initiative will be used by the State of Alabama to perform DNA testing upon prioritized cases using both in-house and contracted DNA testing services, ultimately generating DNA profiles in an efficient and timely manner, while simultaneously reducing the backlog of Forensic DNA casework statewide. All DNA analyses funded under this Program will be conducted either by the ASCLD/LAB accredited ADFS DNA Laboratories or through accredited fee-for-service vendors. All eligible forensic DNA profiles generated from this Program will be entered into the Combined DNA Index System (CODIS) and, where applicable, uploaded to the National DNA Index System (NDIS), in accordance with the solicitation requirement. Each of the four (4) DNA Laboratories of the Alabama Department of Forensic Sciences are NDIS participating laboratories in good standing, further insuring that all profiles generated through this initiative are entered and uploaded to NDIS in a timely manner. Additionally, all DNA analyses performed under this Program will be maintained under the applicable Federal Privacy regulations, in accordance with the solicitation requirement.

Methods for Achieving Goals:

ADFS has a longstanding and successful relationship with the National Institute of Justice (NIJ) and its various DNA Program initiatives. Through the FY 2010 Forensic DNA Backlog Reduction Program, ADFS will expand on the collaborative relationship with the NIJ and continue to utilize Federal funding in a cost effective manner to increase the DNA Laboratory infrastructure while simultaneously improving turnaround time and reducing the backlog of DNA cases throughout Alabama. Systematic strategies are proposed which build upon the substantial experience and success of the ADFS in analyzing DNA casework in-house as well as

through fee-for-service vendor DNA testing laboratories. The State of Alabama's proposal for the FY 2010 Forensic DNA Backlog Reduction Program is focused on a two pronged approach to maximize the impact of Federal funding while meeting the Goals of this Grant initiative. Alabama is confident that it's detailed plan to increase laboratory infrastructure and decrease turn around times and backlogs for forensic DNA cases statewide will be an excellent example of a cost effective and efficient use of Federal dollars to maximize the impact of DNA technology throughout the Criminal Justice System.

Funding from this grant initiative will support the analysis of backlogged Forensic DNA cases through both in-house analyses performed at ADFS DNA Laboratories, as well as through contracted DNA testing services. The ADFS implementation approach plans to utilize the vendor laboratory for DNA testing services, while simultaneously reducing the backlog in-house by utilizing Federal dollars to defray Overtime and DNA supply costs. This two pronged approach will allow the State of Alabama to significantly reduce its backlog of Forensic DNA casework as multiple laboratories will be performing testing upon backlogged forensic cases simultaneously. The realization of this strategic plan will aid in the prevention of future DNA backlogs, help the Criminal Justice System realize the full potential of DNA technology, and in so doing, maximize the impact of Federal funding.

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**FY 2010 Recipient Name:** Arkansas State Crime Laboratory

**Award Number:** 2010-DN-BX-K089

**Award Amount:** \$655,503

**Abstract:** The goal of the Arkansas State Crime Laboratory is to utilize the "Forensic Casework DNA Backlog Reduction Program FY 2010" to decrease turnaround time, increase analyst throughput and decrease the number of backlogged cases awaiting screening for DNA. The objective is to utilize the funds provided in this solicitation for hiring additional personnel to both screen evidence for DNA and to process the evidence for DNA, as well as upgrade the capillary electrophoresis machines to increase throughput and decrease processing time. The Arkansas State Laboratory is requesting funding to hire four (4) additional serologists and one (1) additional DNA analyst. The Arkansas State Crime Laboratory is also requesting funds to purchase three (3) new 3500 Genetic Analyzers. These machines have the ability to electrophorese sample three times faster.

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**FY 2010 Recipient Name:** Arizona Department of Public Safety

**Award Number:** 2010-DN-BX-K123

**Award Amount:** \$529,918

**Abstract:** Background: The Arizona Department of Public Safety (AZ DPS) Crime Laboratory System provides complete DNA casework and database services supporting 295 law enforcement and prosecutorial agencies statewide. Beginning January 1, 2008, the Arizona

Legislature added certain arrestees to the Arizona DNA Database, increasing the number of new samples in the first year by 18,825, a 50% increase. The AZ DPS Regional Crime Laboratories are all accredited by ASCLD/LAB ISO and participate in CODIS and undergo regular external DNA audits.

Current Backlog: On January 1, 2009, the backlogged samples for the Arizona DNA Database, was 50,673, and the backlogged evidence cases for DNA analyses was 2,409 cases. These backlogs are being severely impacted by the dire economic conditions in Arizona, which have resulted in a 15% vacancy rate, elimination of replacement equipment, elimination of all overtime and a \$980,000 DNA database budget reduction.

Bottleneck Analysis: The AZ DPS Crime Laboratory System, through process improvement techniques, has identified its current major DNA processing bottlenecks in its DNA Database and DNA Casework Programs. Lack of high throughput Capillary Electrophoresis (CE) capacity is the bottleneck in database analysis and lack of an efficient male/female separation technique, such as, laser microdissection is the bottleneck in DNA casework. Therefore, DPS proposes in this Grant Request to purchase instrumentation to enhance throughput and timeliness of DNA results.

Project Goals, Objective and Expected Results: The overall goal of the Program, proposed in this Grant Request, is to enhance the capacity of the AZ DPS DNA database and casework sample processing capacity by purchasing a new high throughput CE system and a laser microdissection microscope. Once these are operational, the following enhancements (expected results) are anticipated:

- The average number of days to complete a DNA database result is reduced 25%.
- The average number of days to complete a DNA casework result is reduced 20%.
- The number of DNA database samples that an analyst can process per year increases 25%.
- The number of DNA casework samples that an analyst can process per year increases 20%.
- The average number of DNA database samples that can be analyzed within the 18 months of this grant period is 10,200 additional samples.
- The average number of DNA cases that can be analyzed within the 18 months of this grant period is 395 additional cases.

Implementation Approach: The equipment would be purchased through the Arizona Procurement Process; validated for routine DNA analysis; and implemented for DNA database and DNA casework sample processing once validation is complete.

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**FY 2010 Recipient Name:** Arizona Criminal Justice Commission

**Award Number:** 2010-DN-BX-K113

**Award Amount:** \$815,490

**Abstract:** Through the timely generation of DNA profiles of convicted offenders and processing no-suspect DNA evidence, local law enforcement agencies are able to solve more crimes more quickly, thereby reducing the chance that repeat offenders will go on to commit new crimes during the time they remain at large. Through the DNA Backlog Reduction Grant, a collaborative approach will be taken by the following Arizona full-service forensic laboratories through these police departments: Mesa, Phoenix, Scottsdale and Tucson. The Arizona Criminal Justice Commission, representing these local laboratories and acting as the State Administering Agency (SAA), will coordinate efforts toward the statewide initiative to eliminate existing backlogs.

**Goals:** This application for use of the DNA Backlog Reduction Program grant funding is submitted by the Arizona Criminal Justice Commission acting as the State Administering Agency on behalf of the following local laboratories through these police departments: Mesa, Phoenix, Scottsdale and Tucson. These agencies are committed to establishing the highest standards of laboratory analysis of evidence and are working as a collaborative group focused on establishing improved procedures and reducing DNA case backlogs in the four local laboratories. Funding is currently allocated to each participating agency based upon the number of Uniform Crime Report (UCR), Part 1 violent crimes reported to the Federal Bureau of Investigation (FBI) for 2008.

The Commission will provide grant oversight and be responsible for reporting to the National Institute of Justice (NIJ) on the progress of this grant.

**Objectives:** Program evaluations and measurements will be focused on each laboratory's case-load measuring:

- Reduce the average number of days between submission of a DNA sample to a laboratory and the delivery of the final report to the requesting agency.
- Increase in the DNA analysis throughput for the laboratory.
- Reduce the number of backlogged DNA criminal cases.

**Project Plans:** The Commission will provide grant oversight and be responsible for semi-annual reporting to NIJ on the progress of the grant. Each agency's backlog and capacity will be tracked through the following specific components: cases submitted, cases screened, cases with completed DNA analysis, cases entered into CODIS, and CODIS hits returned from backlog cases.

Methods of Achieving Goals/Reporting Process: Each laboratory will be required to: maintain statistical information, track backlogs in processing DNA for violent and nonviolent cases, report on the impact forensic casework funds have on processing DNA cases.

Each local laboratory will submit quarterly reports to the Arizona Criminal Justice Commission as a grant measurement guideline. The Arizona Criminal Justice Commission will submit a consolidated report to NIJ.

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**FY 2010 Recipient Name:** San Diego County, California

**Award Number:** 2010-DN-BX-K077

**Award Amount:** \$274,261

**Abstract:** The San Diego County Sheriff's Regional Crime Laboratory ("Lab") requests \$274,261 in grant funding to increase its DNA analysis capacity. The funding will be used to purchase an imaging system and to upgrade the Combined DNA Index System (CODIS) computer equipment; maintain equipment; contract for an internal validation of the liquid handling system equipment; attend continuing education seminars; and, for grant administrative oversight.

**Project Goals:** The principal goals of the project are to acquire, maintain, and validate equipment for DNA analysis and CODIS infrastructure. In addition, the Lab will provide continuing education opportunities for the Lab's current DNA analysts.

**Project Objectives:** The objectives of this project are to decrease average turnaround time for a DNA analysis request by 5%, and increase the average number of samples processed per analyst by 5%.

**Project Plans:** As a result of the expected purchases, we expect to achieve the project goals and objectives by the end of the award period.

**Methods of Achieving Project Goals:** After receipt of our award, we will acquire the requested equipment and services through the County's normal purchasing mechanisms. Lab staff will make the necessary procedure modifications to adopt the newly acquired or validated equipment for use in casework.

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**FY 2010 Recipient Name:** Fresno County Sheriff Department, California

**Award Number:** 2010-DN-BX-K093

**Award Amount:** \$120,000

**Abstract:** The geographic location of Fresno County is approximately an equal distance between the major metropolitan areas of San Francisco and Los Angeles in the Central San Joaquin Valley. From east to west, the County's boundaries extend 135 miles, encompassing a

geographical area of 6,007 square miles with the Coast Mountain Range to the west and the Sierra Nevada Mountain Range to the east. Fresno County has a population of 899,348 that is expected to grow 3.4% annually in the future.

The Fresno County Sheriff's Department Forensic Laboratory provides services for the Sheriff's Department. The forensic laboratory has three Criminalists that are trained and qualified to perform STR analysis. Due to staffing needs and the growing demand for DNA analysis, the Fresno County Sheriff's Department Forensic Laboratory needs to find a way to reduce backlogged DNA casework. The Sheriff's Department has 50 unsolved homicide/rape cases that need to be examined for potential DNA evidence. DNA cases can take over ten month, from request to final report, due to the size of our staff. The forensic laboratory is seeking \$120,000 in federal funds to decrease the backlog of cases from the DNA unit. This will be accomplished by using grant funds to send backlogged DNA cases out to be analyzed by accredited fee-for-service vendors for analysis of evidence that may contain DNA. The result will be a reduction in the number of forensic cases awaiting DNA analysis.

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**FY 2010 Recipient Name:** Kern County District Attorney, California

**Award Number:** 2010-DN-BX-K088

**Award Amount:** \$217,581

**Abstract:** This plan supports the Kern County District Attorney-Forensic Science Division's (LAB) on-going effort to reduce the backlogged DNA cases, turn-around-time, maintain capacity, and eliminate bottlenecks. The LAB proposes the use of the National Institute of Justice FY2010 Grant (NIJ2010) to provide continued funding of two trained and experienced DNA Forensic Scientists, proposed for lay-off in County's FY2010/11 budget, and the acquisition of one microscope to eliminate a bottleneck at the preliminary screening of evidence.

The LAB is located in California's central valley and serves as the regional crime laboratory for the County. The County is facing a declining economy, which threatens the LAB'S ability to perform as designed and to retain trained qualified forensic scientists. The Chief Administrative Officer (CAO) has issued a preliminary FY 2010/11 Budget recommendation to the Board of Supervisors, which would in essence eliminate eight (8) Forensic Scientists (Criminalists) positions. Currently the LAB is staffed at 100% of the approved Criminalists due in part to funding provided by NIJ2009. This staffing provides the LAB'S DNA section the ability to (a) increase capacity; (b) reduce backlog; and (c) meet the demands of the judicial system it serves.

The LAB has experienced measurable progress through the automation, sophisticated technology, equipment, training and staff provided by NIJ DNA Grants. The proposed lay-offs would jeopardize the progress, devastate the DNA Unit of the LAB, and could possibly allow some violent crimes to go unsolved.



The goals and objectives are to: allow the LAB to maintain its capacity; reduce backlog and turn around time; eliminate a known backlog; and (2) retain two NIJ2009 funded DNA Criminalists with funding from the NIJ2010 Backlog Reduction Grant.

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**FY 2010 Recipient Name:** County of Ventura, California

**Award Number:** 2010-DN-BX-K087

**Award Amount:** \$100,102

**Abstract:** In this grant application the Forensic Sciences Laboratory (FSL) is requesting funds to continue funding a fixed term DNA position and to fund overtime to help reduce the backlog. The DNA position was established two years ago through this grant. The overtime will help us expedite the analysis of DNA cases.

Senior examiners have been required to perform screening tests, which could equally well be performed by a junior person. The FSL would like to continue employment of a Forensic Scientist I/II in the DNA section, thereby allowing the senior staff to concentrate on the more complex DNA cases. This individual will help screen evidence and conduct DNA analysis.

The overall objective of this grant is to improve DNA analysis capacity and to reduce the number of backlogged DNA cases. The laboratory's goals are 1) to reduce the turn around time by twenty percent (from 164 days to 130 days) between submission of a DNA sample to the laboratory to having a report written for the submitting agency. 2) To reduce the number of pending cases by forty seven. This will result in an additional 20 to 30 DNA profiles being entered into CODIS with an anticipated result of four to eight CODIS hits.

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**FY 2010 Recipient Name:** City of Los Angeles, California

**Award Number:** 2010-DN-BX-K104

**Award Amount:** \$1,246,257

**Abstract:** The Los Angeles Police Department (LAPD) intends to reduce its backlog by 649 cases and increase its laboratory capacity to meet existing and future demand for Deoxyribonucleic Acid (DNA) screening and testing. To accomplish its objectives, the LAPD will provide training, purchase equipment, and procure contract laboratory services for DNA analysis and validations. Moreover, this strategy reduces bottlenecks that have in the past, prevented the LAPD from meeting its goals.

Training will ensure that Criminalists acquire the skills necessary to perform DNA typing, and will enable those, who are already trained, to meet continuing education requirements that are necessary to keep the laboratory's accreditation. Once newly hired Criminalists are trained, they can perform evidence screening that will improve efficiency and reduce turnaround time. Those

Criminalists who are already trained to perform DNA typing will be able to increase the number of samples that they analyze, further reducing turnaround time.

To improve the overall capacity of the DNA analysis, the LAPD has reorganized the testing process. Team “batching” of casework samples has improved the laboratory throughput and now requires additional robotic platforms to further increase capacity. A high throughput DNA extraction and purification robot will fulfill such needs. In addition, the LAPD intends to purchase equipment to track and control casework files. Radio Frequency Identification (RFID) tracking will enable the LAPD to improve upon administrative efficiency and document control. Equipment for these purposes will be purchased through this grant.

Contract laboratory services will allow the LAPD to reduce its existing backlog that continues to grow due to an increasing demand for DNA analysis while ensuring that its Criminalists have the time to receive training and work on active cases. Services to be provided by the contract laboratory will include DNA typing but will not include the data review for Combined DNA Index System (CODIS) upload. Since Criminalists will have the opportunity to work on active cases, the number of cases that will eventually become part of the backlog will be fewer. The LAPD will also utilize contract laboratory services to validate equipment and analytical platforms. The LAPD intends to validate new polymerase chain reaction (PCR) technologies that will provide an improvement in sensitivity, mixture interpretation, and resilience against sample inhibition.

The LAPD will also reduce its backlog by providing Criminalists with overtime to screen and/or type samples; to send out casework to City approved contract laboratories; and, to perform CODIS review prior to uploading profiles. Because screening and/or DNA typing of samples from active cases takes priority over other duties, Criminalists now scramble to find the time to analyze and upload results from the contract labs to the CODIS database. By providing overtime, the LAPD will ensure that the Criminalists can perform the CODIS review.

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**FY 2010 Recipient Name:** City of San Diego, California

**Award Number:** 2010-DN-BX-K080

**Award Amount:** \$283,722

**Abstract:** The DNA Laboratory currently has a staff of 16 personnel consisting of a supervisor, technical manager, 11 DNA criminalists, 2 criminalists dedicated to the screening of evidence, and one recently hired grant funded criminalist that will be ultimately trained in DNA analysis. The demand for DNA typing services in the City of San Diego continues to increase steadily as homicide and sex crime submissions remain steady while there has been a dramatic increase in submission of lesser felonies and property crimes. Meanwhile California and federal legislation’s expansion of the collection of DNA samples to all felon arrestees and illegal residents has

enhanced the CODIS database as a paramount tool in solving suspectless crimes. We anticipate that there will likely be approximately 440 cases in the backlog on September 30, 2010 and using current data this is likely to consist of 60 sex crimes, 80 homicides, and 300 cases consisting of other criminal charges. We seek \$283,722 in grant funds in an attempt to achieve some important specific goals. Our casework goal is to analyze 160 burglaries, 30 robberies, 50 sex crimes, 20 other assaults and 20 homicide requests that are currently backlogged. In order to achieve this goal, we will train a grant-funded criminalist starting in June of 2010 first in the screening of biological evidence and later in DNA analysis. Our plan will also make use of 1,697 hours of overtime to be used by DNA staff to augment our total typing capacity. Given the focus on casework completion under this grant, it will also be our goal to reduce case backlog and turnaround time. Funding is also sought to comply with DNA training requirements, purchase a digital microscope, partially equip the new criminalist with the basic tools for the position, and to purchase storage components for the forensic biology computer network.

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**FY 2010 Recipient Name:** Sacramento County, California

**Award Number:** 2010-DN-BX-K071

**Award Amount:** \$435,152

**Abstract:** The Sacramento County District Attorney Laboratory of Forensic Services' (hereafter referred to as the crime laboratory) goal for the FY 2010 Forensic DNA Backlog Reduction Program is to partner with local police agencies and the District Attorney to target and solve those criminal cases that will have the most significant and positive impact on the community. The emphasis of the crime laboratory's 2010 Backlog Reduction grant operations will be on the timely analysis of DNA-related evidence from violent crime cases and the reduction of backlogged DNA cases across the spectrum of reported crimes.

The objectives of the crime laboratory to be completed during the eighteen month operation of the FY 2010 Forensic DNA Backlog Reduction Program includes directing the grant-funded DNA analysts to conduct the screening and DNA profiling of biological evidence recovered from each case, and upload the eligible profiles to CODIS.

The crime laboratory has prepared a plan that provides funding for two DNA analyst positions, a temporary contract consultant to conduct administrative level reviews of DNA casework reports prior to release, participation in a vendor-validation program for instruments and continuing education and training opportunities for DNA analysts in the Crime Laboratory's Biology Unit. The Project Director will closely monitor the grant to ensure progress is being made in all aspects of the grant.

In order to achieve the goal and objectives outlined for this grant period the crime laboratory will employ two (2) criminalists who will each be responsible for screening evidence associated with

violent crime cases for probative evidence and profiling samples and uploading profiles to CODIS from those cases that screened positive for biological fluids.

Equipment and new technologies installed under previous backlog reduction grant programs still require the completion of validation prior to use in DNA casework. The laboratory will participate in a vendor-validation service program to expedite utilization of the new technologies.

As with previous DNA grants, the FY 2010 Forensic DNA Backlog Reduction Program will provide funds for training and continuing education of the DNA analysts per the FBI's quality assurance standards for forensic testing laboratories. Providing continuing education and advanced training to the laboratory's experienced DNA analysts will ensure that the crime laboratory delivers the best possible, most efficient, and timely forensic DNA analytical services to Sacramento County.

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**FY 2010 Recipient Name:** County of San Bernardino, California

**Award Number:** 2010-DN-BX-K116

**Award Amount:** \$492,591

**Abstract:** The overall goals of the San Bernardino County Sheriff's Department Crime Laboratory are to reduce DNA case turnaround time, increase the throughput of our DNA laboratory and reduce DNA casework backlog. Our objectives will be to fund overtime and supplies to complete backlogged DNA cases, fund necessary training, contract Y-STR validation and to significantly enhance the laboratory equipment and instrumentation with purchases including a Hamilton Microlab Starlet, a Hamilton Nimbus, an Applied Biosystems 7500 Real Time PCR instrument, three air filtered PCR enclosed hoods and three microscopes. This will not only enable us to streamline evidence and DNA sample screening, but will also reduce hands on time, increase number of samples being analyzed at one time and result in a higher throughput.

Our Crime Laboratory has experienced an increase in staff during 2009 and early 2010, which has created limited space for expansion and additional bottlenecks within the lab. This challenge will be met by projected plans that will incorporate the most prudent and efficient use of equipment and supply purchases in order to accommodate staff and attain our goals. The purchase of equipment, allowance for overtime, assistance with validation, supplies and additional training will allow us to reach our goals, while at the same time, staving off anticipated bottlenecks created by our increase in personnel.

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**FY 2010 Recipient Name:** California Department of Justice

**Award Number:** 2010-DN-BX-K050

**Award Amount:** \$1,937,262

**Abstract:** The California Department of Justice (CA DOJ) Bureau of Forensic Services (BFS) seeks funding for \$1,937,262 from an eighteen-month grant solicitation from the National Institute of Justice (NIJ) FY2010 Forensic DNA Backlog Reduction Program. The purpose of the program is to: Reduce the overall turnaround time for the handling, screening, and analysis of forensic DNA samples; increase the throughput of evidence by DNA laboratories; and reduce existing DNA casework backlogs.

The CA DOJ proposes to fulfill the grant requirements by: Hiring and training ten (10) limited-term criminalists, or continue the employment of (10) limited-term criminalists funded by the FY2009 DNA Backlog Reduction Program to handle, screen and analyze forensic DNA samples in order to reduce DNA casework turnaround times; provide overtime for DNA casework backlog reduction; hire an Inter-laboratory Casework Grant Coordinator/Retired Annuitant; provide Validation of Identifiler Plus® DNA typing kits through the purchase of ten (10) kits and overtime for their validation; purchase high-throughput DNA analysis equipment; and purchase of GeneMapper ID-X software to reduce data analysis time.

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**FY 2010 Recipient Name:** Los Angeles County Sheriff's Department, California

**Award Number:** 2010-DN-BX-K100

**Award Amount:** \$1,561,300

**Abstract:** Project Goals: The primary goal of this proposal is for the Los Angeles County Sheriff's Department, Scientific Services Bureau to reduce the department's total backlog (including sexual assault kits) and associated turn around time. Due to prior grant funding the department's historical backlog (pre-Nov 2008) of sexual assault kit will be eliminated near the scheduled start date of this award. However, due to the Sheriff's mandate that the lab examine every sexual assault kit we are acquiring another backlog (post-Nov 2008) anticipated to be 480 sexual assault kits by September 31, 2010. The secondary goal of this proposal is to improve DNA analysis capacity through equipment and supply purchases.

**Project Plans and Methods:** The Los Angeles County Sheriff's Department, Scientific Services Bureau has been the recipient of previous capacity and backlog reduction grants, which have enabled the laboratory to increase its casework capacity dramatically. Calendar year 2008 saw a 106% and 2009 saw a 31% increase in the number of DNA cases completed. However, the most significant increases remain to be seen due to the delayed implementation of our LIMS system. Therefore our plan is to outsource approximately 780 sexual assault kits to contract laboratories to supplement the labs capacity during the period of this award. The lab will also analyze approximately 462 property crime cases in-house using the backlog grants supplies and overtime. Reviews of the contract lab data will be conducted using grant overtime funding. To assist in securing the labs future ability to work all sexual assault kits in-house, after the grant

award, we will also purchase new DNA analysis equipment. Several equipment items have been purchased with previous grant funds that have enhanced the labs DNA capacity. However, due to aging equipment and new technologies available we are requesting funding for the purchase of replacement equipment and new genetic analyzers to both maintain existing capacity and expand future capacity. Also tablet computers will be purchased for use with the LIMS system and evidence documentation during the examination phase of analysis.

Our lab has also discovered that our acquired capacity has come at a cost. The bureau does not have sufficient budget resources to purchase all of the supplies needed to maintain or expand the Biology Section's capacity. We will supplement the Bureau's budget with grant funds to ensure adequate supplies and reagents are purchased to supply our ever expanding capacity.

We have implemented robotic platforms to streamline DNA casework. We are also nearing completion on a validation to streamline sexual assault kit examination. Also during this year we will utilize an intern to evaluate a new method of differential extraction suitable for an automated platform. These major changes will allow a shift in workflow that we believe will eventually assist us in examining all sexual assault kits and property crime evidence received at the lab. Because the results of these changes remain to be seen we are requesting funds for the outsourcing of sexual assault evidence. While outsourcing is only temporary it will assist us in achieving our goal of 780 sexual assault cases.

The laboratory already has a system in place to prioritize the analysis of these backlogged sexual assault kits. We also have a streamlined system in place to send out over 300 cases per month and to ensure the kits that yield probative DNA profiles are entered into the CODIS in a timely manner. Since this plan only requires out sourcing approximately 65 sexual assault kits per month this system will be more than adequate for this proposal. We also have a streamlined system in place for the analysis of property crime evidence where samples are processed utilizing a batching process by select individuals. Even the case documentation has been streamlined by creating master case files and standardized reports, though this process is still inferior to a LIMS system. By maintaining this process throughout the grant and, hopefully, replacing it with our LIMS system we will analyze approximately 462 property crime cases.

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**FY 2010 Recipient Name:** County of Alameda, California

**Award Number:** 2010-DN-BX-K082

**Award Amount:** \$228,894

**Abstract:** The purpose of this program is to address analyst throughput, turn around time and backlogged DNA casework. Funds from this grant will be used to continue the employment of two grant positions in the DNA Unit (Criminalist and DNA Technical Lead) from earlier awards. Although these grant funds will not financially support the positions completely, local funds will

be used to continue funding in order to complete this program. In addition grant funds will be used to pay for annual maintenance / calibration of DNA equipment.

Through the continued funding of personnel it is the ACSO Crime Lab's goal to maintain the DNA Unit's current throughput, reduce case turnaround time to 30 days and eliminate the backlogged forensic biology casework. Our goal is to examine, analyze and review approximately 175 DNA cases in fiscal year 2010.

Cases with relevant biological evidence would be analyzed in the 13 DNA STR loci which are accepted by Combined DNA Index System (CODIS). Legally permissible DNA profiles would be submitted to CODIS.

The funds used for instrument service contracts will ensure that the equipment needed to reduce the backlog remains in working order and within the guidelines set by the FBI Quality Assurance Standards.

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**FY 2010 Recipient Name:** County of Santa Clara, California

**Award Number:** 2010-DN-BX-K064

**Award Amount:** \$255,873

**Abstract:** The Crime Laboratory, under the Office of the Santa Clara County District Attorney, is the regional laboratory responsible for the analysis of physical evidence collected within Santa Clara County; it serves over 30 criminal justice agencies, including the sheriff, medical examiner, and all municipalities within the County. The laboratory was first accredited by ASCLD-LAB in 1996, and has secured reaccreditation in 2001, and most recently in 2006. Further, the Forensic Biology Unit undergoes FBI/QAS external audits every other year, with the most recent evaluation being performed in September of 2008. The laboratory performed an internal FBI/QAS audit in June of 2009.

The laboratory has benefited from participation in NIJ grant-funded programs for several years in terms of backlog reduction and building capacity. Casework statistics have been compiled as part of this participation, which provide a historical perspective of the laboratory's progress in terms of turnaround times, cases/items submitted and completed, and reduction in backlog. Over the past five years, the laboratory has seen an increase in the number of items submitted per case, as well as the types of analyses requested (e.g., human and male-specific testing), which served to increase the backlog and turnaround times.

In the last year, the size of the backlog did decrease significantly, and this was attributed to new policies instituted by the laboratory (e.g., limitations on the number of items submitted per case, special requirements for contact DNA case acceptance), a reduced number of DNA requests (a

result of budgetary constraints imposed by the laboratory's user agencies), and resources provided by grant funds. In June 2008 the backlog was 250 cases and the backlog as of May 12, 2010 is 119. The backlog was at its lowest in February 2010, when it consisted of only 75 cases.

The turnaround times also decreased over the past year, with the exception of the last quarter of 2009 when there was a significant increase. The turnaround time was at its lowest in the third quarter of 2009 at 79 days, and then it jumped up to 102 days in the final quarter of 2009. The number of cases completed annually in 2008 was 997 and then decreased to 936 in 2009. The casework productivity in the final quarter of 2009 was significantly lower than the number completed in the previous seven quarters.

Despite the many improvements seen over the past year, additional resources are required to further reduce the backlog and turnaround times, and increase the number of samples processed per analyst per month. The significant downswing in performance during the last quarter of 2009 and the increase in backlog during the first half of 2010 demonstrate the need to acquire additional resources.

The goals of this grant are to alleviate the current backlog, support casework submitted during the grant period, reduce turn-around times on all cases, and increase the number of samples analyzed per analyst per month. More specifically, the objectives are as follows:

- Analyze 130 155 backlogged cases using grant funds. This will include a combination of backlogged cases as of October 1, 2010, and those that are received during the grant period, backlogged, and then assigned and completed before the end of the grant. The laboratory adopts the definition of "backlogged request" as defined in the grant solicitation: "A request that has been submitted to the DNA laboratory and is not completed within 30 days."
- Turnaround times for DNA casework will improve from an average of 79 days to 70 days from date of submission to date of review.
- Casework throughput will improve from 19 samples per analyst per month to 24 samples per analyst per month.

These objectives will be accomplished through the support of two grant-funded employees and the purchase of (12) Identifiler® Plus amplification kits for validation (5) and casework implementation (7).

130 of the backlogged cases cited above will be completed by two Criminalists that were hired using 2006 and 2008 grant funds (Ebert-2006 Capacity Enhancement Program (2006-DN-BX-K178), and Parsons-2008 Backlog Reduction Program (2008-DN-BX-K053)). Both analysts are



qualified DNA analysts with over three years experience each. As in previous years, the grant funds will be used to pay for the salary and benefits of these two analysts.

An additional 25 cases will be completed using seven Identifiler® Plus kits. These cases will be worked after the chemistry is validated. This validation will be supported through the grant-funded purchase of five Identifiler® Plus kits.

It is expected that analysts would spend significantly less hands-on time processing routine casework samples and less time interpreting the resulting data if the Identifiler® Plus kit was validated. The current chemistry used, Identifiler® does not adequately support the sample types routinely processed at the laboratory (e.g. contact DNA samples with inhibitors) causes bottlenecks in the process. The number of sample manipulations required when using Identifiler® kit should be cut in half, and interpretations can be made with increased confidence. This will be evidenced by a decrease in turn-around time, an increase in the number of samples the analysts can process in a month, and a corresponding increase in the number of cases completed and decrease in backlog. It is also expected that the number of CODIS profiles suitable for upload would increase once Identifiler® Plus is implemented due to the increased sensitivity of the kit and its ability to overcome inhibitors that Identifiler® could not.

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

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**FY 2010 Recipient Name:** County of San Mateo, California

**Award Number:** 2010-DN-BX-K054

**Award Amount:** \$163,633

**Abstract:** The County of San Mateo is located in Northern California and is positioned just south, and adjacent to, the City of San Francisco. The County is comprised of 450 square miles, 25% of which is urban space. San Mateo County is home to an estimated 745,858 residents and is considered the 14th most populous among California's 58 counties.

Forensic services for the County of San Mateo are provided by the Sheriff's Office Forensic Laboratory. The Sheriff's Office Forensic Laboratory services approximately thirty law enforcement and law enforcement related agencies in the County of San Mateo. These agencies include: the District Attorney's Office, Probation Department, Coroner, Parks and Recreation, and Animal Control, as well as the California Highway Patrol, California Fish and Game and local transportation authorities. The Forensic Laboratory also provides forensic services, by contractual agreement, to the City of Hayward (Alameda County), City of Vallejo (Solano County), and City of Concord (Contra Costa County).

On May 11, 2005, the San Mateo County Sheriff's Office Forensic Laboratory began performing Short Tandem Repeats (STR) DNA analysis. On September 1, 2005, the Sheriff's Office Forensic Laboratory was accredited by the American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB). The Sheriff's Office Forensic Laboratory undergoes external audits, not less than once every two years, to demonstrate compliance with the DNA Quality Assurance Standards established by the Director of the Federal Bureau of Investigation (FBI).

The San Mateo County Sheriff's Office Forensic Laboratory plans to use funds from the DNA Backlog Reduction Program to: 1) provide overtime funding for existing laboratory employees to directly handle, screen, and analyze evidence that may contain DNA; 2) purchase software from RJ Lee that will enhance the laboratory's current LIMS Forensic Biology Module and to purchase Genemapper ID v3.2 software from Applied Biosystems to increase the number of licenses the laboratory currently owns; 3) purchase one freezer to increase the capacity of the Forensic Biology/DNA Section access to DNA extracts and PCR product; and 4) purchase three microcentrifuges to increase the capacity of the Forensic Biology/DNA Section to perform DNA extractions.

The Sheriff's Office Forensic Laboratory also plans to use funds from the DNA Backlog Reduction Program to purchase supplies in the form of DNA Kits which will be used in processing backlogged cases by the Forensic Biology Section.

Finally, the Forensic Laboratory intends to hire three contract employees (consultants) in the form of one Criminalist and two interns. The contract Criminalist will support the staff of the Forensic Biology Unit by performing DNA casework and comprehensive technical reviews. The two contract interns will provide support to staff members of the Forensic Biology Section by performing non-critical tasks and method validation. The addition of these three employees will allow existing analysts more time to perform casework, resulting in a lower backlog and quicker turnaround times.

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**FY 2010 Recipient Name:** Orange County Sheriff-Coroner Department, California

**Award Number:** 2010-DN-BX-K067

**Award Amount:** \$358,567

**Abstract:** Goals and objectives: Funds from this grant will be used to address five main goals. We will increase the throughput of DNA cases by providing additional computer, bar code, and LIMS resources to the DNA analysts in the laboratory. We will support the expansion of our Evidence Control Unit (ECU) which will expedite evidence log-in and delivery to the DNA section. We will hire a Forensic Technician to provide support services to the DNA section which will take routine lab and maintenance duties away from our DNA analysts. We will

provide additional training for our staff and we will perform analyses on unsolved cold homicide cases and enter the profiles into CODIS.

We will increase the throughput of the DNA laboratory by supplying laptop computers with bar code scanners to DNA analysts for use in the laboratory area. Analysts will be able to record their notes on the laptops and track the movement of evidence using the scanners. Wireless network terminals will be installed in the laboratory to facilitate access to the Laboratory Information Management System (LIMS). Our DNA server will be upgraded to accommodate the increased volume of data and information being stored on it. We will also upgrade and increase the capacity of the back-up power supply that prevents the Genetic Analyzers from shutting down when there are power outages.

There has been an approximate 30% increase in the number of biological evidence items being submitted to our crime laboratory over the past year and one half. The amount of biological evidence submissions has been a burden on our Evidence Control Unit (ECU). We lost one ECU position this year due to laboratory budget cuts but added a position to the unit using 2009 DNA Unit Efficiency Improvement Grant funds. ECU has expanded into a second area in the building to accommodate the increased number of evidence items. The additional ECU work space is not furnished and is an empty room. Funds from this grant will be used to secure this area and to install work stations, shelving, and computer equipment for ECU to use. Having this additional work area will enable ECU personnel to process incoming DNA evidence items quicker and more efficiently which will get the evidence to the analysts faster.

Our DNA Section does not have a Forensic Technician due to county budget cuts. The Forensic Technician duties have been divided and assigned to our DNA analysts. Funding from this grant will be used to recruit and hire a limited term (18 month) Forensic Technician to provide support to the section. Having a Forensic Technician to do these support duties will stop our DNA analysts from having to perform mundane lab tasks and will allow them to focus on evidence examinations and DNA analysis.

Funds from this grant will provide training opportunities that will assist in satisfying DAB continuing education requirements. We will send four senior DNA analysts to the International Symposium of Human Identification (Promega) in October, 2011.

We will analyze DNA evidence from unsolved homicide cold cases and enter qualifying profiles into CODIS. Recent cold case submissions have not been analyzed and cannot be worked unless overtime funding is available due to greatly increased submission of violent and property cases and a decrease in staff. Funds from this grant will provide overtime money plus DNA typing reagents and supplies for DNA staff to use to analyze these cases. Analysts will be allowed to

work on the unsolved cold cases after normal business hours on their regularly scheduled days off and on weekends.

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**FY 2010 Recipient Name:** Contra Costa County, California

**Award Number:** 2010-DN-BX-K127

**Award Amount:** \$206,267

**Abstract:** Grant monies will continue to fund two DNA analysts; the positions were initially hired under 2007 NIJ Backlog and DNA Capacity Enhancement grant, and their funding maintained under the 2008 and 2009 NIJ Backlog Reduction grants. The two DNA analysts perform casework in screening evidence for biological material and DNA analysis.

Objective: Improving DNA casework capacity for the Forensic Biology Unit

The two DNA analysts are dedicated to performing DNA related casework. Other criminalists assigned to the Forensic Biology Unit must split their time between crime scene response and biology work. The division of labor between crime scene response and biology casework is a huge bottleneck for the analysts trying to complete both types of casework. The addition of two dedicated DNA casework analysts has resulted in efficiency improvements and increased the casework capacity of the Forensic Biology Unit as they are focused on the biology casework without being consumed by the crime scene bottleneck. The performance measures demonstrating the success of the capacity increase include a reduction of turnaround times and the increase in the average number of samples analyzed per analyst.

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**FY 2010 Recipient Name:** City And County of San Francisco, California

**Award Number:** 2010-DN-BX-K124

**Award Amount:** \$320,274

**Abstract:** Funding available under the 2010 Forensic DNA Backlog Reduction program will assist the San Francisco Criminalistics Laboratory to (1) reduce casework turnaround time, (2) increase casework throughput, (3) reduce casework backlogs (4) implement newer technologies, and (5) utilize the Combined DNA Index System (CODIS) to its fullest capabilities, given the recent expansion to all arrestees. Under this program, the funds will be directed to equipment purchases, validation services and overtime for permanent laboratory staff. Improved overall casework efficiency for evidence inventory, sample preparation, biological screening, DNA analysis and administrative / technical reviews for violent and nonviolent crimes offenses will be demonstrated. Overtime for laboratory staff directly engaged in the handling, screening and/or analysis of forensic DNA samples will offer a benefit for the reduction of cases awaiting DNA testing and increase the overall efficiency of the DNA Unit. The current length of time from case assignment to issued report of DNA results is approximately 4 months. The average number of DNA samples currently processed per analyst per month is approximately 30. It is estimated that

there are currently 60 backlogged Part I violent crimes cases (sexual assaults and others) and 175 nonviolent crimes cases (burglaries and others) awaiting biological screening and/or DNA testing within the SFPD Forensic Biology Unit. Casework assistance under this grant will significantly reduce the number of backlogged cases awaiting DNA analysis. The estimated number of forensic DNA cases that are projected to be awaiting in-house analysis as of September 30, 2010 is approximately 300. And of the 300, ~ 150 DNA cases will be worked under this grant. Further, for every \$1000 in overtime funds used, one case will be worked within the Forensic Biology section of the Crime Lab.; a minimum of 90 cases out of the 150 will be worked using this overtime money.

In addition to overtime funds for laboratory work, overtime for administrative and technical reviews associated with the final release of case records and reports will significantly improve the overall casework turnaround time of the DNA Unit operation; it is estimated that there are currently 75 cases awaiting technical and administrative reviews. The number of cases that can be screened and/or DNA tested within 18 months using the available Federal funds is approximately 150 (of which, 90 will be worked using overtime funds); assuming a concerted approach for implementation of the high-throughput DNA section.

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**FY 2010 Recipient Name:** Oakland Police Department, California

**Award Number:** 2010-DN-BX-K068

**Award Amount:** \$371,622

**Abstract:** Forensic Biology casework capacity and case completion turnaround times at the Oakland Police Department's Criminalistics Laboratory have improved significantly over the years as a result of grant funds received from the National Institute of Justice's DNA Backlog Reduction and Capacity grant programs. Forensic Biology Unit staffing has increased to a level that allows the Unit to evaluate, analyze, and submit probative DNA profiles into CODIS on all sexual assault kits collected in Oakland. This has effectively tripled the number of case requests the Forensic Biology Unit receives on an annual basis. The implementation of electronic sample documentation and the automated DNA processes as a result of the acquisition DNA extraction robots, DNA sample manipulation robots, real-time PCR for human DNA quantitation, and higher capacity capillary electrophoresis instruments have resulted in an increase in the number of biological samples analyzed. It has become apparent that these processes significantly increase our capabilities, and as a consequence we have developed different areas of potential bottlenecks.

The Oakland Police Department has defined 489 sexual assault evidence kits as comprising the untested sexual assault kit backlog as of June 30, 2009. Our laboratory has been tasked with the analysis of these kits by June 30, 2011. Three staff members are dedicated to this project. Through enactment of the proposed FY 2010 DNA Backlog Grant initiative, the laboratory will

analyze one hundred (100) of the backlogged sexual assault kits. The Forensic Biology Unit scientific staffs' continuing education is needed to comply with the laboratory's ASCLD-LAB accreditation, individual scientist's certification, NDIS requirements for CODIS data entry, and the FBI Quality Assurance Standards mandatory educational requirements. The Laboratory does not have an independent budget for training. It is anticipated that case completion time would improve to less than 100 days on average upon the attendance of conferences, implementation the new technologies learned, and training of new Forensic Biology Unit staff.

The Forensic Biology Unit case completion time for the year 2009 was 197 business days from the date of the request from the investigator to the publication of the report. This is lower than previous years due to the implementation of new instrumentation. The Biology Unit is able to complete the analysis on a limited number of rush cases in approximately (10) business days. The ultimate goal of the Biology Unit is to decrease the turnaround time on non-rush DNA analyses to less than 100 business days. This decrease in turnaround time and the increase in the number of DNA samples analyzed will enable the lab to increase the number of cases completed annually. The DNA profiles obtained from probative evidence will be entered into CODIS. Based upon past experience with DNA profiles obtained from suspectless cases, we anticipate a 35% 'Hit-Rate'.

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**FY 2010 Recipient Name:** City and County of Denver, Colorado

**Award Number:** 2010-DN-BX-K158

**Award Amount:** \$203,992

**Abstract:** The Denver Police Department Crime Laboratory serves the City and County of Denver and strives to solve crime, thereby increasing public safety. The Denver Crime Laboratory DNA and Forensic Biology units seeks federal support in order to reduce the number of cases backlogged throughout the 2010 year, as well as to increase the efficiency and effectiveness of the analysts working in the laboratory, by way of the following goals:

1. To retain one trained, grant-funded analyst for 13 months of the 2010 grant period to process 60 forensic biology cases and to process the equivalent of 100 cases of DNA samples.
2. To reduce case turnaround time and increase the number of samples analyzed per analyst each month by purchasing and performance checking a QIAgility liquid handling robot and a 7500 real time PCR quantitation instrument for use with DNA casework samples.
3. To equip new laboratory space in the crime laboratory's bond-funded facility through purchase of two microcentrifuges, used at all steps of DNA analysis, as well as a cross-linker for decontamination of critical plasticware and reagents.
4. To fulfill the continuing education requirements specified in the DNA Quality Assurance Standards for six DNA/FBIO analysts.

By implementing these goals, the DNA Crime Laboratory will target specific bottlenecks that have been identified in the laboratory process and the lab will comply with national quality assurance standards regarding validation and training.

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**FY 2010 Recipient Name:** Colorado Department of Public Safety

**Award Number:** 2010-DN-BX-K154

**Award Amount:** \$580,593

**Abstract:** There is an increasing demand on forensic laboratories to expand the utilization of DNA technologies to solve a wider variety of crimes. In the past 4 years this demand for DNA analysis and subsequent increased hits associated with property crimes has continued to drive requests by local law enforcement agencies for additional DNA analysis.

The goals outlined in the “FY2010 Forensic DNA Backlog Reduction Program” solicitation are to assist government labs “to reduce forensic DNA samples turnaround time, increase the throughput of public DNA laboratories and reduce DNA forensic casework backlogs”. As the primary government forensic laboratory serving the people of the state of Colorado the CBI continues to look for ways to achieve these stated goals. Specifically, the continual increase in the number of cases submitted, followed by an anticipated increase in case output once robotics has been fully implemented will lead to bottlenecks downstream in the DNA workflow process. One of those anticipated bottle neck is with the instruments involved in the final DNA analysis of amplified products, the 3130 genetic analyzers. In the coming years the CBI anticipates an increase in sample throughput as a result of robotics and an upgrade to a 24-Capillary Genetic Analyzer in combination with an expert system should allow for the streamlining of the entire DNA analytical process. The CBI first objective in achieving the goals noted in the “FY2010 Forensic DNA Backlog Reduction Program” solicitation is to secure four 24-Capillary Genetic Analyzers. The CBI has received funding to address the expected bottleneck linked to the analyst’s initial review of the data as well as the technical reviews with its plans to bid out an expert system. Linked to this upgrade in efficiencies is a need for a more efficient Genetic Analyzer, one that will analyze more samples in a shorter time period. The 24-Capillary Genetic Analyzer meets the need for efficiency in that 24 samples can be injected at one time and a 96 well plate with only 3 injections can be completed in about 2 to 2.5 hours. In the course of a day two plates can be run and if necessary another 2 plates can be set up and run overnight. It is expected that an approximate 5% increase in case output should be anticipated with the implementation of these 24-Capillary Genetic Analyzers within the lab system. A critical piece in this process is the validation and performance checks that are a critical part of bringing a new instrument on line. Funds to assist in this process so as to reduce the need to use regular hour time to bring these instruments on line will assist in maintaining the current pace of DNA analysis.

The second objective relative to meeting the stated goals of the 2010 DNA backlog grant solicitation is to have staff capable in knowledge, skills and ability to perform the work demanded within this discipline. A critical part of any DNA analysis is the forensic analysis of the items of evidence, the processing of the correct areas of an item of evidence to obtain useful and meaningful results. In addition, knowing how to effectively utilize the instruments, and interpret the data in light of the location of the stains, and location of trace DNA collections result in a more effective forensic analysis of any item of evidence. Well trained and informed analysts are more confident in their work and the CBI seeks to continue to provide opportunities to meet the continuing education needs of its staff. With a staff of varied knowledge and experience levels it is essential that the CBI provide each analyst with training that will meet their current needs. The CBI is requesting a portion of the grant to assist in providing the FBI QAS mandated 8 hours of annual DNA training.

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**FY 2010 Recipient Name:** Connecticut Department of Public Safety

**Award Number:** 2010-DN-BX-K066

**Award Amount:** \$482,762

**Abstract:** Project Background: The Connecticut Forensic Science Laboratory is the only forensic laboratory in the state of Connecticut that provides both Criminalistics and DNA services. Currently the lab serves 101 local police departments, 12 state police troops and specialized investigative units, 189 fire departments and fire marshal's offices, state's attorneys, public defenders, and other State agencies. In addition, the laboratory provides services to other federal, state, and local law enforcement agencies in Connecticut, the New England area, and around the US. The Connecticut Forensic Science Laboratory ("the laboratory") has been accredited by ASCLD-LAB since February 2001 (Certificate # 228). The laboratory conducted a review of the cases submitted by various agencies that were unexamined as May 2009. This review consisted of a direct count of cases with Biology/DNA requests that have not been examined and are in the Forensic Biology backlog and cases already screened for biological samples awaiting DNA analysis.

**Project Goals & Objectives:** The number of backlogged DNA cases is approximately 3,000 cases. At the end of this DNA grant program (October 1, 2010 through March 31, 2012), it is anticipated the following goals will be accomplished: (1) Examination of at least 300 of the backlogged cases to identify and characterize biological materials that may be a potential sources of individualization; (2) Analysis of appropriate biological materials from those cases for DNA STR/Y-STR profiles; and (3) Comparison of profiles obtained from those samples to known biological standards and/or submission of unassociated profiles to the State and national DNA databases where appropriate.



Project Design: Grant funds will be used to hire four (4) temporary full-time equivalent employees to conduct basic screening and DNA analyses on case samples (evidence records, extractions, quantitations, amplifications & interpretations of basic tests) and to provide support for current laboratory employees. The standard CT Forensic Laboratory QA/QC policies and procedures shall be followed regarding evidence examination, confirmation of biological materials, decisions concerning which samples to forward for DNA testing, and all interpretations of DNA profiles, using current Laboratory personnel and durational DNA analysts.

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**FY 2010 Recipient Name:** D.C. Metropolitan Police Department

**Award Number:** 2010-DN-BX-K108

**Award Amount:** \$393,960

**Abstract:** In 2008, the DC Metropolitan Police Department developed the capability to perform forensic DNA testing by establishing a crime laboratory which includes a forensic biology unit. The MPD Crime Laboratory was accredited in November 2008 and assumed forensic DNA testing of all District of Columbia cases in early 2009. The objective of this current proposal is to use FY 2010 Forensic DNA Backlog Reduction grant funding for basic infrastructure support, the training of DNA laboratory personnel and outsourcing backlogged DNA cases to an accredited DNA laboratory.

**DNA Capacity Enhancement:** The goal of DNA capacity enhancement is to obtain additional equipment for basic DNA analysis processes and to help the laboratory meet Federal quality assurance standards.

**Basic Infrastructure Support:** The MPD Crime Laboratory is requesting grant funds to acquire the following: a) two plate centrifuges and an incubating orbital shaker for use during the DNA analysis process, b) two laboratory freezers for the storage of DNA extracts and DNA testing reagents, and c) temperature monitoring system for refrigerators and freezers to meet quality assurance standards.

**Training:** The goal of DNA training is to enhance the knowledge base of the members of the MPD Forensic Biology Unit and to meet continuing education requirements mandated by the FBI DNA Quality Assurance standards. The MPD Crime Laboratory is requesting grant funds to allow members to attend DNA and Quality Assurance conferences and/or workshops and DNA specialty courses.

**Outsourcing of Backlog Cases:** The goal of outsourcing DNA testing to a fee-for-service laboratory is to reduce the number of backlogged violent crime cases in the District of Columbia. The MPD Crime Laboratory began DNA testing of all District of Columbia cases in early 2009.

The cases submitted to the laboratory are current cases and do not include the District's existing backlog cases. MPD established a DNA cold case working group that is tasked with researching and identifying backlog violent crime cases that may have biological evidence suitable for DNA testing. At this time, the working group has identified 458 backlog violent crime cases for DNA testing. The MPD Crime Laboratory does not have the capacity to perform DNA testing on these backlog cases. The submission of these cases to the MPD Crime Laboratory would severely impact the laboratory's ability to provide timely delivery of DNA test results and would increase the number of backlogged DNA cases in the District.

The MPD Crime Laboratory will evaluate the backlog cases for submission to the outsource DNA testing laboratory. Evaluation criteria will include the following: a) presence of potentially probative biological evidence, b) the identification of potentially probative biological evidence which requires only DNA testing, and c) the selection of 4 – 6 samples (evidence and reference) per case sexual assault case and 4 – 10 samples (evidence and references) per homicide case. This evaluation process will ensure the minimum analysis is required to obtain a CODIS suitable profile, thus keeping testing costs down. The MPD Crime Laboratory will conduct the technical review of the outsourced cases and will enter all eligible forensic DNA profiles into CODIS.

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**FY 2010 Recipient Name:** Delaware Health and Social Services

**Award Number:** 2010-DN-BX-K057

**Award Amount:** \$284,323

**Abstract:** The DNA Unit of the Delaware Office of the Chief Medical Examiner (OCME) seeks \$284,323.00 to improve the current operations of the DNA Unit by increasing throughput, turnaround time, and eliminating the casework (Suspect and No Suspect) backlogs. The requested funds will be used to increase the capacity of the DNA Unit in order to analyze cases and cost effectively.

In addition to funds for analysis of forensic DNA casework samples, the OCME is requesting funds for basic infrastructure support, to enhance the capacity of the CODIS Section, purchase Convicted Offender buccal swab collection kits, purchase hardware and software for Next Generation CODIS (CODIS 7.0), and provide training for DNA Unit personnel.

All eligible forensic DNA profiles obtained with funding from the Forensic DNA Backlog Reduction Program (SL# 000871) will be entered into the Combined DNA Index System (CODIS) and, where applicable, uploaded to the National DNA Index System (NDIS).

The OCME will accomplish these goals by meeting the following objectives:

1. Reduce the casework backlog from 150 cases to 75 cases.
2. Reduce casework turn around time (TAT) average time from submittal to reporting from 120 days to 90 days.

3. Increase the number of forensic DNA samples processed per analyst per month.
  4. Eligible DNA profiles will be expeditiously entered into the State DNA Index System and the National DNA Index System.
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**FY 2010 Recipient Name:** Palm Beach County Sheriffs Office, Florida

**Award Number:** 2010-DN-BX-K078

**Award Amount:** \$403,372

**Abstract:** The goal of the Forensic Biology Unit (FBU) of the Palm Beach County Sheriff's Office (PBSO) is to conduct DNA analysis on informative crime scene evidence regardless of the felony charge. Reducing the existing DNA forensic casework backlogs must be accomplished concurrently with the goal of reducing the overall turnaround time for the handling, screening, and analysis of forensic DNA samples. The citizens of Palm Beach County will be provided with the full potential of the latest technologies in order to prevent future DNA backlogs and to help the criminal justice system. The validated processes will aid in the decision making process of how to proceed with a case in which DNA analysis was conducted. The four major objectives for the 2010 Backlog Reduction grant include 1) continued salary support for two Forensic Scientists originally hired using 2008 Backlog Reduction Grant funding, 2) improving the generation and interpretation of capillary electrophoresis data by upgrading the AB 3130xl software package from GenemapperID to GeneMapperID-X for all analysts, 3) supplementing the laboratory with an additional mini-robot the Qiagen EZ1 for improved efficiency and 4) continue the existing project to scan and archive all DNA-related documents to improve retrieval and storage efficiency and discontinue taxing storage fees. One of the most important FBU objectives has been progress towards a completely automated DNA process and this has largely been successful. A second important objective is to reduce turnaround time. The FBU implemented a sample submission policy in October 2008 for several reasons including the improvement of turnaround time and assurance that the crime scene samples submitted are the most informative. The 2009 grant afforded the laboratory the opportunity to implement a new sensitive bead technology, PrepFiler which complements the Qiagen EZ1 extraction protocol. The 2010 Backlog Reduction funds will increase the capacity of the FBU laboratory by allowing the unit to increase the number and quality of DNA samples analyzed as well as to handle, screen, and analyze backlogged forensic DNA casework samples by the two Backlog Reduction funded Forensic Scientists currently on staff, expansion of the mini-robotic capabilities, increasing the efficiency and accuracy of DNA data interpretation and moving towards all electronic storage of data.

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**FY 2010 Recipient Name:** Miami Dade Police Department, Florida

**Award Number:** 2010-DN-BX-K081

**Award Amount:** \$1,023,044

**Abstract:** The National Institute of Justice (NIJ) has allocated \$5,845,967 to the State of Florida as part of the FY2010 Forensic DNA Backlog Reduction Program. The Miami-Dade Police Department (MDPD) Forensic Services Bureau Crime Laboratory has been offered approximately \$1,023,044 as its share of the formula grant. The Forensic Services Bureau (FSB) Crime Laboratory proposes to use these funds to purchase a state-of-the-art, comprehensive Laboratory Information Management System (LIMS).

This LIMS system is expected to have a major positive impact on the FSB Crime Laboratory's efforts to increase DNA sample throughput, reduce forensic DNA case turnaround time, and reduce the DNA casework backlog. This system will document the quantitative aspects of both the manual and automated DNA processing systems' performance and maximize the capacity of the FSB Crime Laboratory to produce DNA profiles for investigative and judicial purposes in the most cost-effective manner. Better, more uniform, measurements of sample throughput and case turnaround time will also be obtained.

The FSB Crime Laboratory's present Property and Evidence Tracking System (PETS) lacks the expandability to supply the many additional functions needed by the Laboratory and the Department to address current and future needs, particularly those driven by advances in technology. In particular, the current system lacks the capability to track, evaluate and tabulate the results of individual DNA sample analyses and case reports, and has limited features for use in assessing the efficiency of DNA operations.

A new LIMS will provide the FSB Crime Laboratory with a program of flexible and customizable features that will increase the efficiency of the evidence submission process. This more comprehensive, commercially manufactured LIMS system will also generate system reports that further streamline and improve overall casework management.

The process of identifying candidate LIMS systems began last year with the compilation of essential criteria by Laboratory staff, and was expanded to include suggestions from other Departmental personnel who submit evidence or provide for its secure long-term storage. A final list of specifications will be ready by January, 2011, at which time a competitive Request for Proposal (RFP) process will begin. By March, 2011, a LIMS system will be chosen on the basis of its being a superior product that is compatible with the Department's current system, its manufacturer having the required team expertise to customize the new LIMS to the Department's specifications, and its having demonstrated prior effectiveness in a forensic laboratory setting. Full implementation is expected by March, 2012.

The expected impact of this award's funds will be to increase the FSB Crime Laboratory's in-house capacity to analyze DNA evidence and to produce a faster case turnaround time, leading to

a reduction in the in-house DNA case backlog. The LIMS system realized with funds from this FY2010 award will greatly aid in producing more DNA profiles for entry into CODIS. This will, in turn, generate more CODIS hits and provide increased investigative assistance in helping make Miami-Dade County a safer community.

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**FY 2010 Recipient Name:** Florida Department of Law Enforcement

**Award Number:** 2010-DN-BX-K101

**Award Amount:** \$3,460,812

**Abstract:** The number of incoming requests for Florida Department of Law Enforcement (FDLE) biology services rose sharply between 2008 and 2009, growing by 39%. The average number of requests per month increased from 1,310 in 2008 to 1,824 in 2009. The heavy demand for biology services has been attributed to a number of factors including Florida’s 18 million population and continued high volume of reported crime (824,559 index crimes reported in 2009). Advancement in DNA technology has increased local agency focus on re-examination of cold cases using STR technology, and increased awareness of the crime-solving value of Florida’s DNA database are also factors in the demand for more FDLE biology services. Based on these factors, FDLE anticipates that the rate of incoming service requests for biology will continue to increase over the next two years.

**Project Goals and Objectives:**

1. Reduce the average number of days between submission of DNA evidence to a forensic laboratory and the delivery of test results to the requesting agency
2. Increase DNA analysis throughput
3. Reduce the DNA casework backlog

Florida’s Crime Laboratory System: The Biology/DNA needs of Florida’s criminal justice community are serviced by a network of FDLE laboratories and five local laboratories that comprise the Florida crime laboratory system. Based on UCR Part 1 Violent Crime, the following funding allocations from the Forensic DNA Backlog Reduction Grant have been approved by the National Institute of Justice. Florida’s five county crime laboratories (Broward, Indian River, Palm Beach, Pinellas and Miami-Dade) will submit individual applications for funding consistent with their allocations.

**Violent Crime in Florida, 2008**

County	Population	Total Violent	% of Total Violent Crime Number	Total Allocation based on \$5,845,967

<b>Miami Dade</b>	<b>2,477,289</b>	<b>22,005</b>	<b>17.5%</b>	1,023,044
<b>Broward</b>	<b>1,758,494</b>	<b>10,637</b>	<b>8.4%</b>	491,061
<b>Palm Beach</b>	<b>1,294,654</b>	<b>8,659</b>	<b>6.9%</b>	403,372
Indian River	141,667	474		
Martin	143,868	486		
Okeechobee	40,003	295		
St. Lucie	426,413	1,686		
<b>Total 19th Circuit (Indian River Lab)</b>	<b>751,951</b>	<b>2,941</b>	<b>2.3%</b>	134,457
<b>Pinellas</b>	<b>938,461</b>	<b>7,219</b>	<b>5.7%</b>	333,220
<b>FDLE</b>	<b>12,524,831</b>	<b>74,611</b>	<b>59.2%</b>	3,460,812
<b>Florida</b>	<b>18,807,219</b>	<b>126,072</b>	<b>100.0%</b>	5,845,967

*SOURCE: Florida Department of Law Enforcement. Crime in Florida, Florida uniform crime report, 2007 [Computer program]. Tallahassee, FL: FDLE. Florida Statistical Analysis Center.*

Method for Achieving Goals: FDLE has identified equipment that will speed the process of identifying stains and other evidence for DNA analysis and allow analysts to be more efficient in the screening of evidence; overtime to reduce casework backlog and quality review results of outsourced analysis; and laboratory supplies needed to complete forensic DNA casework in-house. FDLE has also identified the need for continuing education and training for DNA analysts to remain current and enhance job performance; additional OPS forensic technologists to assist in case management; and contracting with a private vendor to outsource a portion of backlogged cases as critical components of a comprehensive backlog reduction strategy. These enhancements will ultimately improve integrity and speed of evidence handling procedures and processes, which will increase analyst productivity, reduce turnaround times, and increase the number of CODIS applicable DNA profiles entered into State and National DNA databases.

**FY 2010 Recipient Name:** St. Lucie County Sheriff's Office, Florida

**Award Number:** 2010-DN-BX-K092

**Award Amount:** \$120,404

**Abstract:** In September of 2009 the Indian River Crime Laboratory (IRCL) relocated to a new facility providing much needed additional square footage to enhance the workflow of evidence processing and examination. This new facility has enabled the Forensic Biology Section to begin modifying its processes by creating individual analyst workstations, thereby eliminating various bottlenecks in the evidence processing and DNA analysis procedures that existed in the past. Currently, IRCL is in the process of validating an enhanced workflow to further streamline the DNA processing and analysis procedures. This is expected to create the ability to move a greater number of samples through the system (an estimated 50% increase). With this increased throughput of samples, the necessity to coordinate and track samples through the process becomes critical. The Indian River Crime Laboratory is seeking funds to increase capacity and reduce casework turnaround time and case backlog. The proposed project includes purchasing software that will aide in streamlining processes involved in DNA examinations and data quality assessments, upgrading computer components and workstations used in Forensic Biology analysis and CODIS input, purchasing dedicated equipment for individual workstations as well as funds to assure attendance of DNA analysts at professional trainings and conferences to stay abreast of related issues, technological advances and remain compliant with FBI Quality Assurance Standards.

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**FY 2010 Recipient Name:** Pinellas County, Florida

**Award Number:** 2010-DN-BX-K128

**Award Amount:** \$333,220

**Abstract:** The Pinellas County Forensic Laboratory is requesting grant funding with the specific goal of increasing laboratory capacity and throughput. Laboratory goals include providing more comprehensive analytical options to the criminal justice community, with reasonable and meaningful turn-around-times, which includes an increased focus on property crime. The laboratory currently provides forensic analysis utilizing autosomal, y, and mini STR platforms. Funding is requested to purchase equipments which will allow for increased instrumental capacity, thus allowing for more efficient analysis flow when sample capacity exceed the current instrumentation (due either to the volume of analysis of the variety of chemistries in use a given time). Specifically, the laboratory is requesting funding to purchase a 16-24 capillary genetic analyzer and extraction robotics that utilize magnetic bead extraction technology.

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**FY 2010 Recipient Name:** Broward County Sheriffs Office, Florida

**Award Number:** 2010-DN-BX-K121

**Award Amount:** \$491,061

**Abstract:** At the current time, the Broward Sheriff's Office has a backlog of approximately 550 cases, 200 of them being UCR, Part 1 Violent Crime cases. We are requesting funding so that the unit can perform in-house analysis on these cases. This funding will assist in keeping the backlog from growing and will be utilized to work cases that are being requested or those that have court

dates in the foreseeable future. In addition, cases which lack suspects will also be worked. Funding is being requested for kits, consumables and personal protection equipment.

As part of the DAB requirements, every DNA analyst must attend training on a yearly basis. This has always presented a challenge due to budget restraints; this has not changed and will continue to be more difficult as we have been asked to cut our budget drastically and training has historically been one of the first places that get hit. As a result, funding for training is being requested so that we can circumvent this continuing critical issue.

In an ongoing effort to increase throughput, the unit will be purchasing an ABI 3500 Genetic Analyzer. At the current time we have five (5) ABI 310 genetic analyzers. These instruments are single capillary platforms and it takes approximately 30 minutes for each sample to be analyzed. The 3500 is an eight (8) capillary platform therefore allowing us to run eight samples in that 30 minute time frame. As a direct result of this, the throughput and turn around time will be increased dramatically. With the implementation of new instrumentation comes the need for validation. Unfortunately this means taking an analyst off the bench and away from casework. The Broward Sheriff's Office proposes bringing an outside vendor in-house to perform the validations and training necessary to not only get the new 3500 on line but to validate the new advanced Identifiler Plus kit as well. Several vendor labs offer advanced validation support and training to laboratories such as ours that feel the need to increase their testing abilities but do not have the ability to do so by themselves. The entire process will take between 8 and 12 weeks to complete. What they propose can be done in 12 weeks would take us a year or more to do with decreased output for our analysts and possible increases in backlogs. In addition, new Genemapper, the data analysis program that allows us to analyze DNA data, will need to be installed on the 3500 as the 3500 does not support the older versions.

The instrumentation that is used for the quantifying, amplifying, and separation of DNA for analysis are all located in one room. This room was acquired after the laboratory was built and the air conditioning system is not controlled by the laboratory. As a result of this we have had issues with being able to regulate the temperature. On many occasions the temperature has risen way above acceptable levels. This poses a major threat to any samples that may be in process in that room. While DNA is a hardy molecule, the instrumentation does not like temperature fluctuations. A viable option is to place Industrial Portable Air Conditioners in the room to offset this problem. With two (2) of these units in place, this ongoing problem can be rectified.

Recently we have had the misfortune of losing two (2) of our DNA analysts. We have also been undergoing budget cuts. The BSO would like to utilize funding to hire two (2) individuals to assist the unit in their DNA functions. One of the individuals would be a Forensic Technician. Their duties will be to QC kits and reagents, cleaning and maintenance of the instrumentation,



maintaining logs and ordering supplies. These duties while they appear mundane play an integral part in keeping the section running smoothly. The second individual we would like to hire is a trained DNA analyst. Once they go through a short training evaluation period and are proficiency tested, they will screen cases and then take them on to DNA. With the addition of these two individuals, the unit should be able to be back on track and prevent output from suffering.

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**FY 2010 Recipient Name:** Georgia Bureau of Investigation

**Award Number:** 2010-DN-BX-K094

**Award Amount:** \$2,147,541

**Abstract:** The Georgia Bureau of Investigation- Division of Forensic Sciences (GBI-DOFS) is a state agency that operates six laboratories located throughout the state. The laboratory system serves a population of over 9.3 million and issues reports to approximately 1000 criminal justice agencies. GBI-DOFS has DNA casework analysis capability in three of the six laboratories, the Headquarters (HQ) facility located in Decatur (Atlanta), the regional laboratory in Augusta, and the regional laboratory in Savannah. Convicted offender DNA analysis is conducted in the Northeastern Regional Laboratory in Cleveland, GA. The HQ facility is responsible for most method development and validation. Currently there are a total of 45 personnel in the Forensic Biology discipline, 24 of whom are positions currently funded through prior year DNA Backlog Reduction program awards. Funding from the 2010 Forensic DNA Backlog Reduction program will be used to:

- Continue funding for the salary and benefits of those 24 positions;
- Increasing instrumental capacity in anticipation of future legislative changes to implement DNA analysis of felony arrestee individuals;
- Provide required continuing education;
- Overtime funding will be provided for existing staff to assist in training, case analysis and case review;
- Outsourcing will be utilized to provide additional capacity as needed to prevent growth of backlogs.

The personnel and equipment provided by this project will enhance the capability of the GBI-DOFS laboratory to reach the following goals:

1. Complete at least 80% of requested forensic biology services within 45 days of request, including DNA analysis.
2. Reduce the backlog of forensic biology services to less than 100 by the middle of 2011 and then sustain that level of backlog.

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**FY 2010 Recipient Name:** Honolulu Police Department. Hawaii

**Award Number:** 2010-DN-BX-K091

**Award Amount:** \$162,603

**Abstract:** Forensic laboratories across the nation would agree that personnel shortages have the most impact on a laboratory's capability to provide timely and efficient services. Demand for forensic services has increased dramatically, but scientific staffing has not kept pace with that demand. The Forensic Biology unit of the Honolulu Police Department is not unique in this regard.

To continue servicing the Honolulu Police Department and requests from outside agencies in a timely and efficient manner, the Forensic Biology unit is seeking to reduce case turnaround time and backlogs. To accomplish these goals, we seek funding in the amount of \$147,065 for two Criminalist II positions to process cases. The remainder of the funds (\$15,547) will be used to purchase software to alleviate the bottleneck of data interpretation.

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**FY 2010 Recipient Name:** Iowa Department of Public Safety

**Award Number:** 2010-DN-BX-K152

**Award Amount:** \$247,571

**Abstract:** The Iowa Division of Criminal Investigation (DCI) Criminalistics Laboratory is soliciting an award of \$247,571.20 from the National Institute of Justice (NIJ), "FY 2010 Forensic DNA Backlog Reduction Program" for the purpose of DNA Capacity Enhancement. The DNA unit of the Laboratory would like to increase the work capacity of the Profiling Convicted Offender (PCO) section of the DNA Unit, and the Casework side of the DNA Unit. The main reason for this grant request is to prepare for an expected expansion in the database law for the State of Iowa. With this grant, the Profiling Convicted Offender (PCO) section of the DNA unit would change the DNA sampling collection device for convicted offenders to allow for the automated punching of the samples, and allow for a direct amplification of the sample without extraction thus saving processing time. As a result of these changes, the laboratory would validate the new processes including the implementation of new data analysis software for the whole DNA Unit, and train all affected personnel. Finally the lab would install a new storage device to house the additional offender samples.

The implementation of these processes should dramatically enhance the capability of database sample throughput and lower the evaluation time for casework analysts when interpreting DNA STR data. Metrics will be in place to measure the efficiency of the new processes. All goals and objectives for this grant should be completed within the 18 months of the awarded funding.

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**FY 2010 Recipient Name:** Idaho State Police

**Award Number:** 2010-DN-BX-K156

**Award Amount:** \$161,260

**Abstract:** Project Goals and Objectives:

The Idaho State Police Forensic Services' goals are to provide quality and timely scientific analysis of evidence as well as testimony to the law enforcement and criminal justice entities in Idaho. This project will provide the Biology/DNA section with training for six analysts, equipment that will benefit both Database and Casework, and reagents and supplies that will allow us to provide service to our law enforcement agency customers.

**Project Plans:** The Idaho State Police Forensic Services provides services to 88 police agencies, 44 sheriff agencies and all federal and state law enforcement agencies in the state of Idaho. According to the 2008 Crime in Idaho publication, the 106 participating law enforcement agencies reported a total of 19,664 violent crimes for a population base of 1,519,264. The Idaho State Police Forensic Services Biology/DNA section is the only human forensic DNA lab in the state of Idaho. The unit consists of three qualified DNA analysts, one DNA analyst currently in training, a Database analyst, and we are in the process of hiring a second Database analyst. Our forensic scientists are relied upon for their advice and scientific expertise and there is an expectation that the Idaho State Police Forensic Services will be able to provide service to our customers and assist in the prosecution of the criminals and exoneration of the innocent.

**Methodology:** The funds requested in this application are for the purchase of equipment, training, and supplies to enhance the capacity of the Idaho State Police Forensic Services Biology/DNA program. Their description, uses and impact include:

- Filing system for the Database Samples. We have outgrown our current system. There is no room in our current space allotment for future sample growth. This filing system will allow our Database analyst to store the samples in the laboratory where they will be processed rather than in an outer office.
- Desktop computers and color printers (3 each). These computers and printers will allow the Database analysts to login offender samples in the laboratory rather than having the samples in their offices where they currently have to use their personal computers for login. The current system requires the analyst to have biological samples in the office environment where food/drink is consumed/stored and is not very efficient. The analyst has to continually transfer samples from the storage area, to their office, to the laboratory and back again during the accessioning process and analysis. The computers/printers will also allow the analysts (Database and Casework) to access online procedures and electronic analysis worksheets from the laboratory. Currently, the analyst has to take a list of their samples (or in the case of the Database, take the actual sample) to their individual office, access the worksheet, fill it out, print it, and then return to the laboratory to resume work. The worksheets are used for multiple steps throughout the analysis and it becomes very disruptive going back and forth between lab and office in order to have the necessary paperwork. Additionally, if the analyst forgets to write down a reagent lot number or other pertinent information, they have to go back into the lab to

get it before they can completely fill out the worksheet in their office. The third printer is to replace the very old printer in the supervisor's office. The old printer cannot be networked, no longer prints well and is only black and white. The supervisor is required to print many documents on a regular basis, many of which need to be color. This replacement will allow for more efficient printing locally, and if networked, will give the DNA section another printing location when needed.

- A heat block will be used for the initial extraction process for Database. The current system uses a water bath for the initial incubation. The water bath is extremely messy and takes a very long time to heat up to temperature. This requires pre-heating of up to an hour prior to being able to start processing samples. It is not feasible to keep the water bath turned on at all times due to the amount of evaporation that occurs. The analyst would be required to constantly monitor the water level and continue adding water to keep it from going dry. Every water addition lowers the temperature and necessitates waiting for it to re-stabilize. The lab has recently obtained an adaptor for the heat block on the Biomek 3000 instrument. The adaptor will allow the extraction plates to be placed on the Biomek 3000 heat block for the initial digestion. The heat block reaches temperature in only a few seconds when turned on which greatly reduces the pre-heating time. However, this heat block is necessary for the DNA IQ extraction run, which requires a different adaptor. Using the same heat block will require removal of the extremely hot adaptor after incubation and replacing it with the correct one for extraction. This is a safety concern and does not allow for simultaneous incubation of a second plate while the first one is extracting on the instrument. The additional heat block will allow for simultaneous processing of plates which is more efficient and will also eliminate the safety hazard of handling hot metal.
- The classic pipette and minicentrifuge will be used by the Database analysts. The Database section does not currently have either of these items and is having to borrow from the Casework section. This will become more difficult when the two laboratories are separate. This is not efficient as the Database analyst must wait for a time when the Casework equipment is not in use.
- Funds will also be used for appropriate external training for DNA laboratory personnel. The training will allow our personnel to meet continuing education requirements. The training opportunities include: AAFS, Promega, CODIS conference (analyst other than State Administrator), CAC, MAFS, Green Mountain DNA Conference. This would allow one analyst per conference.
- Funds will be used to purchase evidence sample collection kits for the Database and Casework sections. These collection kits are provided to our customer agencies and will insure that we are receiving the evidence in the proper container.
- The second automation laboratory workstation is to increase the capacity and to eliminate a bottleneck in the processing of database samples. The laboratory originally validated

the current workstation for sample extraction only. We are now in the midst of validating the instrument for quantitation setup, sample normalization, and amplification setup in order to maximize the potential of the instrument and to increase efficiency in workflow. The instrument is only able to process one 96 well plate at a time and can only perform a single specific function at a time. The organization of the laboratory allows two plates to be processed simultaneously for downstream functions, which creates the initial workstation processing as a bottleneck. The second instrument will allow simultaneous processing of plates to match the remainder of the instrumentation available to the analysts. The instrument and chemistry requested is identical to the system already in place so would only require a minimal performance verification to implement once the installation is complete. Additionally, the analytical methods are already written and there would be no retraining of staff following the performance verification.

These proposed purchases will allow the Idaho State Police Forensic Services Biology/DNA program to continue the quality and efficacy of current processes and to continue to meet the continued education requirements mandated in the DNA Quality Assurance Standards established by the Director of the Federal Bureau of Investigation.

All eligible DNA profiles will be uploaded to NDIS. All DNA analysis performed under this program will be maintained under the applicable federal privacy regulations.

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**FY 2010 Recipient Name:** Illinois State Police

**Award Number:** 2010-DN-BX-K166

**Award Amount:** \$2,567,585

**Abstract:** The Illinois State Police (ISP) is proposing to use funds from this program to provide overtime compensation to existing forensic biology/DNA laboratory staff involved in processing, screening, analyzing and reviewing evidence that may contain DNA, purchase DNA supplies needed for in-house casework analysis, and to purchase equipment needed to support DNA analysis. The goals of the program are to reduce the average number of days between case submission and the delivery of test results, increase the number of forensic biology/DNA cases processed per month, and/or reduce the forensic biology/DNA backlog beyond that which could be accomplished without these funds.

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**FY 2010 Recipient Name:** Northeastern Illinois Regional Crime Laboratory

**Award Number:** 2010-DN-BX-K167

**Award Amount:** \$285,287

**Abstract:** The grant will address two general objectives that will provide improved DNA analysis for our agencies for both the near term and future capabilities. Capacity will be improved through the purchase and validation of an Applied Biosystems 3500 Genetic Analyzer.

Presently the DNA unit is using two AB 310 units. The new 3500 will be used in conjunction with other automated and DNA equipment purchased with previous DNA grants. An important aspect of the grant is the support to purchase supplies. Supplies will be used to reduce the DNA backlog. Supplies include Profiler/Cofiler or an equivalent such as Identifiler. The use of Minifiler and Y-Filer is limited because the information cannot be entered into CODIS. However, these Minifiler and Y-Filer used if a suspect has been developed. Other supplies will be needed for the new 3500 Analyzer. A case is on the backlog once it enters the laboratory. The case is off the backlog when the last review has been finalized. It is estimated that the new hire will analyze 200 DNA cases. The hire will increase capacity and reduce the backlog. Another 40 cases will be tested by another analyst with overtime funds from this grant. Supply costs have increased every year for the last eight years. Support for supplies is needed to avoid service cutbacks. The grant will support the continued hire of a part-time DNA analyst employee for duration of the grant (12 months). The hire is a continuation of the 2009 DNA grant and will work 30 hours/week. The economic climate has forced a decrease the budget and the grant is needed to continue the hire of this analyst. It is anticipated that the lab will absorb the costs of the additional head count after this grant expires. The metrics will include the completion of 90% of all DNA cases within 40 days of submission. Crimes against persons will have priority and 90% of the cases will be started within 21 days of submission and completed within 30 days. Unexpected increases in submission may adversely impact these objectives, but even with case increases of 20-30% these objective should be attainable with the projected staffing, robotics and other equipment. The grant will also provide the support needed to expand technical abilities.

The grant will increase capacity, and simultaneously address improving turn-around time. Continuing the head-count hired with the 2009 grant has the largest impact in both capacity and backlog. Supplies are needed to test the additional cases. There is an inverse relationship between supplies and backlog. LIMS augmentation will enhance the report writing capacity. It is also a quality improvement. Training will expose the examiners to current trends in the field.

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**FY 2010 Recipient Name:** DuPage County Sheriff Department, Illinois

**Award Number:** 2010-DN-BX-K146

**Award Amount:** \$285,287

**Abstract:** This proposal is being submitted by the DuPage County Crime Laboratory as part of a program to increase DNA testing efficiency and capacity. The DuPage County Crime Laboratory is a division of the DuPage County Sheriff's Office in Wheaton, Illinois. The population of DuPage County is just under one million citizens.

Our laboratory's goal is to achieve and maintain an average DNA case turnaround time of less than 30 days. This will be accomplished through the continued validation of new DNA technology, the hiring of personnel to assist in work throughput, the purchase of new

multicapillary genetic analyzing equipment that facilitates auto-sampling, authorization of overtime to process pending DNA assignments, and the administration of continuing education that will allow for an eventual increase of our DNA analyst headcount. Collectively, these initiatives are expected to increase capacity and lower average turnaround times as explained in this narrative.

The DNA Technical Leader of the laboratory, Douglas Saul, will be assigned the responsibility of managing this project, monitoring progress and expenditures, and periodically measuring DNA section turnaround times and backlogs. The Technical Leader will assign and approve overtime, review the credentials of the new employee to be hired, and assign work tasks to all staff members who are engaged in work that is being conducted in conjunction with this program.

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**FY 2010 Recipient Name:** Indiana State Police

**Award Number:** 2010-DN-BX-K150

**Award Amount:** \$619,386

**Abstract:** Project Goals and Objectives

The goal of this proposal is to present a plan that will improve the DNA case turnaround time, reduce the DNA backlog and enhance the DNA analysis capacity of the Indiana State Police Laboratories.

The objective is to use a multifaceted approach to achieve these goals. Overtime, equipment, DNA outsourcing, maintenance contracts, and training will be used to improve the efficiency of the Biology Section.

**Project Design:** The Indiana State Police Laboratory (ISP) has developed a comprehensive DNA backlog reduction program. This program uses overtime, equipment, DNA outsourcing, maintenance contracts, and training to impact the DNA backlog and reduce DNA case turnaround time.

ISP analysts will use overtime to analyze cases in-house and to review DNA data from outsourced cases and/or offender samples. After review, suitable DNA profiles will be entered into CODIS.

Equipment funds will be used to purchase new and replacement equipment to improve DNA analysis efficiency by avoiding repairs which interrupt analysis.

Contract funds will be used to outsource DNA analysis of backlogged DNA casework.

Travel funds will provide training and continuing education for all 53 DNA analysts and supervisors. Training invigorates analysts leading to improved efficiency and case turnaround times. Site visits will be conducted at vendor laboratories.

Other funds will be used to provide annual maintenance of DNA equipment and the LIMS system. Routine maintenance keeps instruments operating efficiently and reduces downtime caused by breakdowns

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**FY 2010 Recipient Name:** Marion County-Indianapolis Forensic Services Agency, Indiana

**Award Number:** 2010-DN-BX-K200

**Award Amount:** \$366,000

**Abstract:** Project Goals and Objectives:

The goal of this proposal is to present a plan that will reduce DNA case turnaround time, increase the throughput and reduce the DNA casework backlog, in addition to, enhancing the capacity of the Indianapolis-Marion County Forensic Services Agency to analyze DNA samples efficiently and cost effectively.

The objective is to use a combination personnel and overtime; employee training and development; maintaining equipment, and Qualtrax licensing; supplies for scientists to analyze backlogged cases; DNA case outsourcing, and an internal ASCLD/LAB-ISO audit. These purchases and services will enhance the laboratory's ability to reduce DNA case backlog and turn around time.

Project Design: The addition of a laboratory technician, along with the ability to work overtime, will assist in the reduction of the case backlog. Employee training and development will provide the necessary tools to maintain and improve qualifications of the forensic scientists. Supplies purchased to provide a portion of the supplies needed to analyze DNA cases will continue the reduction of backlogged cases. The ability to outsource cases to an accredited private laboratory will assist in the reduction of backlogged cases and improve efficiency. A contract between the agency and an individual with audit expertise, to act as part of the in-house assessment team in the performance of an internal audit, will benefit the laboratory in maintaining current ASCLD/LAB-ISO accreditation. An annual audit assessment is required by the ASCLD/LAB accrediting body to ensure all ISO 17025/DAB criteria are being met. Grant funds will be used toward service contracts, which will allow for optimization of instrumentation, thus improving efficiency.

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**FY 2010 Recipient Name:** Johnson County Kansas

**Award Number:** 2010-DN-BX-K159

**Award Amount:** \$146,000



**Abstract:** Over the past ten years, requests for services in the Biology section of the Johnson County Sheriff's Office Criminalistics Laboratory (JCCL) have increased dramatically; therefore, the need for additional staffing and infrastructure has increased as well. An increase in property crime and violent crime against persons in Johnson County during this timeframe has necessitated the creation of the JCCL Crime Scene Unit. The Crime Scene Unit (CSU) was established in 2005 with a staff of three. Today, the CSU consists of six staff members. Due to advances in DNA technology that allow "touch DNA analyses" and the dedicated CSU, the crime laboratory has experienced a significant increase in the number of biology examination requests. The goal of the JCCL is to provide quality DNA analyses with reasonable turn-around-times, while minimizing the backlog of cases that need biological processing and DNA analysis.

Over the past five years (2005-2009) the Biology section has experienced sharp increases in examination requests (approximately 1000/year) for biology processing and DNA analysis. The number of requests for biological processing is the true indicator of this increased demand for services. All evidence entering the laboratory with a biology request is first analyzed for the presence of biological material. Once biological material is indicated or identified, a DNA request is initiated. The increasing number of biology exam requests and subsequent biology processing backlog have falsely suppressed the potential number of DNA exam requests that are actually pending analyses (Table 1).

The number of biology items examined has steadily increased from 2005 through 2008. In 2009, the number of biology items examined decreased primarily due to the resignation of one fully trained (grant funded) scientist in the Biology section. The number of items examined for 2009 was also affected by hiring and training two new scientists. The number of DNA examinations completed increased significantly from 2005 through 2007 and remained steady from 2007 through 2009 (Table 2). The increase in DNA exams completed can be attributed to grant funding for additional staff (up to three FTE's), overtime, automation, and instrument upgrades.

Even though the Biology section has increased and maintained its DNA analysis productivity over the past five years, it has not kept pace with the demand for timely biological and DNA analyses. The backlog of biology items and DNA samples waiting for analysis continues to grow. In particular, the backlog of evidentiary items for biological processing has increased by 478% from 2006 to 2009. The DNA backlog increased slightly from 2006 through 2008 and actually declined in 2009 (Table 3). As stated previously, the DNA backlog is falsely suppressed due to the existence of a biology processing backlog and the work flow process associated with assigning DNA examination requests. If it were assumed that every item submitted for biological processing received a DNA analysis request, the DNA backlog would be greater than the existing biology processing backlog. As of April 30, 2010, the Biology section had a biology processing backlog of 4445 items and a DNA backlog of 621 items. The statistical trend for the

year 2010 projects the biology processing and DNA backlogs to be 5445 items and 636 items respectively by September 30, 2010.

Continual improvement to the overall efficiency and effectiveness of the Biology section relies upon additional infrastructure (automation/instrumentation) and personnel. If the requested funding from the FY2010 Forensic DNA Backlog Reduction Program (October 1, 2010 – March 31, 2012) is awarded to the JCCL, it will help maintain the productivity and throughput achieved with previously awarded DNA Backlog Reduction Program grants. Reducing the Biology/DNA backlog and turn-around-times will need to be achieved through case management and evidence acceptance practices. This funding will be used to retain two out of three current grant funded positions.

The Johnson County Sheriff's Office Crime Laboratory has been working in cooperation with the Kansas Bureau of Investigations (KBI) and the Sedgwick County Regional Forensic Science Center (SCRFSC) for DNA Backlog Reduction Program grants. According to the KBI point of contact, all three forensic laboratories in Kansas will be requesting funds from the FY2010 DNA Backlog Reduction Program grant. The KBI will be requesting the majority of the funds allocated to the state of Kansas; therefore, we will only be requesting enough funds to retain two of the three grant funded Forensic Scientist positions. Alternate measures will be explored to retain the third Forensic Scientist position that was funded in FY2009.

The 2009 UCR statistics for the state of Kansas are currently not available. In 2008, Johnson County accounted for 9.7% of all UCR violent crimes and 13.6% of all UCR property crimes in the state of Kansas.

Funds are being requested from the Fiscal Year 2010 Forensic DNA Backlog Reduction Program grant to cover the salaries and benefits of two Forensic Scientist positions for the Biology section of the laboratory. Available funds for personnel will cover the approved salary and benefits for each staff member for approximately 46 weeks. These two positions will be titled Forensic Scientist I and Forensic Scientist II. Forensic Scientists have the ability to perform biological screening and DNA analysis to determine who could be the source of a particular biological material. By having all incoming cases screened for biological material and subsequent DNA analysis with these two grant positions, JCCL can maintain acceptable backlogs and productivity. (\$146,000)

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**FY 2010 Recipient Name:** Kansas Bureau of Investigation

**Award Number:** 2010-DN-BX-K172

**Award Amount:** \$386,672

**Abstract:** The Sedgwick County Regional Forensic Science Center [RFSC] serves as the Crime

Laboratory for all of Sedgwick County, Kansas Law Enforcement agencies and provides forensic services to many of the contiguous counties.

The Forensic Biology/DNA Section of the Forensic Science Laboratory [FSL] at the RFSC is currently staffed at its authorized level of four scientists. Currently three of the four scientists have been qualified and are performing DNA casework. The fourth scientist is finishing his training and we will be asking through the budget process for a fifth scientist FTE.

The Section has seen a steady rise in casework submissions over the last few years. Since 2001, the Biology/DNA Section has seen a 3+ - fold increase in its caseload. In addition to the increased number of cases, the number of exhibits per case has also dramatically risen. The increase in the number of cases and examinations required has placed significant demands on the existing human and instrumental resources.

In order to maintain a reasonable turn-around-time on crimes against people cases, the Center has severely restricted the submission of certain case types; i.e. felons in possession of gun and DNA analysis request off of drug submissions. This limitation was in-place for three connecting reasoning; 1) lack of human resources, 2) lack of reagent resources and 3) physical space limitations. The Center has recently added additional square footage, which has freed up office space and old lab space contiguous to the existing DNA laboratory. Refurbishing this square footage for the DNA Section, which provide an increase in efficiencies and some capacity.

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**FY 2010 Recipient Name:** Commonwealth of Kentucky

**Award Number:** 2010-DN-BX-K118

**Award Amount:** \$585,500

**Abstract:** The Kentucky State Police Forensic Laboratory (KSPFL) began offering DNA analysis to the Commonwealth of Kentucky in 1989. During the 20 years that DNA analysis has been performed at KSPFL many technological advances have emerged in the field of DNA analysis accompanied by procedural changes implemented to accommodate this ever advancing science. Recent evaluations have identified four procedural areas in the laboratory that exposed inefficiencies regarding DNA analysis. First, there is a lack of implementation of new, high throughput technologies for casework, including: robotics, data management and informatics. Second, there is the need for additional time in which analysts can dedicate to processing cases. There are a higher number of cases being submitted to the laboratory which are requiring serological and/or DNA analyses and these requests encompass a wider variety of case types. This trend has led to larger backlogs and increases in turn around times (TAT). Third, there is a continued need to purchase reagents utilized in serological and/or DNA analyses for these requests. Fourth, is the need for analysts to attend workshops and training in order to stay abreast of new advances and techniques in the field of forensic biology.

Purchase and validation of instrumentation allowing for high throughput procedures, utilization of overtime (OT) hours by analysts, along with the purchase of reagents and other consumables will provide the KSPFL's Forensic Biology Casework Unit the opportunities to reduce the number of backlogged cases while also decreasing the TAT. Funding for training will ensure that analysts are aware of the most recent advances in the field.

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**FY 2010 Recipient Name:** Louisiana State Police

**Award Number:** 2010-DN-BX-K099

**Award Amount:** \$1,340,084

**Abstract:** The goals of this project are to reduce the forensic DNA case/sample turnaround time, increase throughput of current public DNA laboratories, and reduce forensic DNA backlogged cases. These goals will be accomplished by:

1. providing DNA analysts with newer, more efficient instrumentation by:
  - a. replacing older equipment with faster, more efficient instruments;
  - b. purchasing additional equipment to increase efficiency by reducing instrument wait times; and
  - c. purchasing new state of the art instrumentation and available software to develop enhanced methods of analyzing evidence.
2. incorporating new methods and procedures to increase capabilities and reduce sample analysis times by:
  - a. developing procedures which will enhance analysis of difficult and low copy number samples, optimizing the analysts' time;
  - b. improve accessioning and tracking of DNA samples to assure the reduction of duplication;
  - c. developing new, state of the art procedures for new capabilities; and
  - d. improving procedures on new instruments which will decrease analysis time.
3. providing continuing education to increase analysts' knowledge and skill levels; and
4. outsourcing of qualifying cases/samples to increase laboratory case output by using trained analysts to perform the testing.

In the 2010 solicitation allocation table, the state of Louisiana is estimated to receive an aggregate amount of \$1,340,084.00. It is our intent to share these funds corporately among the six accredited public laboratories performing DNA analysis. Our anticipated breakdown is as follows:

- Louisiana State Police Crime Laboratory \$305,539.00
- North Louisiana Criminalistics Laboratory \$243,895.00
- Jefferson Parish Sherriff's Office Regional DNA Lab \$238,535.00
- Acadiana Criminalistics Laboratory \$217,094.00

- Southwest Louisiana Criminalistics Laboratory \$174,211.00
  - St. Tammany Parish Coroner's Office \$160,810.00
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**FY 2010 Recipient Name:** Massachusetts State Police

**Award Number:** 2010-DN-BX-K106

**Award Amount:** \$1,042,765

**Abstract:** The Massachusetts State Police Forensic Services Group, MSPFSG, is committed to providing quality forensic services. The DNA Unit at the MSPFSG continues to strive to decrease the turnaround time and backlog of cases while increasing the number of samples analyzed by each DNA analyst monthly.

The MSPFSG proposes the following initiative to enhance the capacity of the DNA Unit: 1) purchasing additional GeneMapper® ID data analysis software to ensure seamless data interpretation by DNA analysts and cross-trained analysts; 2) increasing throughput by purchasing digital dry bath incubators and modular heating blocks; 3) decreasing turn around time with improved data transcription by expanding the DNA Matrix worksheets which will move data electronically instead of manually; and 4) increasing capacity by specialized training on troubleshooting the instrumentation within the DNA Unit, as well as training on advanced DNA analysis topics which will allow for a more thorough understanding of the technology and instrumentation utilized by the DNA Unit.

The MSPFSG proposes to decrease case backlogs by: 1) Hiring three temporary DNA technicians to assist with preparing evidence for processing at an external vendor laboratory and validating new technology; 2) Sending approximately 1196 samples from 800 cases for DNA testing to an external vendor; and 3) purchasing CODIS Collection kits.

The combined capacity enhancement initiatives and the backlog initiatives will assist the MSPFSG at reducing case backlogs, decreasing the turn around time and increasing throughput. These improvements will allow the MSPFSG to continue to serve the law enforcement community in the state by offering quality DNA forensic services.

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**FY 2010 Recipient Name:** City of Boston, Massachusetts

**Award Number:** 2010-DN-BX-K122

**Award Amount:** \$307,967

**Abstract:** The Forensic DNA Backlog Reduction Grant Program serves to advance the overall quality, efficiency and productivity that the BPD Crime Lab delivers to the BPD and the SCDAO, particularly during a period of staffing and fiscal challenges. Over the years, NIJ grant funds have been instrumental in the BPD Crime Laboratory's ability to enhance its performance.

As part of the Boston Police Departments (BPD) Crime Laboratory's overall plan to meet its goals and objectives, it is critical to maintain both a DNA Analyst and Forensic Technician to meet its demands in 2010 to further reduce backlogs while maintaining its ability to analyze casework in a timely manner.

The responsibilities of the analyst include screening potential DNA evidence, performing DNA extraction, quantitations, PCR amplifications, genotyping, data interpretation, and report writing/review. This analyst also assists the DNA laboratory on the cold case project, locating and reviewing case files, locating archived evidence, processing and screening cold cases involving no suspect contact rapes, and identifying potential biological material for DNA analysis.

The Forensic Technologist performs routine and specialized forensic examination of physical evidence containing blood, other biological fluids or tissues/cellular material. The Technologist also documents physical evidence through photography, descriptions and notes, performing screening tests for biological evidence suitable for DNA analysis.

The BPD is using funds from the 2008 and 2009 DNA Backlog Reduction programs to purchase and place a Laboratory Information Management system (LIMS) including a specific DNA module as a significant step towards the improvement of intra- and inter-agency communication as well as the enhancement of overall productivity in case works and processing of backlogs. Funds under the 2010 DNA Backlog Reduction grant program will allow us to improve our LIMS system functionality by supporting a LIMS Program Coordinator position.

The BPD FTD is steadily accomplishing its various objectives in the attainment of the overall goals. The objectives, as part of the overall plan for the Division, are: To maintain high quality services and improve the overall efficiency of the BPD Crime Laboratory's DNA Section; To improve coordination and tracking of cases across units and investigators; To maintain low DNA casework backlogs and turnaround time.

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**FY 2010 Recipient Name:** Anne Arundel County, Maryland

**Award Number:** 2010-DN-BX-K126

**Award Amount:** \$135,682

**Abstract:** a) Project Goals / Objectives: Support continuing increases in casework productivity and efficiency of the Forensic Biology Unit to reduce the existing case backlog thereby decreasing the overall turnaround times for newly submitted Forensic Biology cases through:

- i) One year retention of the existing fulltime W-2 temporary grant-funded (2009 DNA Backlog Reduction Award) analyst via salary and fringe benefits funding to continue independent DNA casework analysis functions;

ii) Approximate six month retention of the existing parttime temporary grant-funded (2007 DNA Backlog Reduction Award) LIMS Administrator consultant via salary (no benefits) funding to complete the DNA Module software LIMS upgrade project for increasing Unit sample handling efficiency;

iii) Various equipment purchases for increasing Unit capacity (biosafety centrifuge, vortexer, and a set of dedicated micropipettes to outfit the new biosafety hood under procurement at this time, an external harddrive for properly and efficiently archiving DNA analysis electronic data and validation data, two thermalcycler UPSs (uninterrupted power source backup units), a drybath incubator for additional DNA sample extraction specimen-handling capacity, laptop replacement batteries for maintaining portability of these existing computers when used for efficient notetaking during analysis among the four analysts, and a high-capacity OCR (optical character recognition) scanner to archive validation data and other pertinent information such as QA/QC records needed for business continuity and recovery in the event of a disaster or critical event.

b) Project Design and Methodology: The purpose of the Anne Arundel County Police Crime Lab (AACoPCL) 2010 DNA Backlog Reduction Program Formula grant proposal is to provide a means to enhance the support of current Biology Unit operations to achieve an overall increase in casework productivity. As such, the expected decrease in the Unit's case backlog will significantly improve case turnaround times for new submissions. The increase in overall casework productivity of the Unit will be accomplished by: 1) extending the employment of an existing grant-funded temporary contracted W-2 analyst position for a one year period to continue performing independent DNA casework, 2) extending the employment of an existing grant-funded temporary contractual IT consultant position (LIMS Administrator) for a 6-month period to complete the LIMS upgrade that involves the addition of the DNA Module to the system for improved efficiency in sample handling and associated worksheets, and 3) expanding Unit capacity via various equipment purchases. A new biosafety cabinet is being added to the existing infrastructure in the Unit and will allow an additional analyst to conduct DNA analysis extraction procedures in a dedicated space. Therefore, dedicated equipment is needed for DNA extraction work in the space such as a biosafety centrifuge, a vortexer, and a set of micropipettes. Additional equipment requested includes an external harddrive for required data archiving purposes from the genetic analyzer. The new thermal cyclers need to be attached to UPSs to insure sample integrity on possibly limited DNA samples. Replacement batteries are needed for the existing laptop computers used by the analysts for flexibility and portability in notetaking during casework analyses. Lastly, a high-throughput OCR scanner is needed to reliably handle archiving of validation data and other important documents that cannot be otherwise reproduced or efficiently stored.

The anticipated number of forensic DNA cases in the backlog as of September 30, 2010 is 290 cases with turnaround times averaging up to 200 days. However, it is expected that the backlog will noticeably level off and possibly decrease into 2011 with the on-going case output contribution of the third analyst who currently remains grant-funded through October 2011 (alternate funding source). Submissions will have stabilized from the spike noted with the substantial influx of property crime cases that has occurred in recent years. With the case output by the additional analyst, a diminishing backlog would eventually cause overall case turnaround times to decrease to less than 100 days per case for future case submissions that can be prioritized and examined in a more timely manner.

The goal targets almost 40 evidentiary DNA samples (not including controls) to be processed monthly through the Unit. Analysts are each expected to complete at least six or more DNA cases per month representing a minimum of 12 or so (not including controls) evidentiary DNA samples processed monthly over the duration of the grant period. Experience has shown the number of DNA samples able to be processed however far exceeds this minimum case specimen value due to case batching techniques. Since the laboratory does not currently impose limits on the number of items that can be submitted for analysis in a case, the actual average number of DNA samples analyzed and tracked using the LIMS per analyst per month regularly approaches 40-60 specimens which includes the controls run. Typical cases have 1-2 evidentiary specimens for at least 6 DNA cases expected for completion each month per analyst, hence the 12 evidentiary sample minimum cited. Furthermore, case batching for analysis allows use of 'shared' control samples so there tends to be more evidentiary samples typically included among that 40-60 sample amount run monthly by each analyst.

The additional analyst currently contracted to perform the job duties has been performing a significant amount of independent casework under alternate grant funding sources. Since being certified to perform independent casework analyses, this analyst has produced over 50 percent (257 cases, 175 of which involved DNA analysis) of the total case analysis output for the Unit in 2009 (516 cases completed, comprised of almost 2000 DNA specimens analyzed). The other 50 percent of the case output from the Unit is only currently possible due to the shared ancillary duties this additional analyst also contributes thereby allowing greater flexibility for all analysts to optimize individual caseload and time management for all Unit activities and duties.

Enhancements to caseload are further expected with completion of the current IT project to upgrade the existing LIMS (Laboratory Information Management System- B.E.A.S.T. [Barcode Evidence and Statistics Tracking, Porter Lee Corporation]). The new software targets the management of DNA data and analytical processing (DNA Module) via automation using designated networked instruments. The software purchase and LIMS Administrator position were originally acquired under alternate grant-funding. Due to the additional need for a replacement server that was identified during the upgrade process, the upgrade will now involve



the additional step of server purchase and installation which critically involves the expertise of the LIMS Administrator. As such, continuation of this position for approximately six more months is needed to fully complete the upgrade project and provide the associated User training needed for longterm independent Laboratory oversight and maintenance of the software.

Lastly, various equipment will support ongoing capacity enhancements to the Unit. A purchase of small dedicated equipment is needed to equip the new additional biosafety cabinet being installed to increase analyst DNA analysis (extraction) workspace. A biosafety centrifuge, a vortexer, and a set of micropipettes will be assigned to this additional independent workspace. The replacement laptop computer batteries support the flexibility and efficiency among the analysts to use electronic note-taking methods. Plus, an additional drybath incubator will increase the number of specimens that can be managed among the four analysts during the DNA extraction phase of analyses. Electronic archiving equipment is needed for data storage of DNA case-related and validation information. This includes an external harddrive needed for regular data backups of DNA analysis data from the genetic analyzer and an OCR scanner to maintain backup copies of critical documents such as validation and quality assurance/quality control records in the event of a disaster. Backup power sources (UPSs) are also needed for the new thermalcyclers being validated to maintain sample integrity in the event of a power disruption.

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**FY 2010 Recipient Name:** Maryland State Police

**Award Number:** 2010-DN-BX-K102

**Award Amount:** \$359,687

**Abstract:** The Maryland State Police Forensic Sciences Division (MSP-FSD) requests funds under the 2010 Forensic DNA Backlog Reduction Program with the goal of reducing the DNA casework backlog, reducing forensic DNA sample turnaround time, and increasing throughput of the DNA laboratory within the Forensic Biology Section.

MSP-FSD has established a long term plan to eliminate the DNA casework backlog through a multi-pronged approach which focuses on outsourcing of casework while simultaneously streamlining in-house operations. Great progress has been made in the past two years on the casework backlog as it has decreased 58% from a high of 568 in February 2008 to a low of 240 in April 2010. MSP-FSD proposes to continue with this established approach and requests funds that support the continued outsourcing of casework. Funds are also requested for capacity building items that are needed to support the in-house operations that will increase as the backlog continues to get smaller.

While the DNA Database backlog was eliminated in 2007, constant attention is required to ensure that a new backlog does not emerge. To that end MSP-FSD is in the process of transitioning from outsourcing of DNA Database samples to in-house analysis of these samples.

While the majority of this transition has already occurred, there are some items that are still needed and therefore funds are requested to obtain those items.

The reduction of backlogs, improvement of turn around time, and the increase of throughput are all inter-related. An improvement in one area will cause improvements in the others. Therefore, it is proposed that the goal of this program can be accomplished by meeting two objectives.

- Objective #1 is to eliminate the current DNA casework backlog. This objective will be met through the outsourcing of 110 backlogged DNA cases.
- Objective #2 is to continue to build infrastructure through knowledge and technology in an effort to prevent future backlogs to emerge. This objective will be met by providing continuing education to the lab staff, purchasing new computers for 2/3 of the lab staff, and purchasing standard lab equipment.

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**FY 2010 Recipient Name:** Baltimore County, Maryland

**Award Number:** 2010-DN-BX-K072

**Award Amount:** \$228,266

**Abstract:** Funding is requested for the Baltimore County Police Department's FY2010 DNA Forensic Backlog Reduction Program. The goal of this project is to increase the capacity of DNA analysis and the overall efficiency of the Department's Biology Unit by continuing the success of the projects proposed in the DNA Capacity Enhancement grant awards received in 2004 and 2005 and the Forensic DNA Backlog Reduction Program grant awards received in 2007, 2008, and 2009. This goal of increasing both capacity and efficiency will be accomplished by achieving two objectives: 1) continuing to increase the capacity and amount of automation in the current case analysis procedures and 2) providing additional infrastructure support to the increased number of personnel of the Biology Unit and the currently renovated expanded laboratory space.

Requested funding is to be used for additional and upgraded equipment, analysis software, DNA analysis supplies and evidence storage, and training of current personnel. Funding is also requested to upgrade the infrastructure serving the Biology Unit's laboratory with a water system and line conditioners to provide uninterruptible battery backup power and protect the equipment from power surges.

The project would fund additional storage capabilities for biological evidence. A freezer is necessary for proper storage of the existing DNA extracts and the anticipated additional volume of DNA extracts. The addition of two shipping containers would allow non-biological evidence to be moved to free up additional storage space in the secure, climate controlled area for biological evidence. Four lateral file cabinets to store older case files on-site would make better

use of existing space in the administrative area and allow for more efficient retrieval and research of older casework.

The BCoPD Biology Unit laboratory proposes to investigate the possibility of using expert system software for the review of DNA single source evidence. Evaluation of expert system software to assist in the analysis of DNA casework may make the step of DNA technical review more efficient. As more requests are submitted for DNA analysis from property crimes, expert system software analysis of these cases would permit analysts to concentrate on the technical reviews of mixed source samples. This will allow for more efficient analysis, resulting in an increase in the number of samples analyzed per analyst per month and/or a decrease in turnaround time for results.

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**FY 2010 Recipient Name:** Prince George's County, Maryland

**Award Number:** 2010-DN-BX-K095

**Award Amount:** \$342,645

**Abstract:** The Prince George's County Serology/DNA Laboratory, an ASCLAD-LAB accredited Laboratory is requesting funds under the Forensic DNA Backlog Reduction Program for the purpose of purchasing reagents to be used in in-house analysis, a Qiagen EZ1 XL that extracts 14 samples at one time, overtime to ensure completion of the analysis, the purchase of a micro-centrifuge for the post amplification room, continuing education and training of the DNA staff, and the purchase of a copier and an automatic document sequencer.

The goal of this project is to complete the analysis of 272 backlogged cases in-house. The economic hardships have resulted in the laboratory seeing delays in its ability to obtain reagents in a timely manner resulting in delays in casework analysis. Reagents obtained through this grant will allow the laboratory to obtain critical reagents as needed. This will result in a faster turnaround time and higher throughput as a result of the increase ability of the Qiagen EZ1 XL to extract 14 samples at one time. This will be in addition to the present EZ1s that extract 6 samples at one time. The addition of a centrifuge in the post amplification room will also enhance the quality of the work coming out of the laboratory.

Additionally, another goal is ensuring that the laboratory is equipped with the relevant supplies needed in the form of a copier for printing and copying reports. The automatic document sequencer will allow analysts to label and number their DNA reports in a shorter time than what is presently done. The funds will also ensure that the DNA staff remains in compliance by meeting the continuing education requirement mandated by the DNA Quality Assurance Standards. Finally this grant will ensure that 272 cases are analyzed in 18 months, ensure that appropriate profiles are entered into CODIS and ensure continuity of the casework analysis process at the Prince George's County Police DNA Laboratory.

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**FY 2010 Recipient Name:** Montgomery County, Maryland

**Award Number:** 2010-DN-BX-K070

**Award Amount:** \$103,236

**Abstract:** The Montgomery County Department of Police, Crime Laboratory, Forensic Biology Unit (MCCL FBU) is an ASCLD accredited local government crime laboratory conducting forensic DNA analysis for a population of 971,600 citizens of Montgomery County, Maryland. The project goals are to improve the DNA analysis capacity and reduce the number of backlogged DNA cases in the MCCL FBU. This improvement will be accomplished by increasing the DNA sample throughput of each analyst and by decreasing the number of days between the submission of biological evidence to the laboratory and the delivery of the test results to the investigating agency (turnaround time).

There are two main areas, instrumentation and training, that this project will focus on improving in order to reach our goals. Instrumentation capability will be increased through the acquisition of additional quantitation, amplification, robotics, and digital documentation equipment. The purchase of an additional HID Real-time 7500 quantitation system and GeneAmp® PCR System 9700 thermal cycler will increase the capacity of the Unit by allowing analysts to simultaneously perform the quantitation and amplification steps for multiple batches of DNA samples. Another instrument which will aid in increasing sample throughput is the addition of an extraction robot, QIAcube. Eleven convertible multitouch tablets with digital pens are being requested to digitally streamline the current manual note-taking process necessary for the examination of each item of evidence. Digitizing the documentation process will enable the laboratory to provide for automated back-up of data in addition to gaining efficiencies of electronic forms utilization. Tablets will also be located in specific areas of the laboratory in order to assist with streamlining the documentation process involved in conducting the quality checks required for the instrumentation and critical reagents utilized by the Unit. Finally, the addition of a small autoclave dedicated to the post-amplification area of the laboratory will eliminate materials being transported to other “clean” areas of the laboratory for autoclaving purposes, thereby improving the quality of results through reduction of potential contamination sources. The remaining main area of focus entails the analysts attending conferences to ensure that the Unit stays abreast of new and upcoming technologies to improve DNA analysis capacity and receive current instruction involving mixture interpretation. This training will also assist analysts in meeting accreditation standards, as well as working more effectively.

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**FY 2010 Recipient Name:** City of Baltimore, Maryland

**Award Number:** 2010-DN-BX-K105

**Award Amount:** \$469,149

**Abstract:** Excessively high-crime has plagued the City of Baltimore for many years. The current

administration, lead by the Honorable Stephanie Rawlings-Blake, has vowed to continue the recent improvements in the culture of violence through innovative strategy, collaborative efforts, and prosecutorial might. To that end, a primary focus has been the Baltimore City Police Department's Crime Laboratory [BPD-CL], specifically as it relates to DNA analysis. While the BPD-CL contains a commended, ASCLD accredited, full service DNA laboratory, processing this type of evidence is costly and time consuming.

Moreover, thousands of cases remain in backlog awaiting DNA analysis. The proper collection, testing, and matching of these samples are critical to the effective administration of justice. Unfortunately, ever-shrinking fiscal budgets, increased demand, and low staffing levels conspire to reduce the BPD-CL's DNA program's effectiveness.

The goal of this project is to reduce the backlog of DNA evidence awaiting analysis. The practical application of this effort will be to extend the contracts of two casework technicians, four serologists, one evidence technician, hire two DNA technicians, the addition of an automated computer data backup device, PCR hoods for evidence processing, and overtime and outsourcing funds. The acquisition of these resources will satisfy two goals; one, the increased processing of actual DNA backlogged cases, and two, a BPD-CL that is effectively using current full-time staff resources to aggressively pursue the current caseload with innovative approaches and thus professionally serve the more than 650,000 residents of Baltimore City.

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**FY 2010 Recipient Name:** Maine State Police

**Award Number:** 2010-DN-BX-K059

**Award Amount:** \$150,000

**Abstract:** The Maine State Police Crime Laboratory continues to experience growing backlogs in criminal DNA cases. Previous investments of both federal and state funding have substantially increased the lab's capacity. State-funded staff is able to process most incoming cases; however, a portion of the backlog that began to build in 2003 still exists. That forensic casework backlog is currently 335 cases. It is anticipated that the backlog will more than double by September 30, 2010 to 685 cases due to a temporary reassignment of a significant portion of our staff to process convicted offender samples in our backlog.

The DNA unit of the laboratory consists of a staff of 7. This includes one supervisor, one part-time technician, three state-funded analysts, and one analyst working under a federal grant. Another analyst works only on convicted offender samples. Average staffing casework output is 14 cases per analyst per month. The average samples per case are 10.

The FY2010 Forensic DNA Backlog Reduction Program funding will be targeted for the continued salary support of one existing full-time Forensic DNA Analyst position that is

currently funded with the FY2009 Forensic DNA Backlog Reduction Program. Funding will also be used to support the salary of a second Forensic DNA Analyst position for 16 hours a week for casework analysis. This second analyst currently works part time under the FY2008 Convicted Offender and/or Arrestee Backlog Reduction Program. The hours and duties under each grant will remain completely separate and documented for future audits. The grant will be used to support the salaries for a 12 month period. The remaining balance of the funding will be used to purchase quantification and profiling supplies.

The goal is to use these two analysts to handle, screen and analyze forensic casework evidence that may contain DNA. It is expected that the two analysts will process 252 of the backlogged DNA cases during the grant period. The progress of these analysts will be tracked on a weekly basis by tracking cases completed for each. By the end of the project period we will be able to report quantities that the backlog would have increased if not for the two analysts.

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**FY 2010 Recipient Name:** Michigan State Police

**Award Number:** 2010-DN-BX-K153

**Award Amount:** \$2,322,645

**Abstract:** The Michigan State Police requests FY 2010 Forensic DNA Backlog Reduction Program funding to assist the Forensic Science Division (FSD) in reducing the statewide backlog of DNA casework awaiting analysis and to increase the capacity of its DNA and Database laboratories. The requested funding will be used to: (1) make overtime available for the purpose of backlog reduction; (2) continue payroll support for laboratory personnel; (3) provide continuing education to laboratory personnel; (4) purchase DNA database collection kits; and (5) enhance sample storage and tracking capabilities.

DNA analysis conducted under this program will be maintained pursuant to all applicable federal privacy requirements. All eligible profiles obtained with funding from this program will be entered into the Combined DNA Index System (CODIS) and uploaded to the National DNA Index System (NDIS), when applicable. Participating laboratories will follow the NDIS DNA Data Acceptance Standards for all profiles uploaded to NDIS.

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**FY 2010 Recipient Name:** Hennepin County, Minnesota

**Award Number:** 2010-DN-BX-K155

**Award Amount:** \$107,965

**Abstract:** Demand for DNA testing in the Hennepin County Metropolitan area continues to climb at a precipitous rate. Yearly case submissions at the Hennepin County Sheriff's Office - Crime Laboratory Unit (HCSO-CLU) have increased from 177 cases in 2004 to an estimated 1500 cases in 2010. Evidence submitted from high volume property crimes continues to be a significant source of case submissions; however, recent national attention focusing on old and

untested sexual assault evidence collection kits will contribute to the labs caseload in the coming years. The increase is expected to consist of old cases that have never been submitted and an increase in new sexual assault cases submitted due to the reluctance of law enforcement agencies to hold on to sex kits they may not have submitted in the past. We expect that most agencies in the HCSO jurisdiction will have policies requiring the submission of most sex assault kits to the lab for testing.

To effectively managing the increase in DNA testing on sexual assault evidence collection kits the lab is requesting instrumentation that will speed the processing and body fluid identification from this type of evidence. A digital evidence documentation system will allow technicians to rapidly document and record evidence images without the need for lengthy narrative or sketch descriptions. A fluorescent microscope in conjunction with kits used to tag sperm heads with fluorescently labeled antibodies will allow the lab to easily and rapidly identify spermatozoa even when concealed by heavy layers of epithelial cells. A specialized alternate light source will make the examination of clothing for body fluid stains easier and less cumbersome.

This upstream processing of more biology evidence will produce many additional samples for DNA analysis and therefore, additional supplies and overtime are being requested to insure the HCSO lab can begin to alleviate long turn around times and greatly reduce the backlog of cases awaiting DNA analysis.

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**FY 2010 Recipient Name:** Minnesota Department of Public Safety

**Award Number:** 2010-DN-BX-K164

**Award Amount:** \$527,121

**Abstract:** During the past few years, the BCA Laboratory has taken a multifaceted approach to improving timeliness and overall quality of forensic DNA analysis. The Federal DNA Backlog Reduction and Capacity Enhancement grants have played a critical role in this approach. The BCA is seeking to continue this approach through the use of funding from the 2010 DNA Backlog Reduction grant. The approach seeks to continue to improve timeliness by through supplementing State resources in the areas of personnel, supplies and maintenance of critical equipment used in forensic SNA analysis. The plan would also work to increase the capacity of the Lab by updating older instrumentation or the purchase of new equipment. The plan also supports the BCA's effort to ensure that meaningful continuing education opportunities are made available to scientific staff in the DNA section of the Laboratory.

The BCA Laboratory is compliant with all Federal privacy requirements, including those described in 42 U.S.C. § 14132(b)(3) and Minnesota State Statute 299C.155.

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**FY 2010 Recipient Name:** St. Louis County, Missouri

**Award Number:** 2010-DN-BX-K149

**Award Amount:** \$170,244

**Abstract:** An important objective of the St. Louis County Police Department Crime Laboratory is to provide more efficient processing of DNA samples and to increase the number of forensic DNA samples processed. The Laboratory serves more than one million citizens and provides services to the St. Louis County Police Department, as well as 91 municipalities, 60 of which have their own police departments.

The Biology/DNA Unit within the Crime Laboratory has seen a significant increase in the number of cases submitted for biological screening and DNA analysis each year due to the success of obtaining profiles from samples which would previously have not been submitted to the laboratory. The DNA/Biology Unit currently employs five qualified DNA analysts, two analysts that perform biological screening analysis full-time, one part-time biological screening analyst, and one part-time DNA technician.

The two full-time and one part-time biological screener positions and the DNA technician position are all currently funded by the 2009 Forensic Casework DNA Backlog Reduction Grant. Maintaining these four grant funded employees with the 2010 Forensic Casework DNA Backlog Reduction Grant will ensure all types of backlogged DNA cases will be processed in a timely manner. This will result in an increase of eligible samples entered into the CODIS database as well as an increase in the number of investigations aided. These additional employees help to facilitate validations in the Biology/DNA unit which would not have been possible without grant funding.

The St. Louis County Crime Laboratory is currently installing and optimizing a Laboratory Information Management System (LIMS). Grant funds will be used to add additional laptop workstations and bar coding equipment to facilitate the transition to the new electronic system. Funding through the 2010 Forensic DNA Backlog Reduction Program will allow the St. Louis County Police Department to continue to provide efficient analysis of DNA cases.

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**FY 2010 Recipient Name:** St. Louis Metro Police Department, Missouri

**Award Number:** 2010-DN-BX-K147

**Award Amount:** \$350,292

**Abstract:** Project Goals and Objectives: The goals of this project are simple. The St. Louis Metropolitan Police Department Laboratory will perform biological screening and DNA analysis on any backlog case. The St. Louis Metropolitan Police Department reported a total of 7,383 Part 1 Violent Crime offenses which is 25.4% of the state of Missouri's total. The goal of the St. Louis Metropolitan Police Department is to screen and where appropriate perform DNA analysis



on evidence in at least 350 cases. If an eligible DNA profile is obtained, the profile will be entered into CODIS for national searching. By hiring additional employees and using overtime funds to increase throughput, the backlog would be reduced creating a more efficient DNA laboratory. The overall objectives will be to reduce the number of untested forensic casework samples, enter profiles into CODIS and obtain hits, and prosecute the suspects.

**Proposed Project:** The project will be designed in the following manner. A biological screening will be performed on the backlog cases, and where appropriate DNA analysis will be performed on those samples identified. The CODIS administrator will oversee the importing of all eligible samples. The CODIS administrator will also perform uploads to the State CODIS Administrator for searching against the state and national databases. If a hit has occurred or a suspect is confirmed, the St. Louis Metropolitan Police Department will do everything in its power to assist the State of Missouri in the prosecution of these identified individuals.

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**FY 2010 Recipient Name:** St. Charles County, Missouri

**Award Number:** 2010-DN-BX-K148

**Award Amount:** \$36,866

**Abstract:** As DNA evidence continues to be more prevalent and valuable to criminal investigators, it is incumbent upon crime laboratories to utilize the most efficient and accurate equipment and technologies available to analyze numerous and varied forensic DNA samples. The prudent use of analyst overtime is a proven way for the St. Charles County Sheriff's Department Criminalistics Laboratory [SCCSDCL] to reduce its DNA backlog and improve the forensic DNA testing it provides the law enforcement community of St. Charles County, Missouri.

The SCCSDCL will use its portion (\$36,866) of the FY 2010 Forensic DNA Backlog Reduction Program to enhance its DNA testing capacity and reduce its DNA backlog by providing overtime for analysts and purchasing DNA testing supplies.

The three major goals of this program are:

1. Reduce the DNA backlog by 20%
2. Reduce the turnaround time for DNA cases to less than 55 days
3. Increase the average number of DNA samples analyzed per analyst to over 40 per month.

Achievement of these goals will increase the overall productivity and efficiency of the SCCSDCL - positively impacting the investigations and prosecutions of all laboratory cases, especially those with DNA evidence. This program will also strengthen the SCCSDCL's commitment to the local law enforcement agencies it serves.

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**FY 2010 Recipient Name:** Missouri State Highway Patrol

**Award Number:** 2010-DN-BX-K173

**Award Amount:** \$433,826

**Abstract:** The Missouri State Highway Patrol (MSHP) Crime laboratory provides PCR-STR DNA analysis on samples from crime scene evidence without cost to all law enforcement agencies within Missouri. The need for DNA analysis continues to increase at a rate greater than present funding and resources support. Our continuing goal is to increase the capacity of our DNA testing services to improve turnaround time, decrease backlogs and increase throughput.

The MSHP Laboratory's portion of Missouri available funds for 2010 has been calculated to be \$433,826. This amount is based on the Highway Patrol's portion (9,144 = 31.4%) of the State's 29,098 UCR, Part 1 violent crimes reported to the FBI in 2008. The Laboratory will use the awarded funds to purchase one 3500 Genetic Analyzer, cover our annual maintenance agreements for 14 instruments, and purchase DNA reagents, supplies and amplification kits. It is expected that once implemented, these improvements will increase throughput by 20% and decrease backlogs by 30%. Any remaining funds will be used for supply enhancements at the Jefferson City facility.

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**FY 2010 Recipient Name:** Board of Police Commissioners, Kansas City, Missouri

**Award Number:** 2010-DN-BX-K163

**Award Amount:** \$389,367

**Abstract:** The Kansas City Police Crime Laboratory (KCPCL) has experienced tremendous success with prior NIJ DNA backlog reduction grants, and is committed to continuing that success with the FY 2010 Forensic DNA Backlog Reduction Program grant. Prior grants have focused on the identification and analysis of unsolved "cold" cases. The KCPCL has been able to maintain its work in this area as new "cold" cases are reviewed and submitted to the laboratory. Backlogs still exist though in the screening and DNA analysis of regular cases. In addition, requests for analysis of property crimes, weapons, and narcotics cases has dramatically increased as field officers have gained training in the collection of biological samples and as the power of DNA evidence has become more widespread. The main objective of this grant program will be to expedite the DNA analysis of all pending casework such that the overall turnaround time as well as the number of cases pending analysis decreases. These objectives will be met through the use of two grant funded criminalists in the Trace Evidence section who will be responsible for screening cases for biological evidence. Criminalists in the Trace Evidence section will also work overtime to screen additional cases for biological evidence. Qualified DNA analysts (including a grant funded DNA criminalist) will work overtime to perform DNA analysis on pending cases. Two contract technicians will perform many entry level tasks within the DNA section as well as aid in the screening of biological evidence and databanking of known DNA standards. In addition, capacity enhancements will be addressed to help streamline and expand

the capabilities of the DNA section. Finally, a portion of the grant funds will be used for the validation of a new DNA technology in the laboratory.

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**FY 2010 Recipient Name:** Mississippi Department of Public Safety

**Award Number:** 2010-DN-BX-K044

**Award Amount:** \$387,663

**Abstract:** The Mississippi Crime Laboratory System (MCL) operates the State of Mississippi's forensic DNA laboratory. The Mississippi Crime Laboratory System (MCL), consisting of a central full-service laboratory in Jackson and three regional laboratories, is an ASCLD accredited system that undergoes external audits once every two years. MCL is a participant in NDIS and maintains all DNA analyses under the applicable federal privacy regulations.

The Mississippi Crime Laboratory (MCL) faces the challenge of providing essential forensic services to the criminal justice system of the state in a time of reduced budgets and increasing crime. At the present time, all DNA analysis, are performed in the Jackson Laboratory. The regional laboratories receive evidence from agencies in their region and provide weekly courier service to the main lab for evidence requiring examinations not available at the branch lab. Conventional Serological Examinations have been added to the services provided by two of the three regional laboratories, the Meridian and the Batesville Laboratories. The Gulf Coast Laboratory which was completely destroyed in Hurricane Katrina could not take on these additional services because the laboratory is housed in a temporary facility and lacks the space required for a Bioscience Unit at the present time. However, a new Gulf Coast Laboratory is under construction with a completion date of July 2010. The new Laboratory includes space for basic Serology examination and DNA analysis. Once completed, the new Gulf Coast Bioscience laboratory unit will receive Bioscience cases from the agencies served by the Gulf Coast laboratory; provide proper evidence documentation, perform serological examinations, and provide DNA analysis as appropriate. When Bioscience examinations (Serology and DNA) can be carried out in the Gulf Laboratory, it will no longer be necessary to forward evidence to Jackson for these examinations. This will eliminate a bottle neck in the system and increase the efficiency and timeliness of the MCL response to requests for Bioscience examinations. Providing these services locally means that communication will be enhanced and more effective case management and coordination can be achieved.

The objectives of this project are to improve the MCL system's DNA laboratory infrastructure and analytical capacity. This can only be achieved if we are able to continue the employment of four individuals whose jobs will be lost with the ending of existing grants

Achieving the Objectives: The Mississippi Crime Laboratory intends to achieve the objectives by accomplishing the following goals:

1. Maintaining the improved turnaround-time for DNA cases that has been achieved
  2. Increasing DNA analysis throughput
  3. Insuring continued development of the MCL DNA Unit by validating new DNA analysis technologies for use
  4. Maintaining the effectiveness of the DNA Unit by funding continued employment of four individuals whose jobs would be lost at the close of existing grants
  5. Providing the required continuing education for existing DNA staff
  6. Supplying the new Gulf Coast Laboratory DNA unit with additional equipment
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**FY 2010 Recipient Name:** Montana Department of Justice

**Award Number:** 2010-DN-BX-K157

**Award Amount:** \$150,000

**Abstract:** The goals and objectives of this project include: i) a reduction in forensic DNA sample turn-around-time, ii) an increase forensic DNA sample throughput and iii) a decrease the forensic DNA casework backlog.

With funding from the FY08 Forensic DNA Backlog Reduction Program, the Montana Department of Justice Forensic Science Division Laboratory hired a DNA technician to achieve the goals of the program. With funds from the FY09 Forensic DNA Backlog Reduction Program the DNA technician will be trained as a DNA analyst.

The plan for this project is to use the Federal funding requested in this FY 2010 program to: i) continue to employ the DNA technician/analyst, ii) fund 0.5 FTE for the hiring of a IT LIMS specialist, iii) purchase a Promega Maxwell 16 DNA extraction instrument (with an extended warranty) for casework sample processing and iv) provide external training for three existing DNA Analysts in 2010 and one existing DNA Analyst in 2011.

The 0.5 FTE IT LIMS specialist will take duties and responsibilities for LIMS function away from a Serologist and a DNA analyst who share responsibilities for maintaining the accuracy and utility of the system. This will allow these analysts to direct their full efforts towards casework production.

The robotic DNA extraction instrument will be purchased and brought on-line to decrease sample processing “hands-on” time and thereby increase sample and case and sample throughput capacity. A side by side comparison of the two primary producers of such equipment for the forensic community will be performed to determine which instrument best suits the needs of the MT FSD laboratory.

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**FY 2010 Recipient Name:** Charlotte-Mecklenburg Police Department, North Carolina

**Award Number:** 2010-DN-BX-K165

**Award Amount:** \$349,200

**Abstract:** The Charlotte-Mecklenburg Police Department (CMPD) Crime Laboratory seeks \$349,200 to implement multiple projects in an effort to decrease turnaround time and streamline operations in the examination of DNA casework. The funding will allow the CMPD to maintain and support one Criminalist II position and one Criminalist I position funded under the 2009 Forensic DNA Backlog Reduction Program, and to add the position of a Property Control Technician. It also provides training for these individuals. Equipment will be purchased for our new CODIS server requirements and for more thermal mixers in the laboratory.

The CMPD would be unable to maintain these Criminalist positions without funding and would ultimately see an increased backlog if the positions were lost. With the increase of case output, the Biology section has put a burden on Property Control for the transportation of evidence to the laboratory, having our own technician, would allow us to receive evidence when we need it without putting an undue burden on the Property Control Section. Additionally, the requirements of the CODIS server has drastically changed and the CMPD crime laboratory needs to upgrade their CODIS server. Funding from this grant will provide the assets necessary to reduce the backlog of cases by an estimated 20% percent during the grant period and reduce the time needed for processing from an average of 180 days to an average of 160 days. This will result in more rapid identification of individuals responsible for crime and a quicker exoneration of the innocent, which will further aid the criminal justice system.

The CMPD Crime Laboratory is a unit of the City of Charlotte, and part of the Charlotte-Mecklenburg Police Department. It is an ASCLD-Lab accredited laboratory, undergoes external audits every two years, and uses CODIS on a daily basis to upload profiles to SDIS which are then uploaded to NDIS. All DNA analysis performed under this program will be maintained under the applicable federal privacy regulations.

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**FY 2010 Recipient Name:** North Carolina Department of Crime Control and Public Safety

**Award Number:** 2010-DN-BX-K198

**Award Amount:** \$1,646,246

**Abstract:** History: The North Carolina State Bureau of Investigation Crime Laboratory is an ASCLD-LAB accredited laboratory that provides DNA testing for a population of about 9,380,884 people. The North Carolina State Bureau of Investigation (SBI) has been performing forensic DNA analyses for law enforcement agencies across the state since 1990. However, as the reliability and the reputation of the use of DNA analysis for forensic means increased, so did the demand for its use. In order to reduce the in-laboratory backlog and focus the laboratory's resources on those cases most needing attention, the SBI implemented a case acceptance policy on three different occasions. This policy limited the cases worked by the crime laboratory to only those cases which contained known blood standards from all individuals associated with the

crime. In addition, the analysis of property crimes and other minor crimes was cut to a minimum. In this manner, case turnaround times were kept to a minimum and the overall level of service was enhanced.

With the advent and maturation of the Combined DNA Indexing System (CODIS), forensic DNA analysis is increasingly being used as an investigative tool. The number of requests for analysis on all types of cases consistently outpaces the laboratory's ability to work these cases. To meet this demand, the SBI has devoted, and continues to devote, additional personnel. Until December of 2002, there were ten analysts in the Forensic Biology Section that were certified in either Body Fluid Identification or DNA analysis. In December of that year, the Attorney General began to push for additional analysts whose primary goal was to identify and work the thousands of untested rape kits that sat on the shelves of law enforcement agencies across North Carolina. His plan was to ask the North Carolina General Assembly for six additional DNA analysts each year for the next four years. The section was immediately granted six new positions that year. In 2003, the section was allotted two sets of increases, 1) six additional DNA analysts to work on forensic casework and 2) two additional DNA analysts and two database analysts whose job responsibility would be to assist with the increase in workload as a result of North Carolina becoming an all-felons state with regards to CODIS. Although the Forensic Biology section was given these increases in staff, the legislature did not provide funding for additional space. In 2004, the General Assembly approved an expansion for the Crime Laboratory, but due to overcrowding in the section, no additional personnel were allocated. In 2005, the Section broke ground for a \$5.1 million, five-story laboratory expansion and was allocated an additional six DNA analysts. In 2007, using funds from the 2005 DNA Capacity Enhancement Grant, this existing facility was renovated and finished with hoods, telephones, casework, etc. The total number of positions in the Forensic Biology Section now stands at approximately 44 analysts. The training for the majority of these new employees is now essentially complete. Recent legislation included four additional positions for the unit. The hiring process will begin soon with training to commence upon hiring.

As part of National Institute of Justice (NIJ) DNA Backlog Program grants, the Section worked numerous backlogged cases and obtained CODIS hits thereby solving cases which would not have been solved had it not been for the funds provided by these grants. In 2009, with the assistance of grant money from NIJ, the Section worked 2589 requests to reduce the on-hand backlog, entered 665 suspect DNA profiles into CODIS, entered 468 forensic unknown samples into CODIS and obtained 268 CODIS hits. In addition, the Section was able to remove all restrictions on all un-subject cases.

A negative consequence, however, is that the DNA program has become a victim of its own success. As more cases get solved solely as a result of DNA analysis, word spreads from officer to officer and agency to agency and case submissions have increased dramatically. This is

particularly true with unsolved property crimes and those cases involving “touch DNA evidence”. Therefore, in spite of grant money provided by NIJ, case backlogs have not decreased much but have increased over time. In the calendar year 2008, there were 2578 jobs submitted to the Forensic Biology Section. That number increased to 3318 in 2009 and in the first five months of 2010 there were 1353 submissions (projection of 3247 submissions for the year based on these numbers). Section case completions rose from 1713 in 2008 to 2589 in 2009 and in the first five and a half months of 2010 the section has completed 1176 submissions. That puts the section on pace to complete 2667 submissions for the year.

#### Project goals and objectives

In an attempt to reduce this backlog, the SBI proposes the following goals:

1. To work an additional 1000 cases in-house with an eye toward working more unsolved cases and entering additional profiles into CODIS
    - a. As submissions increase, it becomes even more crucial to work additional cases to maintain acceptable turnaround times. The section plans to do this through the use of overtime funding and better equipment and automation as detailed in the next section. This increase also entails more money spent on supplies.
  2. To continue the process of purchasing and validating new systems and equipment to better automate and streamline the analysis process.
    - a. The section currently utilizes three 3130xls between its casework analysts and database analysts. A fourth instrument is currently under validation; this should reduce bottlenecks when it is put online. The section plans to purchase 4 extraction robots to increase efficiency during the extraction phase. Currently, no robotics are used in casework and incorporating their use should increase productivity. The section has one 7500 quantitation instrument which recently completed its validation. The next step is to have Applied Biosystems perform a dual validation of Minifiler and quant Duo on this instrument. Once this validation is complete, two additional 7500s would be purchased. These models are better equipped for the newer amplification systems being released and allow the analyst to best determine the next course of analysis after the quantitation step. In addition, the section currently has four 7000s which will need to be replaced in the near future due to age. The section needs to purchase additional 9700s for two reasons: casework analysts and database analysts compete for their use, creating a bottleneck, and the older 9700s need to be replaced due to age. The laboratory will purchase this equipment from the FY2009 grant funding and proposes to purchase the same equipment again from the FY 2010 grant. In addition, a new server will be bought for CODIS to replace the old one.
  3. To provide funding for mandated training for analysts and for maintenance contracts for the equipment and instrumentation used in the section.
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**FY 2010 Recipient Name:** North Dakota Office of the Attorney General

**Award Number:** 2010-DN-BX-K162

**Award Amount:** \$150,000

**Abstract:** A. Agency: Office of Attorney General, Crime Laboratory Division

Jurisdiction: North Dakota

B. Project Title: Forensic DNA Backlog Reduction Program – North Dakota

C. Project Period: October 1, 2010 to March 31, 2012

D. Amount Requested: \$150,000

E. Brief Description of Proposed Project: Funding will be used to replace aging equipment, train DNA laboratory staff, and purchase supplies for in-house DNA analysis of casework samples.

F. Overall Objective(s): The overall objective is to decrease the current backlog of forensic casework in the DNA Unit of the Forensic Section of the Crime Laboratory Division and to enhance the basic infrastructure of DNA analyses.

G. Project Director: Hope Olson, Director, Crime Laboratory Division, Office of Attorney General, 2641 East Main Avenue, Bismarck, ND 58501-5044. Phone: (701) 328-6359, Fax: (701) 328-6185 Email: holson@nd.gov.

H. Project Period: Authorizing Official of Agency Making Application: Hope Olson, Crime Laboratory Division, Office of Attorney General, 2641 East Main Avenue, Bismarck, ND 58501-5044. Phone: (701) 328-6359, Fax: (701) 328-6185

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**FY 2010 Recipient Name:** Nebraska State Patrol

**Award Number:** 2010-DN-BX-K199

**Award Amount:** \$250,756

**Abstract:** The Nebraska State Patrol is a unit of state government with an existing ASCLD/LAB accredited crime laboratory. The Nebraska State Patrol Crime Laboratory undergoes annual DNA audits, including an external DNA audit every two years. The purpose of the Nebraska State Patrol Crime Laboratory DNA Backlog Reduction program is to reduce the time required to process forensic DNA samples, to increase throughput and reduce existing DNA forensic casework backlog. \$250,756 in funding provided by the National Institute of Justice is requested to achieve this goal.

To accomplish program goals, objectives and performance measures have been established. When completed, improvements over current operations in forensic DNA casework backlog reduction and crime laboratory capacity enhancement for DNA analysis will have occurred. The following information details the Nebraska State Patrol Crime Laboratory DNA Backlog Reduction program.

- Objective 1: Improve the Crime Laboratory's DNA analysis capacity.



- Performance Measure: Reduce the average number of days between the receipt of a forensic DNA sample and the delivery of results to the appropriate agency from 176 to 120 days.
- Performance Measure: Each analyst will increase the number of samples analyzed each month from 25 to 30.
- Objective 2: Reduce the number of backlogged DNA cases
  - Performance Measure: Reduce number of backlogged DNA cases from 128 to 100 cases.
  - Performance Measure: The number of CODIS hits attributable to the forensic casework DNA analyses funded under this announcement.

Six tasks will be undertaken to enable the successful completion of this project. Those tasks are: 1) continue the funding for one forensic scientist, 2) provide overtime to all forensic scientists, 3) obtain a Porter Lee CODna Prelog Module, 4) provide staff training, 5) purchase a multicapillary genetic analyzer, and 6) purchase a computer for an additional CODIS workstation.

When complete, the outcome of this program will be a measurable improvement in the number of days between the submission of a sample to the delivery of test results, an increase in the overall DNA analyses completed, and a reduction in the Nebraska State Patrol Crime Laboratory's backlog of forensic DNA casework.

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**FY 2010 Recipient Name:** New Hampshire Dept. of Safety

**Award Number:** 2010-DN-BX-K060

**Award Amount:** \$150,000

**Abstract:** Project Goals and Objectives: Funding is being requested to identify and test backlogged serology and DNA casework samples through funding overtime and supplies for analysis. Continuing use of the JusticeTrax LIMS system and an additional computer will assist in streamlining the analysis process. It is hoped that by the end of the award period, the number of backlogged cases awaiting screening and/or processing for DNA will be at least maintained if not reduced. In addition, funding is being requested to maintain the laboratory's compliance with the FBI's Quality Assurance Standards for DNA Testing Laboratories, by providing funds for continuing education and proficiency testing. The laboratory's security for areas in which DNA and serology evidence is stored and/or examined will be enhanced as well.

**Project Plans and Methods to Achieve Goals:** Funding will be used for overtime hours by serology and DNA analysts to work on cases above and beyond what could be accomplished during regular business hours. Funding to purchase consumables for serology screening and DNA analysis is being requested, as is the purchase of an additional computer to be used in the serology laboratory and LIMS licenses for all serology/DNA based computers. Training and

proficiency testing will be provided to ensure analyst's continuing compliance with the FBI's Quality Assurance Standards. The installation of electronic proximity locks to DNA/serology areas in the laboratory will strengthen the security in the laboratory.

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**FY 2010 Recipient Name:** New Jersey Department of Law and Public Safety

**Award Number:** 2010-DN-BX-K086

**Award Amount:** \$1,312,628

**Abstract:** The New Jersey State Police, Office of Forensic Sciences (NJSP OFS) proposes to use funding from the FY 2010 Forensic DNA Backlog Reduction grant to supplement the needed cost to finish the renovation project for an in-house CODIS laboratory relocation awarded under NIJ Grant 2009-CN-BX-K161. The DNA Laboratory is located at the Hamilton Technology Complex.

OFS proposes to utilize the grant to fund an overtime program to analyze approximately 400 violent crime cases from the case backlog and upload the resultant DNA profiles generated into the CODIS database. The accomplishment of this task will provide for the analysis of potential DNA evidence and databasing of DNA profiles from a substantial number of the New Jersey State Police backlogged cases. It proposes using some of the grant funding to purchase DNA specific equipment to replace existing genetic analyzers with the latest instrument models to assist in analyzing DNA samples for increased throughput. In addition, the OFS would like to utilize funding from this grant for training opportunities. The Promega 21st International Symposium on Human Identification is taking place October 11-14 in San Antonio, Texas. Funds from prior grants have allowed the OFS to send scientists to this meeting in the past and have found it to be an excellent source of information about current and future happenings in the forensic DNA field. The other training opportunity involves bringing an outside speaker to the laboratory (as yet to be determined) and making it available to the entire DNA unit. Considering the restrictions on travel at this time in the State of New Jersey, this grant will benefit the Laboratory since these training opportunities will help fulfill the yearly training requisite for the DNA analysts according to the FBI Quality Assurance Standards for Forensic DNA Testing and Databasing Laboratories.

The New Jersey State Police CODIS Unit has uploaded a total of 208,980 convicted offender profiles in addition to 8720 forensic unknowns, placing NJSP in the top ten in the nation. Prior to 2006, all convicted offender samples were outsourced, but with assistance of NIJ grant funds an in-house CODIS Laboratory was put on line in 2006, enabling samples to be processed more efficiently and at reduced expense. Due to this initiative over 107,247 convicted offender samples have been processed to date in-house. The NJSP Office of Forensic Sciences CODIS Laboratory processes an average of 25,000 convicted offender samples per year. This number could effectively increase by 25 percent if the pending NJ Legislation requiring the collection of

samples at the time of arrest is passed. As it exists, the CODIS Laboratory would not be able to manage the increased number of samples submitted to the Laboratory.

The New Jersey State Police CODIS database contains over 8720 forensic unknown profiles. The funding through this DNA Backlog Reduction Program will provide the opportunity to expand that number with profiles from additional cases. The lab cannot presently attain the reduction in the backlog without the use of an overtime program. Consequently, in order to analyze the estimated 400 cases it will be required that an overtime program be instituted in order to accomplish the complete analysis from preliminary screening to mailing of a final DNA report to the appropriate agencies.

The overtime program will help to reduce the current bottleneck in the screening of cases for biological evidence, which can then be further analyzed for DNA and the results uploaded into CODIS. In addition, overtime funded through the NIJ grant would allow the lab to significantly decrease its turn-around time on other case submitted. The purchase of new DNA equipment will afford the laboratory with the latest equipment that will increase through put of samples analyzed. All results that yield eligible profiles will be uploaded to the CODIS database.

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**FY 2010 Recipient Name:** City of Albuquerque, New Mexico

**Award Number:** 2010-DN-BX-K107

**Award Amount:** \$182,756

**Abstract:** The intent of this grant program is to provide the City of Albuquerque Police Department Criminalistics Laboratory (APDCL) DNA Unit the resources to reduce the amount of backlogged cases that exist with the City of Albuquerque and the County of Bernalillo. The main objective of this lab is to use this grant to outsource DNA samples to an outsourcing vendor and to hire a full time serologist to allow for greater manpower available to process and analyze casework.

The project plan then is to purchase contracts with at least two outsourcing vendors via the “request for proposal” method to assist in working bench work backlogged cases. Vendors now offer services that render full reports after DNA analysis at an average cost of \$500 per DNA sample. So property and violent crimes that require serology only can be sent to private vendors for complete “analysis to written report” work. Property and violent crimes that require more complex work can be sent for analysis only and reports generated in the lab. Assistance will come from a newly hired serologist, at a cost of around \$69,424 per year, who will cut cases for outsourcing and in-house work as well as assist in serology only cases.

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**FY 2010 Recipient Name:** State of New Mexico

**Award Number:** 2010-DN-BX-K063

**Award Amount:** \$410,730

**Abstract:** Project Goals and Objectives

The main goal of this project is to utilize grant funds to complete the addition of the new DNA data basing program to the NM DPS Forensic Laboratory and to improve overall timeliness of analytical results to submitting agencies. This project can be accomplished by the following five parts: 1) Overtime for existing staff and funding for a technician position, 2) Contractual services to complete in-house validation of new instrumentation and DNA kits, 3) Instrumentation and equipment for data basing laboratory and laboratory supplies for analysis, 4) Augmentation of continuing education and training of DNA analysts, travel expenses, and 5) associated administrative costs. Overall the goal for the NM DPS Northern Forensic Laboratory DNA section is to provide DNA analysis from the time of submission to completion in six weeks or less for at least 85% of all DNA cases once the current backlog has been addressed and to provide a more timely entry of data base samples from convicted offenders and arrestees to enhance public safety.

**Project Design:** The project addresses five areas with a focus on increasing services to include in-state data basing analytical laboratory functions and enhancing the overall timeliness of the DPS Northern Forensic Laboratory DNA section. Funds are being requested for the areas described below:

- 1) Personnel and Benefits
    - a. Overtime for existing staff to reduce backlog.
    - b. Salary and benefits for one DNA technician to handle lab maintenance and DNA section evidence accessioning duties.
  - 2) Contractor
    - a. Validate new DNA analysis technologies.
  - 3) Equipment and Supplies
    - a. Equipment and Instrumentation to complete a data basing laboratory.
    - b. Supplies for in-house laboratory handling, screening, and analysis of forensic DNA casework samples.
  - 4) Travel and Training
    - a. Continuing education and/or appropriate training for existing members of the DNA section to maintain/enhance expertise of forensic scientist.
  - 5) Administrative Costs
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**FY 2010 Recipient Name:** Las Vegas Metropolitan Police Department, Nevada

**Award Number:** 2010-DN-BX-K076

**Award Amount:** \$872,138

**Abstract:** The City of Las Vegas and the surrounding area of Clark County, Nevada have a current population in excess of 1.9 million persons and, in 2009, hosted over 3 million visitors

per month. The Las Vegas Metropolitan Police Department (LVMPD) Forensic Lab provides full service forensic analysis capabilities to the southern Nevada community. In addition, it is the sole provider of forensic DNA analysis services to all of southern Nevada. This service area includes the adjacent Nye, Lincoln and Esmeralda Counties with an additional population of approximately 50,000 individuals. The LVMPD Forensic Laboratory also operates and administers the Southern Nevada Combined DNA Index System (CODIS). The database is a CODIS Local installation with both casework and convicted offender responsibilities. As required by Nevada Revised Statute, ordinances were passed by Clark, Nye, Lincoln and Esmeralda county governments establishing the LVMPD Forensic Laboratory as the official DNA testing laboratory and repository for all DNA specimens collected under statute from the four southern Nevada counties.

The Biology/DNA Detail of the LVMPD has traditionally processed violent offenses and biological evidence associated with homicides, sexual assaults, robberies, attempted homicides, and kidnapping cases. However, in recent years, the LVMPD Forensic Lab recognized the impact it can make by performing DNA analysis, not only on the violent offenses occurring in our community, but also on the full range of property crimes, including burglaries and vehicle thefts in Southern Nevada. It has been 3 years since the Biology/DNA Detail of the LVMPD started performing DNA analysis on property crimes, and case requests for DNA analysis continue to flood the laboratory, creating a DNA backlog that has grown to a staggering rate in a short period of time. In just one year, the forensic DNA case backlog has increased by 122% from 535 cases on March 31, 2009 to 1,190 cases on March 31, 2010.

The Nevada CODIS database contains all DNA collections mandated and collected according to Nevada Revised Statute (NRS). Effective October 1, 2007, Nevada state law enacted “all felon” legislation requiring felons to submit a biological specimen to the database. This legislation, outlined in NRS 176.0916, increased the annual convicted offender specimen intake by 156% between 2007 (3,221 convicted offender specimens received) and 2008 (8,225 convicted offender specimens received). From 2008 to 2009, the number of convicted offender samples received dropped 19% (6,687 samples received in 2009), most likely due to the drop in crime and number of people facing criminal convictions. As of March 31, 2010, the Database/CODIS Unit had a backlog of 3,946 samples.

As the Biology/DNA Detail adjusts to legislative changes implemented October 1, 2007, the Nevada State Assembly and Nevada State Senate are now drafting new legislation geared toward the collection of DNA samples from arrestees. There are several drafts of “arrestee” collections being proposed ranging from: 1) all arrestees, 2) felony arrestees, and 3) specific classifications of felony arrests. As of this writing it is unknown as to which version of arrestee legislation will be implemented, if any, however the Forensic Laboratory must be prepared to handle the

increased storage, processing, and CODIS entry demands of arrestee samples should any of these proposals become law during the next few years.

The LVMPD Forensic Lab is requesting funds in the amount of \$872,138 to increase the capacity and efficiency of the laboratory. A significant step toward achieving this increased efficiency will be accomplished with the purchase of a Laboratory Information Management System (LIMS). A LIMS system would improve overall casework management and work flow through the laboratory, impacting the existing backlogs in forensic DNA casework, DNA database analysis, toxicology, firearms and toolmark comparisons, controlled substance analysis, latent print comparisons, document and shoeprint examinations, and trace evidence examinations. Incorporating a LIMS has many long-term benefits to include eliminating redundant data entry, capturing and transferring instrument data, minimizing administrative costs, accelerating report delivery, minimizing mistakes made by humans, and facilitating the interface between intra-lab and intra-agency requests. Furthermore, a LIMS would directly affect the DNA analysis process by reducing DNA case and database sample turn-around-time, increasing the number for forensic DNA and database samples processed each month, and reducing the LVMPD's existing DNA backlogs. A LIMS system would also be vital for tracking and managing database samples should the state of Nevada adopt any form of arrestee legislation. This DNA database system would alleviate a huge bottleneck currently being experienced through manual tracking and maintaining CODIS-entry metrics required for NDIS. The entire LIMS purchase would be comprised of hardware in the form of computers, barcode scanners, printers and computer servers, specialized software for equipment and laboratory work-flow interface, and customization fees which would allow the LIMS to be tailored to suit the needs of the LVMPD. Consultant costs associated with hiring a LIMS Integration Specialist to assess the needs of the LVMPD and facilitate the selection of a LIMS vendor are also being requested.

To further the goal of DNA backlog reduction, a portion of grant funds (\$185,103) will be used in the form of overtime for in-house handling, screening and analysis of at least 186 forensic DNA cases. Completing a minimum of 186 forensic DNA cases and entering eligible DNA profiles into CODIS extends above and beyond the current capabilities of the Biology/DNA Detail. To maintain compliance with continuing education and literature review requirements set forth in The Quality Assurance Standards for Forensic DNA Testing Laboratories and The Quality Assurance Standards for DNA Databasing Laboratories, funds are also being requested to facilitate DNA employee travel to forensic national meetings and purchase DNA-relevant journal subscriptions and textbooks.

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**FY 2010 Recipient Name:** Suffolk County, New York

**Award Number:** 2010-DN-BX-K084

**Award Amount:** \$246,252

**Abstract:** The 2010 Forensic DNA Backlog Reduction program is intended for increasing the throughput and timeliness of forensic analysis of evidence submitted to the Suffolk County Crime Laboratory Biological Sciences Section. This task is to be completed through the procurement of equipment and software. In addition, validation of the instrument and new DNA Analysis kits will also be performed. Funds will also be used for contract employee(s) who will be used to screen backlogged samples in preparation for DNA Analysis.

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**FY 2010 Recipient Name:** County of Westchester, New York

**Award Number:** 2010-DN-BX-K042

**Award Amount:** \$220,330

**Abstract:** Funding provided by this grant will go toward satisfying two goals: increasing the capacity of the laboratory to perform DNA analysis and reducing the backlog of uncompleted cases. The accomplishment of these goals will fulfill our pledge to furnish DNA results to investigating agencies in accordance with our 30-day turnaround time program. As a result of greater reliance by law enforcement on DNA analysis in investigations, submissions to our laboratory have increased substantially over the last 10 years (Figure 1). Utilizing the power of the CODIS DNA Network, the laboratory has been able to provide investigators with more useful and, timely information (Figure 2).

Since 1999, our laboratory has performed forensic human identity testing using short-tandem repeats (STRs). In these eleven years the demands on, and expectations of, all forensic caseworking laboratories has been to place a greater emphasis on turnaround time using increasingly more sophisticated technologies such as STR analysis. To meet these demands our laboratory currently employs both nuclear STR and Y-STR typing techniques utilizing a capillary electrophoresis platform. To ensure the highest quality in the operation of our DNA laboratory we place a great emphasis on meeting the current FBI Quality Assurance Standards. As technology has developed so have the standards changed to address new and unforeseen challenges. For example, the laboratory now must place a greater amount of time in dealing with mixture interpretation analysis caused by the increase in touch-DNA cases being submitted to the laboratory.

To maintain pace with these evolving trends and national accreditation we must have the ability to increase the laboratory's capacity for DNA analysis. With the greater emphasis placed on the use of DNA in criminal investigations comes the problem of increasing DNA backlogs. To address the issues of both capacity enhancement and reduction of our current backlog of cases, our laboratory will require upgrades in our DNA instrumentation and software applications, new laboratory supplies, hardware support via instrument service contracts, access to training opportunities and travel monies, and the capability to retain a temporary laboratory technician

currently employed in our 2009 DNA Backlog Reduction grant. The increased capacity provided by this funding will enable us to further reduce the amount of time required to complete casework that has initially met our 30-day turnaround criteria, thus substantially minimizing our current backlog. We anticipate the momentum created by this optimized workflow will substantially reduce future potential bottlenecks in the examination and analysis of DNA casework.

As part of our goal in addressing backlog cases we will not only look at the typical violent crimes associated with UCR Part 1 but will include property crimes such as burglaries. Our laboratory has had great success in solving many multiple burglaries through the use of DNA.

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**FY 2010 Recipient Name:** Monroe County, New York

**Award Number:** 2010-DN-BX-K090

**Award Amount:** \$238,475

**Abstract:** The Monroe County Public Safety Laboratory (MCPSL) is a regional crime lab that provides forensic services for an eight county region of New York State. On January 1, 2009, there were fifty (50) homicides, four hundred twenty-one (421) sexual assaults, sixty (60) robberies, eighty (80) assaults, two hundred fifty-six (256) burglaries, and one hundred thirty-four (134) other types of cases awaiting DNA analysis.

From 2009-2011, funding from both Federal and State sources will be focused on increasing the analysis capacity of the MCPSL biology section. County and State funding will be used to maintain the existing staff and to train them in more types of analytical techniques. Federal resources will be used to acquire new instruments, maintain quality assurance of existing instruments and to provide the required continuing education for existing DNA analysts.

The goals of this project are to:

- Coordinate funding with existing grants to maximize the laboratory's analysis capacity
- Provide continuing education and maintenance of critical equipment to compensate for the laboratory's current budget gap
- Increase casework capacity and reduce turnaround time by purchasing a 3500 Genetic Analyzer
- Pay overtime and provide supplies for processing 50 backlogged cases
- Purchase updated and additional equipment for use in the new crime laboratory facility
- Coordination of all resources is essential for the current and future success of Forensic DNA operations at the Monroe County Public Safety Laboratory. By implementing state of the art technology and increasing the capabilities of the staff through training, the laboratory will continue to work towards elimination of the backlog and reduction of casework turnaround time.



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**FY 2010 Recipient Name:** County of Erie, New York

**Award Number:** 2010-DN-BX-K109

**Award Amount:** \$526,201

**Abstract:** The Erie County Central Police Services Forensic Laboratory performs forensic DNA analysis for the law enforcement agencies of Erie County, New York (population 900,000). Additionally, we provide forensic DNA analysis for all of Niagara County and Orleans County (total population 270,000) and occasional forensic DNA analysis for law enforcement agencies from 3 neighboring counties. We currently have 8 full-time DNA analysts (includes a section supervisor) and one part-time DNA analyst with 2 open full time DNA analyst positions and one open part time DNA analyst position. With the success of CODIS, casework requests have been steadily increasing, especially in the area of forcible sexual assault, burglary, weapons possession, robbery and assault. Additionally, we are experiencing an increase in the number of items submitted for each case and more requests for DNA analysis on evidence associated with homicides. This has resulted in a significant backlog and a need to decrease the turn-around time. In order to further increase the analytical capabilities of this lab, it is necessary to hire one additional DNA Analyst and to also perform a portion of the lab work using overtime. It is anticipated that the additional DNA Analyst and the additional overtime spent on casework will result in a decrease in the turn-around time and a decrease in the number of backlogged cases, since the analysts will be able to process more cases in a shorter period of time. The long term goal is to analyze the current backlog of cases and to then provide a 30 day turn-around time for new cases. The funding from this grant (\$526,201) will result in the completion of 526 additional cases using overtime to provide additional analytical time. Laptops (x2) will be purchased to setup work and office areas for the new DNA analysts. Additionally, a portion of the funding will be used to purchase the supplies necessary to analyze the 526 additional cases and to train the new DNA Analysts.

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**FY 2010 Recipient Name:** New York State Police, New York

**Award Number:** 2010-DN-BX-K096

**Award Amount:** \$982,414

**Abstract:** The New York State Police Forensic Investigation Center (NYSP FIC) is continuing to implement a program intended to enhance the productivity of its Biological Science Section (Section) in order to meet increased law enforcement demand for genetic identity analysis. The Section, with support provided by the National Institute of Justice through its Forensic DNA Capacity Enhancement and Backlog Reduction Programs, has undertaken to eliminate its DNA casework backlog while, at the same time, attaining a 30-day turn-around for all case types. The goals of backlog elimination and attaining a 30-day turn-around have already been met by NY State's convicted offender DNA database.

The productivity enhancement program includes the same objectives as the Fiscal Year (FY) 2010 Forensic DNA Backlog Reduction Program grant including: 1) Reduction in the average time required to complete forensic DNA sample analysis, 2) Increased throughput as measured by the number of DNA samples analyzed per analyst, and 3) Elimination of the forensic DNA casework backlog. Current grant funds are requested to provide increased DNA analyst efficiency through a variety of measures including upgraded support for the Sections automation facility. This support includes 1) Acquisition of a new liquid handling system that features increased throughput plus anti-contamination measures and 2) Upgrade of our current capillary electrophoresis instruments and associated software to achieve further throughput enhancement.

Since enhanced throughput will lead to increases in the production of both analytical data and quality control demands, the current grant also requests funding for a consultant to support software upgrades to enhance the functionality of our laboratory information management system (LIMS). The extensive LIMS upgrades will feature interfaces to existing evidence imaging systems and document control databases as well as an integrated quality control module. To help control growth in the number of pending cases while the enhancement program is implemented, support has been requested for forensic DNA analysis of pending property crimes by a commercial forensic DNA testing laboratory and, also, to provide overtime for in-house screening, handling and/or DNA analysis of forensic casework. Additional funding is also requested for training and continuing education of the Section's DNA Analysts which will include exposure to new technologies that may promise further increases in the efficiency and productivity of the Biological Science Section.

At the end of the project period, the specific target outcomes of the program described herein are to include 1) Substantial reduction (60 percent) of the forensic DNA casework backlog at the New York State Police Forensic Investigation Center, 2) Demonstrable (50 percent) increase, per case and per item, in the average productivity of Forensic DNA Analysts, and 3) Corresponding (approximately 50 per cent) decrease in casework turn-around times as measured from submission date to delivery of DNA test reports.

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**FY 2010 Recipient Name:** Onondaga County Health Department, New York

**Award Number:** 2010-DN-BX-K047

**Award Amount:** \$152,935

**Abstract:** The Onondaga County Center for Forensic Sciences – Forensic Laboratories will utilize funds from the 2010 DNA Backlog Reduction Grant to obtain additional analytical tools and supplies in addition to overtime hours to reduce the current backlog and decrease the turn-around time for DNA cases. In particular, the laboratory will purchase new computer hardware and software to enable the section's transition to CODIS 7.0. Overtime hours will provide the

staff with more available bench time to perform analysis on backlogged DNA cases. The laboratory will also use grant funds to provide discipline specific continuing education, ensuring that the staff remains up-to-date on new technologies. Additionally, supplies will be purchased that are necessary for the validation of a new quantitation kit allowing the laboratory to screen samples for male DNA. Supplemental funding is requested for expenses directly related to accreditation including proficiency tests and pipette calibrations. Overall, the award will enable the laboratory to successfully implement the proposed improvement plan, reducing turn-around time and the number of backlogged cases, further enhancing the services offered to the criminal justice community of New York State.

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**FY 2010 Recipient Name:** Nassau County, New York

**Award Number:** 2010-DN-BX-K049

**Award Amount:** \$225,515

**Abstract:** The objective of the proposed National Institute of Justice Forensic DNA Backlog Reduction Program for FY2010 is to reduce the overall turnaround time for the handling, screening, and analysis of forensic DNA samples, and to improve laboratory throughput in an effort to prevent future DNA forensic casework backlogs within the County of Nassau. Reduction in analysis turn-around will be achieved by conversion of the laboratory workflow from single reaction tube preparations to 96-well format facilitated by the purchase of biological fume hoods to support sterile work environments for 96-well automation. The objective is to convert the remaining manual sample preparation steps to fully automated robotic preparations. This includes the replacement of the current manual organic extraction procedure utilized for the extraction of property crime related specimens with the automated QIAGEN EZ1 Advanced XL robotic system. In addition, in order to maintain the current capacity to analyze property crime related evidence, reagent kits and consumable have been requested to support the analysis and CODIS profile entry. This is the laboratory's most crucial objective since 56.3% of profiles entered in the first quarter of 2010 and 86.5% of database hits recorded were attributed to property crimes. Funds specific to personnel and fringe have also been requested to maintain three grant funded scientists that are integral to the daily operation of the laboratory. Without support from the 2010 Backlog Reduction Program one of these scientist will have to be terminated due to a 10% reduction in New York State aid in FY2010. Loss of a single scientist from the current operational structure would have adverse affects of the laboratory's capacity and case turn-around time. The methods proposed for this project will be measured by the expected decrease in case turnaround time and increase in the number of CODIS eligible profiles entered into the database. Metrics will be generated by the Laboratory Information Management System report function.

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**FY 2010 Recipient Name:** City of New York, Office of Chief Medical Examiner

**Award Number:** 2010-DN-BX-K058

**Award Amount:** \$1,000,000

**Abstract:** Program goals and objectives: The Department of Forensic Biology has lost a significant part of its operating budget to New York City budget cuts. The Department will use funding under this project to maintain its current capacity and continue to provide forensic DNA testing on all crime types for the City. With the support of recent efficiency improvements and funding under previous backlog reduction programs, the Department remains committed to reducing case turn around time and eliminating a backlog of casework.

Project plan and methods for achieving goals: The Department of Forensic Biology plans to use funds to supplement the supply and human resources budget, and in the investment of continuing education by funding conference travel. The Department plans to use funds to hire two entry level criminalists to enhance the laboratory's capacity in the critical stages of evidence examination and bench testing. The Department also plans to use funds to hire a Clerical Associate who will assist with the backlog in the administrative case review and other quality assurance related tasks. Overtime will be used to fund the weekend shift and increase staff hours available for the biological screening and DNA analysis of evidence. Together these measures will help reducing the Department's backlog of cases waiting to be examined and in progress for more than 30 days. The Department will use additional funds to purchase essential DNA extraction and typing reagents, as well as additional parts for the post-PCR sample set-up robot. Both measures will help maintain capacity and increase throughput. Forensic Biology is also planning to invest in updating its CODIS capabilities. With an upgrade to CODIS 7.0, the Department will have a single platform ability to upload both evidence in criminal cases and samples in missing persons' cases.

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**FY 2010 Recipient Name:** City of Columbus, Ohio

**Award Number:** 2010-DN-BX-K056

**Award Amount:** \$149,688

**Abstract:** Columbus Police Crime Laboratory DNA Backlog Reduction Project 2010 seeks to enact improvements that will enable the crime laboratory to process DNA samples efficiently and effectively thereby reducing the backlog of DNA cases awaiting analysis. These improvements are critical to help the criminal justice system realize the full potential of DNA technology. Program objectives include the analysis of backlogged casework. Supplies will be purchased and overtime provided to existing analysts to perform analysis on backlogged casework. Finally, training will be provided to current and new DNA analysts so that they can keep abreast with new technologies.

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**FY 2010 Recipient Name:** City of Mansfield, Ohio

**Award Number:** 2010-DN-BX-K046

**Award Amount:** \$305,000

**Abstract:** Project Goals & Objectives:

1. To maintain low turnaround times for Mansfield cases and reduce DNA sample turnaround time for Columbus Division of Police cases.
2. To increase the number of cases and samples currently being analyzed.
3. To reduce the forensic casework backlog of the Columbus Division of Police.
4. To upgrade the laboratory LIMS system by installing additional permanent and portable workstations in the renovated DNA section of the laboratory
5. To complete renovations of the DNA laboratory initiated with 2009 funding.

**Project Plan:** The Laboratory will utilize grant award funding to pay the expenses associated with a DNA analyst, DNA technician, analyst overtime, and supplies associated with backlog cases. Equipment will be purchased for LIMS expansion and the completed renovations will expand efficiency of current DNA laboratory facilities.

**Methods for Achieving Goals:** The Mansfield Division of Police Laboratory currently accepts backlog case work samples from surrounding agencies. The Laboratory will maintain this service with the Columbus Division of Police in an effort to reduce their current casework backlog.

Analysis and technical review of the Columbus cases will be completed by the staff of the Mansfield Police Laboratory to insure CODIS submission with minimal delay.

The laboratory will continue to increase the number of cases and samples currently being analyzed by soliciting cases from surrounding agencies. The laboratory will complete renovation of vacated jail space adjacent to the DNA laboratory for the examination of DNA case submissions.

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**FY 2010 Recipient Name:** Cuyahoga County Coroner's Office, Ohio

**Award Number:** 2010-DN-BX-K073

**Award Amount:** \$105,000

**Abstract:** The project proposed by the Cuyahoga County Coroner's Office (CCCO) builds upon DNA Backlog grant initiatives from years past. Prior years funding was spent on enhancing the technology in the laboratory. The DNA department of the laboratory was able to achieve increased throughput while decreasing the turnaround time for cases. The continued goals are to reduce forensic DNA sample turnaround time, increase the throughput of the public DNA laboratory, reduce the DNA forensic casework backlog, and increase CODIS hits attributable to forensic casework. In order to achieve these goals, the Cuyahoga County Coroner's Office would like to hire two additional contracted laboratory technicians. It is anticipated during the time period of October 1, 2010 through March 31, 2012, the laboratory is expected to reduce

turnaround time for DNA backlog cases by 20% and increase the analyst throughput capacity by 33% with the help of the additional laboratory technicians.

The two additional laboratory technicians will be contracted employees hired to perform the preparatory work for the analysts. The technicians will be obtained by following all required procurement processes to hire professional services contracted employees. It is the belief that the additional staff will continue to reduce the backlog assuming that there is not a dramatic increase in new casework. Even if the number of DNA backlog cases increase, the additional staff will result in increased throughput levels for processing casework. All casework will be tracked by the laboratory staff laboratory information management system for all samples and casework tracking. There will be monthly meetings within the DNA department to review casework numbers. In addition, all information collected for performance measurement purposes will be obtained at quarterly meetings held with DNA supervisory staff as well as the Grant Administrator.

Overall the two additional laboratory technicians will contribute to increased productivity levels for the DNA department at the Cuyahoga County Coroner's Office.

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**FY 2010 Recipient Name:** State of Ohio Office of The Attorney General

**Award Number:** 2010-DN-BX-K111

**Award Amount:** \$831,053

**Abstract:** The Laboratory Division of the Ohio Attorney General's Bureau of Criminal Identification and Investigation processes DNA evidence for all 88 Ohio counties including seven counties with existing crime laboratories. In conjunction with NIJ's FY 2010 Forensic DNA Backlog Reduction Goal, BCI&I will reduce forensic DNA sample turnaround time, increase the throughput of its DNA laboratories, and reduce its DNA forensic casework backlog. To accomplish the stated goal above, BCI&I will achieve the following objectives:

Objective 1: By the end of the project period, BCI&I will reduce its DNA sample turnaround time to 60 days by increasing its forensic DNA capacity and testing the majority of casework samples in-house.

Objective 2: By the end of the project period, BCI&I will increase its forensic DNA casework capacity through the purchase and validation of two Tecan Freedom Evo® 150 robotic platforms, two Tecan Evo® 75 platforms, and one GeneAmp® PCR system.

Objective 3: Throughout the project period, BCI&I will limit outsourcing of DNA casework to the following three instances: (1) controlling turnaround time, (2) cases requiring specialized

technology, and (3) to comply with court directives that require a neutral third party laboratory. BCI&I will process forensic DNA casework in-house for all other instances.

With the purchase of the additional Tecan Freedom® Evo robotic platforms, corresponding validations, thermocycler, and BCI&I's limited outsourcing plan, the bureau will be well-positioned to process the current and foreseeable caseload of property crime, sexual assault, and known reference samples, while reducing an existing backlog. The additional automation capacity will allow for an increase in throughput to better serve Ohio's law enforcement agencies.

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**FY 2010 Recipient Name:** Montgomery County, Ohio

**Award Number:** 2010-DN-BX-K085

**Award Amount:** \$249,688

**Abstract:** The Miami Valley Regional Crime Laboratory makes this grant application for the purpose of decreasing the turn-around-time for case processing and to increase the number of samples that can be processed each month. The goal of this project is to decrease the turn-around-time on DNA cases by 20%. This would allow us to provide DNA results on most cases within 38 days. A second goal is to increase the number of samples processed by 20%. This would be accomplished with the requested funding of capacity enhancement. At the end of the grant period, we anticipate the number of samples that an analyst can process each month to be 30.

Specifically, these goals will be met by utilizing grant funds for overtime to work cases above the normal caseload; process mapping to streamline and provide efficiency to the procedures and protocols; preventative maintenance contracts will ensure that required instrumentation is functioning optimally; and the RFID system will allow for a more efficient movement of evidence throughout the laboratory. All aspects will be implemented early in the award period to allow for the greatest affect on the stated goals.

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**FY 2010 Recipient Name:** Stark County, Ohio

**Award Number:** 2010-DN-BX-K075

**Award Amount:** \$106,400

**Abstract:** The goals and objectives of the DNA backlog reduction project at the Canton-Stark County Crime Laboratory are as follows: (1) Reduce the number of backlogged cases awaiting biological screening and/or DNA typing (2) Reduce the overall turnaround time for evidence with a DNA request and (3) Increase the capacity and efficiency of examinations in the DNA evidence workflow. The Laboratory will use grant funding to purchase photodocumentation hardware, digital asset management software and a second thermal cycler in order to enhance efficiency, increase capacity and address bottlenecks in DNA analysis. Photodocumentation

hardware and digital asset management software will enable more efficient electronic documentation and annotation of evidence items in preparation of samples for DNA typing. This more electronic documentation method will reduce the amount of analyst time spent preparing samples for DNA by decreasing the manual note taking and paper handling currently required. A second thermal cycler will increase the flexibility in the DNA section by alleviating a bottleneck caused by the scheduling and capacity limitations of the single instrument currently in use by the laboratory.

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**FY 2010 Recipient Name:** Hamilton County, Ohio

**Award Number:** 2010-DN-BX-K062

**Award Amount:** \$105,000

**Abstract:** The primary objectives of this project are:

1. To reduce the backlog by 32 old cases. Because of the continuing impact of the economic recession in this region, public funding continues at drastically reduced levels. Grant funds will insure supplies are available to process backlogged cases. The laboratory will process these cases in-house using existing procedures and recently upgraded equipment.
  2. To reduce the turnaround time by at least 5%. Even though the turnaround time continues to increase, the laboratory is taking steps to improve its efficiency and effectiveness. Feedback to submitting officers will help eliminate the submission of items with a low probability of producing CODIS eligible DNA profiles.
  3. To complete implementation of automated systems purchased as a result of previous grant funded projects. At the completion of validation, analysts will fully integrate them into the workflow of the laboratory. This will contribute to improving the turnaround time.
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**FY 2010 Recipient Name:** Oklahoma State Bureau of Investigation

**Award Number:** 2010-DN-BX-K051

**Award Amount:** \$571,115

**Abstract:** The OSBI seeks to improve casework productivity by approximately 20% while decreasing the overall turnaround time and increase the capacity for offender DNA sample processing to allow for database expansion. The increase in casework productivity and capacity for offender DNA sample processing will be achieved by continuing to include technicians in the processing of certain steps. The increase in casework productivity and decrease in turnaround time will also be achieved using new instrumentation and equipment which will increase the amount of time analysts have available for casework, and decrease bottlenecks in the laboratory workflow. The OSBI also seeks to decrease the amount of time required for submittal of evidence to the laboratory by renovating the Tahlequah laboratory evidence intake area.



The OSBI requests \$269,101.84 for the purchase of laboratory equipment, software and supplies that will reduce sample-processing time and/or increase the number of samples processed at once. Laboratory equipment to be purchased under this application includes a crimescope, speckfinder digital microscope, crosslinker, document scanners and computers all for the Tahlequah laboratory. Additionally, this funding will be used to purchase DNA STR and Y-STR amplification and quantification kits which will be used in all DNA casework performed throughout the OSBI laboratory system. The software to be purchased is new software for the rPCR instruments. This software is specifically made for human identity and includes additional features such as normalization calculations that will speed analysis.

The OSBI also requests \$273,489.19 to extend four part-time technician positions and provide overtime funds for analysis of cases and training. This funding request includes both salary and benefits for 18 months.

Finally, the OSBI requests \$28,523.97 to perform renovations on the Tahlequah regional laboratory. These renovations include a complete remodel of the evidence intake area. This remodel will allow for multiple submissions of evidence to occur at one time. This increase in intake areas from one to two will decrease the amount of time it takes for the evidence to actually reach the biologists thereby reducing the overall turnaround time.

The renovations on the Tahlequah regional laboratory will decrease the amount of time needed to submit evidence and to have the evidence available to process. The technician positions will be used to aid in the handling, screening, and analysis of forensic biology evidence and processing of offender samples. The laboratory equipment will be used to aid in the elimination of current bottlenecks in forensic DNA case analysis and better utilize analysts' time when processing these samples. All of these improvements together will help analysts reduce the forensic biology backlog and work towards decreasing the average turn-around time to 30 days.

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**FY 2010 Recipient Name:** City Of Tulsa, Oklahoma

**Award Number:** 2010-DN-BX-K079

**Award Amount:** \$317,089

**Abstract:** Project Goals and Objectives: The goal of the Forensic Casework Capacity Enhancement Program is to improve the collection, dissemination and presentation of laboratory information in a standardized and compliant report format, to optimize the use of a Laboratory Information Management System (LIMS) and computer tablets to improve the efficiency of the laboratory and improve case backlog, and to use the LIMS to ensure compliance with International laboratory accreditation requirements of ASCLD/LAB.

The objectives of the Forensic Casework Capacity Enhancement Program are to acquire and install a Laboratory Information Management System and computer tablets and have it operational within 18 months of award, to improve efficiency and decrease the case backlog by 10% the first year of operation and use the data that is produced, compiled and / or stored by the LIMS system in annual Quality Management audits of the laboratory.

**Project Plans:** The Biology Section Technical Leader of the Tulsa Police Department Forensic Laboratory, in conjunction with Senior Management, will be responsible for coordinating the implementation and training of the Laboratory Information Management System and purchasing computer tablets for case working analysts.

**Methods for Achieving the Goals:** To implement this program, a Laboratory Information Management System and computer tablets for case working analysts are necessary. A LIMS system will be purchased, staff will be trained to system requirements and install software and associated hardware on existing laboratory computers and the new computer tablets. Training workshops will be provided for staff to acclimate them to the LIMS. Data will be converted from the existing information management system and the system configuration will be refined as needed. The DNA Technical Leader and Senior Management will be trained to extract quality data from the LIMS, incorporate data into annual quality reports and assess laboratory efficiency in regular reports to the Laboratory Director.

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**FY 2010 Recipient Name:** Oregon State Police

**Award Number:** 2010-DN-BX-K161

**Award Amount:** \$451,278

**Abstract:** Project Scope and Objectives: The scope of this proposal is three fold: 1) to initiate and increase capacity of DNA database sample processing in-house, 2) to enhance the capacity of DNA casework screening, processing and analysis and 3) to reduce the DNA casework backlog. The objectives are: 1) to streamline the work flow of convicted offender sample analysis and increase capacity of DNA casework analysis through equipment purchases and upgrades, and the implementation of new methods, 2) to provide overtime and supplies for the screening, processing and analysis of backlogged DNA cases and the validation of new methods, and 3) to provide training and continuing education opportunities to analysts to either assist with obtaining competency or maintaining proficiency.

**Project Design and Methodology:** In 2008, we initiated a renovation project to provide dedicated laboratory space for the processing and analysis of CODIS database samples. The anticipated completion date of this renovation is June 2010. Thus, beginning July 2010, we will have capacity, (i.e., dedicated space, equipment and personnel resources) to reinstate CODIS sample processing and analysis in-house. For objective 1, funds will be used to augment the current

infrastructure of the CODIS unit to streamline the work flow and increase the capacity of convicted offender sample processing, analysis and review. Specifically, we will purchase an additional genetic analyzer, upgrade the CODIS database server, purchase three client computers, and validate the AmpF $\ell$ STR $\text{\textcircled{R}}$  Identifiler $\text{\textcircled{R}}$  Direct PCR Amplification Kit. In addition, we will purchase supplies for the convicted offender collection kits. To increase capacity of DNA casework analysis we will upgrade an extraction robot, and validate several new methods (e.g., use of RNA in extraction process, DNase digest, Y-STR). The carrier RNA and DNase methods will improve the DNA extraction process to provide unambiguous or more definitive profiles. This will subsequently assist with profile interpretation and may prevent the need to repeat analyses. Y-STR will provide an additional service to our customers and will allow for the full interpretation of a profile to be included in one report. This will provide our customers with results in a more timely fashion.

For objective 2, grant funds will provide overtime for approximately seven DNA analysts to process and analyze backlogged DNA cases and perform the validation studies. The majority of the backlogged samples are no suspect(s), property crime cases. Profiles from these cases will be entered into CODIS and subsequent hits will be reported to the police agency to aid in their investigation. The overtime will help minimize our DNA backlog.

Lastly, for objective 3, analysts will participate in various in-state and out-of-state training opportunities to fulfill training requirements for competency or to maintain proficiency. We anticipate hiring two additional DNA forensic scientists within the next six months. Training for these new hires may include courses in population genetics and general DNA techniques. This will assist these new hires to meet the requirements of their training and obtain competency. Current DNA analysts will attend various professional conferences (e.g., NWAFFS, AAFFS, or the International Symposium on Human Identification) to maintain their proficiency and keep current with new technologies.

Support of this proposal will provide training opportunities, and provide support for overtime, equipment and supplies all of which will result in increased capacity and efficiency of evidence screening and analysis of both DNA casework and CODIS database samples. Meeting the objectives will result in maintaining a proficient, confident workforce, will provide enhanced infrastructure for more efficient workflow for CODIS sample processing and analysis, and provide resources (equipment, personnel time, new methodologies & supplies) to increase the efficiency of evidence screening and processing. The subsequent expected outcomes will be a decrease in the DNA backlog and more timely quality service to our customers (i.e., decrease in turn-around time).

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**FY 2010 Recipient Name:** Allegheny County Forensic Lab Division, Pennsylvania

**Award Number:** 2010-DN-BX-K065

**Award Amount:** \$283,541

**Abstract:** In recent years, the Forensic Biology section of the Allegheny County Office of the Medical Examiner Forensic Laboratory (ACOME FL) has committed significant time and resources into developing and implementing an advanced DNA processing plan to reduce the number of backlogged cases and increase throughput. Having already acquired several state-of-the-art robotics and information technology systems, ACOME FL now seeks to adapt their DNA processing design to the changing and growing demands placed upon Forensic DNA analysis. Through the proposed program, the laboratory will expand upon its current DNA processing plan to better analyze lower level DNA samples, while continuing to enhance capacity to reduce its backlog and turnaround time.

Funding from the proposed program will be used to acquire and validate an advanced extraction robotics system, acquire and validate superior DNA processing chemistries, upgrade and customize current information technology systems, and enhance the capacity of the Forensic Biology section. Funding will also provide training for analysts on the customized information technology systems, and overtime for analysts to perform validation and backlogged casework without interrupting daily laboratory operations. ACOME FL projects a budget of \$283,541 and an estimated timetable of 18 months (October 1, 2010 to March 31, 2012) for successful completion of the proposed program.

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**FY 2010 Recipient Name:** Pennsylvania State Police

**Award Number:** 2010-DN-BX-K053

**Award Amount:** \$1,110,575

**Abstract:** Project Goals and Objectives: This proposal will provide funding to enable the Pennsylvania State Police Bureau of Forensic Services reduce the number of DNA backlog cases. Funds are requested to replace and upgrade existing equipment, and supplies to continue to streamline techniques to maximize throughput in the analysis of casework samples. The overtime is for personnel in the DNA laboratory to validate new instruments and DNA analysis testing kits. Funds are also being sought to have outside vendors provide technical assistance with the validation work in order to implement these newer techniques more quickly.

**FY 2010 Recipient Name:** City of Philadelphia, Pennsylvania

**Award Number:** 2010-DN-BX-K114

**Award Amount:** \$968,799

**Abstract:** Project Goals and Objectives: The Philadelphia Police Department Criminalistics Unit is requesting a total of \$968,799.00 in funding.

- \$440,000 is requested to outsource backlogged cases and reduce the current backlog of approximately 916 cases (4582 Property Receipts) awaiting processing for pre-screening for biological material and DNA analysis. The backlog is expected to remain approximately the same by September 30, 2010. Cost per case is estimated to be \$2200 for screening and DNA analysis based on prior outsourcing contracts. The outsourcing contract will be established by a free and open competitive bidding process. This funding will allow for the outsourcing of 200 sexual assault cases for biological evidence pre-screening and DNA analysis. After pre-screening for biological material and DNA analysis by a contracted laboratory, the Philadelphia Police Department Criminalistics Laboratory and DNA Identification Laboratory will technically review the results and effect inclusion into CODIS. It is estimated that from the 200 cases, 100 cases will contain sufficient biological material for DNA analysis. With this grant the Philadelphia Police Department has the potential to solve a substantial amount of Violent Crimes. The outsourcing of these cases for pre-screening and DNA analysis will not only save a great deal of time for forensic scientists and investigators but will safeguard the population of the city by increasing the chances of the apprehension of sexual predators, those committing murder and/or other violent crimes.

Approximately 25 cases per month will be sent to a contracted laboratory for Pre-Screening and DNA analysis. Once cases are analyzed and returned, member(s) of the Criminalistics Unit will technically review the results and enter any qualified profiles into the CODIS Database to be uploaded to the State DNA Index System (SDIS) and National DNA Index System (NDIS). All DNA profiles obtained will be maintained in accordance with federal privacy regulations. Once the DNA Laboratory completes the CODIS entry, results will be forwarded to the appropriate District Attorney's, and/or investigative unit. The advantages and benefits to outsourcing these cases are faster access to the forensic DNA profiles, rapid identification of Perpetrators, ability to identify any patterns and the time savings for the Philadelphia Police Laboratory staff.

- \$241,223 is requested for overtime for the Criminalistics Unit staff to screen backlogged cases for biological material suitable for DNA analysis, conduct DNA analysis and enter any obtained qualifying profiles into CODIS: It is expected that 416 backlogged cases will be analyzed in-house during the grant period.
- \$65,097 is requested to purchase the following equipment.
  - Crime Lite Crimescope is needed for the identification of physiological fluids on evidence. This mobile alternate light source allows for the detection of various

fluids on clothing using a light source and various filters to distinguish fluids from various backgrounds.

- Nikon High Pixel Camera for the documentation of blood splatters, tissues deposits, minute stains. The camera is quoted with 200mm f/4D lens, 10.5 mm f/2.8 wide angle lens, wireless close-up speed light, carrying case, tripod and right angle viewfinder.
- Nikon Cool Pix Cameras (2) for the individual documentation of body fluid stains on macroscopic evidence.
- Personal Computers (11) are requested for the six additional hires for CODIS and police department network and to replace the incompatible computers for the new microscope sperm identification system. The computers are quoted with operating systems and associated Microsoft software.
- Office Copier - The Philadelphia Police Laboratory DNA Laboratory is unable to replace the current copier due to budget problems. They have been unsuccessful for years. The manufacturer can no longer repair the copier. This copier is used for duplication of reports, lengthy discovery motions, accreditation materials, laboratory forms, QC documentation forms, enlargements of evidence drawings, pictures for court presentations; and training lecture materials. The lack of a copier results in excessive time spent to travel several floors to make duplications/copies.
- \$129,438 is requested for DNA supplies to analyze the current backlogged cases. The supplies are for reagents for the DNA extraction, amplification, quantification and detection stages of the analytical process. It is expected that 416 backlogged cases will be analyzed in-house during the grant period.
- \$22,428 is requested to contract with C.S. Tomsey Forensic Consulting to conduct on-site and off-site peer reviews of the department's DNA, Serology and Criminalistics sections. To assess the adequacy of this unit's staffing, equipment and physical plant. Additional duties of the consultant will include the review of Serological and DNA Training and Standard Operating Procedures for completeness and efficiency with proposing suggestions to improve and streamline operations.
- \$2930 is requested to hire a population geneticist/statistician to provide training and lectures to the DNA staff on the statistical interpretation of evidence results with emphasis on mixtures and YSTR's. Due to the increasing number of analysts, it is impossible to send all of them to outside DNA training to meet the required 8 hours of annual training. It has been cost effective to contract a forensic expert to provide this training.
- \$11600 is requested to hire Crime Lab Design-Hera architects to redesign the analytical and office areas to better utilize the available space and promote more efficiency in the analytical process. This company was the original architect firm

that designed this laboratory. Due to the increase in staffing and the changes in technical methods the laboratory has outgrown the spaces provided. The individual rooms can be better designed to meet current needs. This FIRM will assist in determining design changes and the associated remodeling costs.

- \$11138 is requested to send two forensic scientists to the Mid Atlantic Association of Forensic Scientists, Promega International and AAFS annual 2011 Meetings. These meetings are the premier meetings for forensic DNA technology. Attendance at these meeting informs the laboratory about technological advances, analytical modifications to enhance DNA results, interpretation issues, statistics, courtroom presentation and trouble shooting.
- \$47,335 is requested for “Other Costs”. Items included are registration fees for two DNA analysts to attend the Promega Symposium and Promega Workshops. Registration fees for two DNA analysts to attend the MAAFS and AAFS Meetings. Various small items such as Magnifying Glasses, Centrifuges, Thermoblocks, Thermo mixers. Stream and 8 channel Pipettes and charging stands. These additional items are requested to streamline the analytical process and accommodate additional employees.

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**FY 2010 Recipient Name:** Instituto de Ciencias Forenses, Puerto Rico

**Award Number:** 2010-DN-BX-K069

**Award Amount:** \$439,101

**Abstract:** The proposed goal of this effort is to continue reducing turnaround time, increasing throughput, reducing casework backlog and fostering conformance to quality assurance standards for processes and personnel. This goal will be achieved via the execution of a series of measures/objectives which will impact various aspects of the operation. One of these intends to decrease the projected backlog for September 30, 2010 (i.e., 3,100). The present effort intends to retain three (3) forensic serologists currently hired with federal funds and hire two (2) new forensic technicians who will be trained in-house as screeners by a duly NIJ-approved entity. This training will be scheduled only after the technicians have taken an on-line theoretical course by DNA.gov at no cost. Federal funds will also be used to pay for overtime work of five in-house analysts. Front end activities to be carried out will include 1) identification, 2) handling, 3) inventorying and 4) registering of the demographic information for each of the cases to be analyzed via the Laboratory Management and Information System (LIMS), and once the analyses are completed, entrance of the pertinent case information into the File-Maker-Pro Database. The use of these tools will prevent double counting of cases that are being paid with federal funds. Funds will be used to acquire one freezer/millier, one alternate light source (ALS), and one (1) under-the-counter freezer to store reagents. Lastly, funds will be used for contracting a CODIS consultant now that our DNA-Serology Lab has taken concrete steps and within the

next few months will be actively uploading genetic profiles into CODIS and NDIS, thus becoming an active NDIS Participant. The LIMS DNA Data Module budgeted last year was not acquired; instead, beginning in October 1st, 2010, a highly qualified LIMS Star professional with forensic experience will be hired full time with Paul Coverdell funds to optimize our Star-LIMS-9.383- version-platform to obtain invaluable new information. Lastly, funds will be used for acquisition of supplies with which to carry out the proposed backlog-reduction and validation efforts. All single-source genetic profiles thus obtained that meet Acceptance Standards will be uploaded into the NDIS. The Procurement Process of instrumentation, equipment and services will be accomplished in conformance to applicable Federal and State laws of the Commonwealth of Puerto Rico. For this award, a minimum of 301 cases will be processed and the genetic profiles meeting Acceptance Standards transferred into CODIS and uploaded to NDIS.

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**FY 2010 Recipient Name:** Rhode Island Public Safety Grant Administration Office

**Award Number:** 2010-DN-BX-K125

**Award Amount:** \$150,000

**Abstract:** The Forensic Biology Laboratory at the Rhode Island Department of Health is the only Forensic DNA Laboratory in Rhode Island. The Laboratory is accredited under ISO 17025 Standards by Forensic Quality Services, and undergoes external audits every other year to demonstrate compliance with the DNA Quality Assurance Standards established by the Director of the Federal Bureau of Investigation. This Laboratory serves also as the state CODIS (SDIS) site. Casework is submitted by more than 40 state and municipal police departments and other law enforcement agencies.

The Laboratory's current backlog of active and/or CODIS-eligible cases is approximately 85 days. The goal of this proposal is to reduce the backlog of DNA cases by a) hiring one Forensic Scientist to process cases, b) ensure functional instrumentation with maintenance contracts, c) provide analysts with additional training d) provide analysts with individual workstations for DNA data review, e) desktop computers for data review, and f) contract with an outside vendor to assist with the validation of our 3130 Genetic Analyzer.

We believe that by hiring an additional analyst, and streamlining our processes, the overall efficiency of the unit will be improved, and thereby reducing the backlog. By the end of the grant period, we expect the turn around time will be reduced to roughly 30 days, assuming no changes in staff or workload.

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**FY 2010 Recipient Name:** County of Richland, South Carolina

**Award Number:** 2010-DN-BX-K074

**Award Amount:** \$113,950

**Abstract:** The Richland County Sheriff's Department is currently seeking funds to enhance its



capacity for DNA analysis through the DNA Backlog Reduction Program Formula Grant FY 2010. With the implementation of this grant, the following goals will be achieved; reduction of backlogged DNA cases and increase laboratory capacity with the objective of an overall reduction in violent and nonviolent crimes in Richland County through a continuation of current analyst throughput (~100 cases/month). Without the grant-funded re-employment of the full time analyst and the new full time technician, laboratory case throughput will be reduced by approximately 30 percent. The project plan/method is to utilize the grant-funded full time analyst and new full time technician along with the two county-funded full time DNA analysts and one county funded full time technician and existing laboratory infrastructure to coordinate and process DNA backlogged cases during the grant period.

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**FY 2010 Recipient Name:** South Carolina Law Enforcement Division

**Award Number:** 2010-DN-BX-K103

**Award Amount:** \$1,399,617

**Abstract:** Project Goals and Objectives - This application is for Federal assistance for the FY 2010 Forensic DNA Backlog Reduction Program (CFDA No. 16.741, FY2010). Funds are being sought to improve the analysis capacity through the purchase of equipment and increasing the staff of the SLED Forensic DNA Laboratory so that DNA samples can be processed more efficiently and cost-effectively.

Funds are also being sought to handle, screen, and/or analyze backlogged forensic DNA casework samples. Overtime salaries for DNA personnel, the addition of DNA personnel, and the outsourcing of backlogged cases to a qualifying fee-for-service laboratory will be used in accomplishing this task. The SLED DNA Laboratory is an NDIS participant laboratory in good standing and is eligible to upload appropriate profiles to NDIS. Therefore, the resulting evidence profiles from analysis of these cases will be entered and searched in the Combined DNA Index System (CODIS) to assist state and local agencies to ultimately solve crimes. The funds may also be used to conduct post conviction DNA testing pursuant to a court order. All DNA analyses performed at SLED using funds from this program will be maintained under the applicable federal privacy regulations.

Funds are being sought to provide required continuing education and training for DNA analysts. Exposure to technological advances presented in these trainings enhance our ability to implement new ideas and new DNA methods for increasing throughput.

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**FY 2010 Recipient Name:** South Dakota Office of the Attorney General

**Award Number:** 2010-DN-BX-K175

**Award Amount:** \$150,000

**Abstract:** The South Dakota Forensic Laboratory (SDFL) is the only public laboratory in South

Dakota capable of forensic DNA testing. With NIJ funding and authorization from the South Dakota Attorney General, the SDFL hired two additional employees to conduct serology screening. Both of the new employees have completed their serology training and one is anticipated to complete her DNA training in 2010. With previous NIJ funding, the SDFL DNA examiners have been able to: 1) maintain and support the additional personnel that have increased the output of completed cases; and 2) operate at a higher efficiency by not sharing/waiting for equipment. The South Dakota Forensic Laboratory has enjoyed a 30-90 day turnaround time on DNA cases for several years now. This has largely been accomplished through the utilization of NIJ funding. This funding will allow us to continue that turnaround time.

- Goal #1 – With NIJ funding, the SDFL will continue general casework capacity.
  - Objective #1 – purchase DNA supplies needed to analyze evidence for DNA and enter all eligible DNA profiles into CODIS.
  - Objective #2 – send 4 DNA examiners to continuing education training in Chicago, IL in 2011.
  - Objective #3 – replace existing computer hardware for RT-PCR quantitation, 310 Genetic Analyzers, as well as replace the CODIS server and workstation. All current hardware is at least 5 years old.
  - Objective #4 – purchase additional and replace existing old microcentrifuges to allow concurrent DNA purification by multiple personnel.
- Goal #2 – Continue purchasing DNA database collection kits for qualifying arrested felons and enter those profiles into CODIS.
  - Objective #1 – purchase DNA database collection kits so all arrested felony offenders' DNA can be submitted to CODIS per South Dakota state statute.

The BEAST LIMS system will adequately track progress on our proposed goals. Once the funding is received, the plan will be to begin expending those funds once our remaining funds from our previous FY08 and FY09 awards are expended.

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**FY 2010 Recipient Name:** Tennessee Bureau of Investigations

**Award Number:** 2010-DN-BX-K098

**Award Amount:** \$2,069,661

**Abstract:** During the fiscal year 2008-2009, the TBI's Serology/DNA labs conducted examinations on 2,040 cases consisting of 8,355 exhibits. Estimating through fiscal year 2009-2010, the TBI's Serology/DNA labs will have conducted examinations on 2,196 cases. This number does not include additional casework that had been held back by agencies in Nashville (450 cases) and Memphis (2,280 cases), which will bring the estimated number of cases received by the end of the fiscal year 2009-2010 to 4,845 cases. The number of exhibits and testing is

increasing due to all crime types increasing and an increase in property and epithelial “touch” DNA requests, but also to pressures on external agencies to deal with non-worked cases in their possession. While the addition of equipment, personnel and overtime over the last three to four years has helped increase throughput and decrease turnaround, a backlog still persists in all three labs and will have been increased by a substantial amount.

As a result of the downturn in the economy and budget cuts, the TBI removed all supply monies from the budget for the fiscal year 2009/2010. These monies have not been returned to the fiscal year 2010/2011 budget due to cuts and the supplies for the TBI’s Serology/DNA labs is currently being funded by grant funds. The grant funds for the 2010 DNA Backlog Grant will allow the TBI’s Serology/DNA labs to continue to purchase supplies in the face of additional budget cuts.

Grant funding will continue to be used to maintain our current instrumentation by way of maintenance contracts. Due to the ongoing difficulties in the current economy, the TBI has continued to eliminate all maintenance contracts on existing instrumentation to reduce the budget. As a result, when a genetic analyzer or other DNA instrument has technical issues, repair may not be possible and may be dependent on non-existing funds. Additionally, even when funds for repair are available, without maintenance contracts, the TBI will have to “wait in line” for service as other labs with maintenance contracts would be given priority. Grant funding will be used to maintain our current DNA instrumentation by way of maintenance contracts.

Grant Funding will be used to maintain our existing document control system purchased under our no-suspect grant. This system houses critical DNA/laboratory documents. Additionally, funding will be used to pay the maintenance fee for our video conference system also purchased under the no suspect grant. The system connects the three DNA laboratories across our state in Memphis, Nashville, and Knoxville. Training, in service, protocol reviews, quality assurance issues, and DNA audits are some of the uses in place for our 3 DNA laboratories.

Grant funding will also be used to allow existing scientists the ability to earn overtime pay for handling, screening and/or analyzing DNA samples to keep the increasing backlog under control. Additionally, with grant funds, the TBI will hire, on a temporary basis, contract employees who will aid in the screening of casework, primarily an additional 2700 cases being submitted by agencies from the cities of Nashville and Memphis. Concurrently, grant funding will be used to outsource DNA samples from cases that are screened positive and, subsequently, requested by the District Attorneys General offices pertaining to each case for DNA analysis.

Grant funding for equipment will be used to purchase two Drummond Pipet-Aid Filler/Dispenser units to replace aging units in the Nashville Laboratory. Four new Sony DSC-HX1 cameras, with bag and memory stick kits, will be purchased to replace non-functioning units and to outfit new scientists hired in the past two years. An additional Leica DM1000

microscope is to be purchased for a new scientist in the Knoxville Crime Laboratory for sperm slide searches as part of the screening of sexual assault casework. Two types of utility carts will be purchased for the Nashville Serology/DNA unit for use by the scientists for transporting large amounts of casework and/or large items of evidence. Two 310 Genetic Analyzers will be converted from Macintosh computers to PC and three 4-Port USB Printer Switches will allow for the sharing of color laser printers among the existing 310 and 3130 Genetic Analyzers for printing analyzed data. Also, grant funds will be used to purchase three CODIS servers, with software, and six CODIS workstations, with software, to replace aging computers at all three laboratories.

Finally, grant funds will be used to provide mandatory training for DNA analysts from all three DNA labs. The meetings attended will present additional information on the new chemistries and instrumentation and new casework approaches for DNA evidence. This training will consist of traveling to the 22nd Annual Human Identification Conference sponsored by the Promega Corporation, the Association of Forensic DNA Analysts and Administrators Meeting, the Bode Advanced DNA Technical Workshop, the American Academy of Forensic Sciences Meeting, the Green Mountain DNA Conference, the Southern Association of Forensic Scientists Conference and the Future Trends in Forensic DNA Technology Symposium sponsored by Applied Biosystems.

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**FY 2010 Recipient Name:** City of Austin, Texas

**Award Number:** 2010-DN-BX-K045

**Award Amount:** \$182,097

**Abstract:** The City of Austin is a home-rule municipality situated in Travis, Williamson, and Hays Counties of Texas. The City of Austin Police Department Crime Laboratory, managed by the Forensic Sciences Division, provides forensic and investigative services to over 772,085 persons residing within 296 square miles. In 2004, the city opened a state-of-the-art forensic facility and in 2005, received ASCLD/LAB Legacy Accreditation in the areas of biology, toxicology, controlled substances, firearms, latent print, and crime scene. The laboratory underwent successful external audits in July of 2007 and September of 2009 and just successfully completed the ASCLD/LAB Accreditation audit. With this application, the City of Austin requests \$182,097 in grant funding from the U.S. Department of Justice, Office of Justice Programs, National Institute of Justice FY 2010 Forensic DNA Backlog Reduction Program for a proposed project period of October 1, 2010 – March 31, 2012.

The goal of this program is to solve violent crimes citywide. To accomplish this goal, the program will focus on three primary objectives: to reduce forensic DNA sample turnaround time, to increase the throughput of the APD Crime Lab DNA Section, and to reduce DNA forensic casework backlogs. Program objectives are linked to essential services with measurable

outcomes. If funding is awarded, the program anticipates vast improvements in the APD Crime Lab DNA Section by purposing funds for overtime, contractual assistance, supplies, and training. The City of Austin requests grant funding in the amount of \$64,086 to allow existing laboratory employees to work on an overtime basis; \$58,500 to purchase essential supplies; \$50,411 to contract for the services of a lab technician; and, \$9,100 to send five laboratory employees to training.

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**FY 2010 Recipient Name:** University of North Texas Health Science Center

**Award Number:** 2010-DN-BX-K119

**Award Amount:** \$785,138

**Abstract:** The University of North Texas Center for Human Identification (UNTCHI) Laboratory for Molecular Identification, located on the UNT Health Science Center Campus in Fort Worth, maintains a full service forensic laboratory accredited under the requirements of ISO 17025 and the DNA National Standards for DNA Analysis by the Forensic Quality Services – International Division. The UNTCHI Laboratory provides STR (autosomal and Y) and mtDNA testing to law enforcement officials throughout the State of Texas.

UNTCHI has been responsible for screening and analyzing backlogged criminal forensic casework for the City of Fort Worth and other law enforcement agencies throughout the State of Texas. With funding provided through NIJ all of the testing is done at no charge. UNTCHI functions as an adjunct laboratory for the Texas Department of Public Safety Crime Laboratory (TXDPS) and provides the analysis of casework samples requiring mtDNA, Y STR analysis, MiniFiler™, and all cases requiring familial/kinship analysis.

The number of cases submitted to UNTCHI has more than doubled over the past three years (214 cases in FY 2006 to 431 cases in FY 2009) and the number of samples requiring both screening and DNA analysis at our facility has dramatically increased. Based upon the data for the first three months of FY2010, the number of days from submission to report is 120 days. However, cases are being completed in approximately 20 days from the time they are started. Each of our 4 analysts is completing on average 10 cases per month which corresponds to approximately 40 samples per analyst per month. Prior to the start of this award we anticipate a backlog of 90 cases on 9/30/10.

In collaboration with the TXDPS, UNTCHI is eligible for \$785,138.00 of the available funding allotted to the State of Texas. Funding provided through the FY 2010 Forensic DNA Backlog Reduction program will allow UNTCHI to hire four forensic analysts and a forensic technologist, purchase the necessary equipment, reagents and materials to process the backlogged forensic cases from the City of Fort Worth, and other law enforcement entities within Texas. With continued process improvements and efficient utilization of resources, it is anticipated that the

available funds will allow UNTCHI to screen and perform the DNA analysis on 800 forensic cases during the award period (10/1/2010 – 03/31/2012). The addition of an automated DNA extracted instrument should contribute to an overall reduction in turn around time from date of submission to report. All eligible forensic DNA profiles will be entered into CODIS in conjunction with the TXDPS and uploaded into NDIS where applicable.

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**FY 2010 Recipient Name:** Texas Department of Public Safety

**Award Number:** 2010-DN-BX-K043

**Award Amount:** \$2,401,320

**Abstract:** To reduce the number of forensic DNA cases awaiting analysis, the eight Texas Department of Public Safety Crime Laboratories will work as a team to engage its seventy-five Forensic DNA Scientists to work overtime examining evidence, developing DNA profiles, and then entering those forensic profiles into the CODIS DNA database.

In this grant application, funds are requested to pay overtime to DNA scientists, to employ four additional scientists, and to acquire supplies and kits to perform forensic DNA testing in house. The goal will be to complete the analysis of evidence on 1,500 forensic DNA cases. In conjunction with this work, DNA scientists will engage in some continuing education by attending DNA training workshops, to enhance their skills and improve efficiency.

A second part of this project will be to enhance the capacity of the eight DPS Crime Laboratories to examine forensic DNA cases, by acquiring new equipment and employing new technologies. Especially, the focus will be on further employing robots, acquired last year, for the extraction of DNA from forensic samples, for the addition of higher through-put genetic analyzers, and for employing expert DNA analysis software, acquired recently, to expedite the analysis of the DNA data. These equipment enhancements, coupled with the State of Texas' efforts to replace seven of the eight DNA crime laboratories with much larger facilities, should enable much greater achievements in forensic DNA testing.

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**FY 2010 Recipient Name:** Harris County, Texas

**Award Number:** 2010-DN-BX-K097

**Award Amount:** \$796,580

**Abstract:** The goal of this proposed project is to reduce our current backlog of over 500 DNA cases and to improve the Harris County Institute of Forensic Sciences (HCIFS) Biology laboratory in two major areas: speed of analysis and documentation. The implementation of this program will reduce the number of backlogged DNA cases and enhance the efficiency, capability, and capacity of the HCIFS Biology laboratory to improve the laboratory's ability to assist in criminal and death investigations.

The Harris County Institute of Forensic Sciences (HCIFS) Forensic Biology Laboratory will have a backlog of over 500 cases as of September 30, 2010. As a direct result of previous NIJ funding, our capacity to process cases has increased. With funds requested through this grant, we estimate we will be able to outsource 77 cases. We also estimate that we will be able to work 224 cases in-house by means of purchasing supplies. With outsourced cases and in-house cases combined, we estimate working 301 cases above and beyond the normal number of DNA cases we can analyze within the proposed grant period using other funding, leaving a backlog of approximately 200 cases. Cases that have been outsourced will be reviewed by HCIFS DNA analysts. To insure cases are reviewed within the 90-day requirement and that current workflow is not interrupted, DNA analysts will work overtime to analyze outsourced cases. Upon completion of the analysis of the backlogged cases, any new case submissions can be analyzed more promptly.

The goal of the proposed project is to decrease our current backlog of forensic cases awaiting DNA analyses and increase our capacity to analyze cases with the potential for DNA analysis. To increase our capacity we plan to hire contract personnel. To accelerate analysis, we plan to purchase a new ABI 3500XL Genetic Analyzer, a Tecan Freedom Evo 150, and supplies. With the purchase of new equipment and equipment upgrades, our laboratory will be able to increase our capacity and decrease our backlog. Funds from this award will also be used to send DNA Analyst to annual scientific meetings.

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**FY 2010 Recipient Name:** Tarrant County, Texas

**Award Number:** 2010-DN-BX-K052

**Award Amount:** \$280,892

**Abstract:** The Tarrant County Medical Examiner's Office is a regional medical examiner's facility located in Fort Worth, Texas that provides services to Tarrant, Parker, Denton, and Johnson Counties. These counties represent a core population of approximately 2.5 million citizens. The Medical Examiner's Office also operates a multi-discipline crime laboratory that offers Forensic Biology and DNA analysis. The Forensic Biology/DNA laboratory not only serves the Medical Examiner, District Attorney, and other Tarrant County agencies, but also provides analysis, on a fee for service basis, to law enforcement agencies throughout the four counties served, as well as many other agencies throughout North Central Texas and the rest of the United States. Cases are also accepted for court ordered DNA testing in post-conviction cases from the defense community. In 2009, a total of 84 agencies submitted requests to the Forensic Biology/DNA laboratory resulting in a total of 824 submissions for evidence screening and/or DNA analysis. The Tarrant County Medical Examiner's DNA Laboratory is accredited by ASCLD/LAB and is also an approved FBI CODIS laboratory, participating in the local, State, and National DNA Databases. Based on data reported to the Department of Public Safety Uniform Crime Reporting Bureau indicated that the percentage of the Texas UCR Part 1 Violent

Crimes represented by the core counties (Tarrant, Johnson, Denton, and Parker) was 4.568% in 2008.

The number of DNA samples analyzed at the Tarrant County Medical Examiner's DNA Laboratory is growing every year, which in turn is increasing the lab's number of backlogged cases. Several reasons for this include an increase in the number of cases requesting Y-STR analysis, the increased duties of analysts, and validation of instruments and procedures. The number of backlogged DNA cases increased from 55 cases in 2008 to 82 cases in 2009 and this number of backlogged cases will continue to rise unless new equipment and procedures are introduced in the laboratory.

In order to help reduce the backlog of cases, reduce the case turnaround time, and increase the number of DNA samples analyzed, the Tarrant County Medical Examiner's Crime Laboratory is requesting a grant of \$280,892. The grant funding would be used to purchase, install, and validate automation equipment that would greatly enhance the capabilities of the DNA lab. The Qiagen EZ1 XL Advanced Instruments in conjunction with the Qiagen QIAgility will decrease the hands-on time in the lab through automation allowing the analysts to spend more time dealing with other bottlenecks in the lab such as report writing and technical reviewing of case files. The potential for human error will also be decreased with the introduction of automation. Services for the QIAgility would include ensuring that the instrument was correctly calibrated with NIST-traceable standards as well as having protocols customized to our needs to expedite proper validation. Installation of a LIMS for document management would ensure quality assurance throughout the Criminalistics Laboratory. The funding would allow for the supplies needed for the validation of all instruments obtained and allow for the Forensic Biologists at the Tarrant County Medical Examiner's Office to obtain the continuing education hours that are required and the needed training to get all equipment and processes online in casework.

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**FY 2010 Recipient Name:** County of Bexar, Texas

**Award Number:** 2010-DN-BX-K048

**Award Amount:** \$127,119

**Abstract:** As part of our ongoing effort to advance the workload capacity and reduce the backlog of pending forensic Serology/DNA casework at the Bexar County Criminal Investigation Laboratory (BCCIL), an ASCLD/LAB accredited laboratory since 1998 (ISO 17025 accredited as of January 2009), and to better serve our community, we propose continuing the development and implementation of a DNA backlog reduction program through the purchase, validation, and evaluation of a single PCR Amplification of core CODIS loci (either AmpFISTR Identifier Plus or PowerPlex 16 HS System), a PCR amplification system for challenging samples (MiniFiler), and an enhanced resolution system for Y STR DNA (YFiler) and through digitizing paper case files for incorporation into the new LIMS (to be purchased through award 2009-DN-BX-K095).



The improved amplification technologies will enhance the efficiency of total case request turnover and increase the output capacity of Serology/DNA case samples to meet our primary goal of reducing the amount of time a sample requires for genetic analysis. Currently, there are about 50 forensic Serology/DNA cases that require examination for the presence of biological fluids (blood, semen and saliva) and/or DNA analysis. In addition, the demand for DNA testing has exceeded capacity, increasing about 30% over the previous year. The resulting DNA casework backlog represents approximately a 2 month waiting period for our client law enforcement agencies.

We will accomplish this project goal by purchasing, validating, evaluating, and, if sufficient for our requirements, implementing a single PCR amplification of core CODIS loci, a PCR amplification system for challenging and degraded samples, and an enhanced resolution system for Y STR DNA. The most cost effective methods, as required by authorized Bexar County policy, will be used to purchase all necessary equipment and software.

As an additional goal for the project, due to local budget cuts, grant funds will assist the BCCIL in meeting accreditation standards as outlined in the DNA Audit Document for the Continuing Education (CE) of DNA analysts. We will accomplish this goal by sending staff to sufficient local and national training in required forensic DNA related areas to satisfy the requirements of the current version of the Quality Assurance Standards for Forensic DNA Testing Laboratories.

The Assistant Crime Laboratory Director (ACLD) will manage and monitor this capacity enhancement program. The ACLD, acting as the Grant Manager and Point of Contact, will compile and send all necessary progress reports to the appropriate agencies.

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**FY 2010 Recipient Name:** City of Houston, Texas

**Award Number:** 2010-DN-BX-K112

**Award Amount:** \$1,143,339

**Abstract:** The Houston Police Department's 5300 officers work to maintain the public safety for those who live, work and visit Houston. The nation's fourth largest city has an estimated population in excess of two million. According to 2008 UCR statistics, 20% of the 123,621 Part 1 Violent Crimes were reported by the City of Houston.

The Houston Police Department's Crime Lab provides lab services to the Houston Police Department, Houston Independent School District, various Harris County Constables Offices, various federal agencies, and the Houston Metro Police. The HPD Crime Lab is accredited by ASCLD-LAB in Biology (DNA), Controlled Substances, Toxicology, Trace, Firearms and Questioned Documents. On average approximately 900 requests are for DNA testing and 1200 requests are for determining the presence of biological fluids.

Since being accredited in 2006 and reactivation of CODIS, the HPD Crime Lab's DNA section has steadily seen an increase in demand for services. Due to the high demand and lack of capacity, the backlog has increased to 935 cases waiting for DNA testing and 520 waiting for the identification of bodily fluids. In addition, approximately 4000 sexual assault kits are being stored in the Property Room in which analysis has not been requested, some of which date back to the 1980s.

Funding is being requested to hire temporary staff to examine approximately 2300 sexual assault kits stored in the HPD Property Room, outsource 320 cases for DNA testing and 390 overtime hours for the purpose of shipping evidence and reviewing outsource DNA cases for CODIS entry.

The primary objective of this request is to reduce the backlog and provide investigative information to detectives with the primary goal of solving crimes.

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**FY 2010 Recipient Name:** Utah Department of Public Safety

**Award Number:** 2010-DN-BX-K117

**Award Amount:** \$281,036

**Abstract:** The Bureau of Forensic Services (BFS) is requesting \$281,036 in 2010 NIJ/DNA Backlog Reduction Program grant funds on behalf of the Biology/DNA Section of the laboratory. The goals are to reduce DNA case turnaround time, increase the throughput in the DNA laboratory, and reduce DNA forensic casework backlogs.

The Utah Bureau of Forensic Services (BFS) consists of three forensic laboratories strategically located throughout the state, and employs 29 full-time employees. BFS is designed to assist local, state, and federal law enforcement officers and prosecutors in analyzing evidence taken from crime scenes throughout Utah.

BFS is the only ASCLD-LAB internationally accredited, government-owned forensic laboratory system in Utah. DNA analysis services have been provided by BFS since 1992 in the Salt Lake City forensic laboratory. All three BFS laboratories were awarded ASCLD-LAB International accreditation during June 2007.

The biology section of the laboratory is audited every year. The laboratory is audited by an external agency at least one time every two years. When the section is not being audited by an external agency, an internal audit is conducted. The biology section of the laboratory has successfully completed all of its internal and external audits and complied with all audit documents and reviews.

Methods to achieve the goals include:

1. Hire one Forensic Scientist II
2. Provide external training for the DNA analysts (2011 Promega Symposium, 2011 AAFS).
3. Purchase equipment and supplies to streamline the DNA analysis process (DNA supplies, 3500 Genetic Analyzer).

BFS employs seven analysts in the biology section, which includes one Biology Manager, five fully trained serology and DNA analysts (including the DNA technical leader) and one serologist. BFS anticipates the serologist will begin DNA training within the next three months. BFS employs three analysts in the CODIS section, which includes one CODIS administrator, one CODIS analyst, and one CODIS office specialist.

Between January and March 2010, there have been 49 DNA cases, 118 serology-screening cases, and 372 items submitted to the Biology Section for examination, which equates to a case submission increase of nearly 50%, compared to the previous quarter. The five fully trained DNA examiners plus the supervisor are working on current cases as well as some from 2009. The sixth examiner is expected to complete his DNA training by December 2010.

Currently, the DNA turnaround time is 36 days for the average DNA case, and the throughput is about 8.5 samples a month per analyst. The goal of BFS is to maintain a DNA turnaround time of less than 45 days. This goal has been achieved through the assistance of NIJ and the funds offered through the DNA backlog reduction grants.

DNA administration estimates that the turnaround time will be maintained to less than 45 days and the throughput will increase to 10 samples a month within 12 months using the federal funding requested in this FY 2010 program09 (Is this date correct? Do we mean 2010?). This is dependent, however, on turnover and caseload. The laboratory has recently validated Y-STR analysis testing methodologies and is working on Minifiler validation, which may potentially increase the amount of cases and samples per case.

Over the past year BFS has noticed an increase in the need for alternate forms of DNA testing (including YSTR and Minifiler). There has also been an increase in the request for more property type crime analysis. The laboratory is expecting this testing to add to their caseload. BFS has begun to open their case acceptance policy as well, and are now allowing felony type burglaries/thefts and property crimes into the laboratory. The addition of these types of cases will also increase the number of cases and samples that the analysts are processing.

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**FY 2010 Recipient Name:** Virginia Department of Forensic Science

**Award Number:** 2010-DN-BX-K120

**Award Amount:** \$920,520

**Abstract:** The Virginia Department of Forensic Science (DFS) will utilize grant funding acquired to pay the salaries and fringe benefits for five “restricted position” (i.e., grant funded) full-time personnel. One full time forensic laboratory specialist will be hired who will contact Virginia’s law enforcement agencies on a regular basis to determine the status of the backlogged cases in order to prevent unnecessary analysis from being performed on cases that have been terminated or already adjudicated. This individual will also assist the DNA examiners with support functions such as making reagents, quality control of critical reagents/equipment, and inventorying and ordering supplies. The remaining four positions will be filled by scientists who will be conducting scientific exams on backlogged cases. It is estimated that these staff additions will allow for the completion of 576 backlogged forensic biology cases during the grant period from October 1, 2010 through March 31, 2012.

All eligible forensic DNA casework profiles will be uploaded to the Combined DNA Index System (CODIS) as expeditiously as possible. Thus, more timely information, derived from the analysis of these types of cases, can be provided to law enforcement agencies throughout Virginia for use in charging, arresting, and trying suspects, exonerating them, and solving cases without suspects. In addition, all DNA analyses performed under this program will be maintained in accordance with the applicable state and federal privacy regulations.

Additional funds will be used for purchasing supplies associated with screening and conducting DNA analysis on the backlogged cases. Expert systems will be purchased to conduct quality assurance checks of the DNA data. Funding will also be used for the statewide DNA annual mandatory training in accordance with the FBI Quality Assurance Standards.

In summary projected goals and objectives of the grant are to increase casework capacity by hiring personnel to process backlogged cases. It is projected that an additional 576 cases can be completed by the analysts. Expert systems will also be purchased to increase efficiency in the DNA data bank and casework operations statewide.

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**FY 2010 Recipient Name:** Vermont Department of Public Safety

**Award Number:** 2010-DN-BX-K055

**Award Amount:** \$150,000

**Abstract:** The analysis of DNA casework and the uploading of DNA profiles to NDIS are of paramount importance to the Vermont Forensic Laboratory (VFL). Previous NIJ grant programs have allowed the VFL to attack the growing casework and convicted offender backlog problem through outsourcing cases to vendor laboratories, evaluating backlog cases by contract

personnel, and by the implementation of the use of new instrumentation. Our goal is to continue to apply the grant funds from the 2010 Forensic DNA Backlog Reduction Program to reduce the backlog and turnaround time for DNA casework, while building DNA fragment analysis capacity. Our objective is to employ additional personnel, use overtime for existing staff, purchase necessary DNA supplies to conduct the necessary analyses and provide funds to build capacity through the purchase a multi-capillary instrument.

Our plan to reach our goals includes a number of different activities. The first activity will be to retain an individual who was hired five years ago under an NIJ grant. We will continue her employment to assist in handling and reducing any backlog of criminal forensic DNA casework samples. It is our practice to contact the officers or prosecuting attorneys prior to the start of case analysis to screen the active from the non-active cases. This person, a forensic chemist, will assist in this process, in the screening of sexual assault cases and will also assist our DNA casework analysts. Overtime money for serologists and DNA personnel will allow more time to process the backlog samples. We will also use the funding to allow us to purchase adequate supplies to continue to process a wide range of cases including property crime cases and to fund a contract for the calibration of pipettes. The purchase of a new capillary instrument in combination with these efforts will assist our laboratory meet our overall goal which is to provide the level of DNA analysis to meet the needs of the Vermont Criminal Justice System.

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**FY 2010 Recipient Name:** Washington State Patrol

**Award Number:** 2010-DN-BX-K174

**Award Amount:** \$1,004,276

**Abstract:** An automated systems Forensic DNA analysis has been implemented in the Washington State Patrol Crime Laboratory Division DNA Laboratories. This modernization has been made possible through funds from the capacity enhancement component of the NIJ DNA Backlog Reduction Grant Program. The current FY 2010 solicitation will supply funds to use the extra analytical capacity from the automated systems to complete more cases above and beyond what annual state funding provides and to continue to improve on DNA analysis turnaround times.

Over the last twelve months (February 2009 through January 2010) the DNA casework capacity, as measured by cases completed, increased by 34%. This increase is evident when compared to the previous 12 months of cases completed (from 1,752 requests to 2,350 requests completed – see attachment 1.1, DNA STR Casework). However, the submission rate also increased by 24% over this same period which in-turn caused the backlog to increase from 779 to 1,014 requests. It is anticipated that the capacity to complete more cases per year will continue to increase as additional staff are trained on the automated system protocols and the new GMIDX casework expert assistant software is implemented this year. The bottleneck preventing an increase in

DNA case completion capacity is the shortage of state funded overtime and laboratory consumables such as DNA typing kits due to budget shortfalls.

In an effort to reduce the future cost per case-request, two internal validations will be conducted: 1) reduced volume DNA quantification (Quantifiler Human and Male); and 2) a single amplification STR kit (PowerPlex 16 HS and Identifiler Plus).

There has also been a rash of outsourcing DNA contract requests from state agencies for DNA analysis of property crimes. The first outsourcing contract-technical specification between Edmonds Police Department and Orchid Cellmark was recently approved by the DNA Technical Leader. Several more are expected with other police agencies which will increase the WSP CLD work load for DNA technical reviews. Contracting a retired WSP CLD DNA forensic scientist to do the reviews will allow current scientific staff to focus on in-house DNA analysis.

There are five components to our proposal for the 2010 NIJ DNA Backlog Reduction Grant formulae funds to increase DNA analytical capacity for casework DNA samples:

1. Laboratory Supplies

- Consumables such as DNA typing kits, EZ1 DNA investigator kits, BioRobot® tips, plates, etc. for casework and validation studies

2. Salary and Benefits of two DNA Forensic Scientist 3s

- Continuation of the positions in the Marysville Laboratory and the Vancouver lab. These individuals will help work on backlogged cases without the substantial delay required when training new forensic scientists.

3. Salary and Benefits of DNA Information Technology Laboratory Employee

- Continuation of the DNA IT employee is needed to maintain and add new instruments and forensic scientists into the state-wide DNA laboratory instrument network. This person is upgrading the electronic notebook of worksheets that was developed to comply with form standardization to meet ISO standards.

4. Property Crime Case DNA Technical Review Consultant

- Contracting of a former WSP CLD DNA Forensic Scientist as a consultant to technically review property crime DNA analysis profiles. This will help offset an increase in approved outsourced technical review requests between agencies and private labs.

5. New Equipment

- Replacement of 4 failing microcentrifuges in the Seattle DNA laboratory.

**FY 2010 Recipient Name:** Wisconsin Department of Justice

**Award Number:** 2010-DN-BX-K151

**Award Amount:** \$713,980

**Abstract:** The Wisconsin Department of Justice (WDOJ) Crime Laboratory System currently has DNA analysis units in its Madison and Milwaukee Laboratories. The WDOJ Crime Laboratories are accredited by the American Society of Crime Laboratory Directors / Laboratory Accreditation Board (ASCLD/LAB). This includes the Madison and Milwaukee laboratories. The most recent accreditation inspection was performed in May of 2006. We are preparing for our re-accreditation which occurs in May 2011. We will be moving from the legacy standard to the ISO standard. As a part of accreditation, the Crime Laboratories perform yearly audits of their operations in each functional area. The DNA Units in the Madison and Milwaukee laboratories undergo external audits every two years. These audits are used as the basis for yearly reports regarding performance in adhering to the accreditation criteria. These units examine biological samples from crime scenes and obtain STR DNA profiles on them to either compare to suspects in the case or to enter into the CODIS system to obtain suspects. Both laboratories have the ability to upload profiles generated under this program to NDIS. All DNA analysis performed under this program will be maintained under applicable federal privacy regulations.

Wisconsin State law requires the State Crime Laboratory to provide DNA forensic services to process evidence involving a potential felony charge. At the beginning of 2009, there were 753 DNA cases unprocessed. This comprises the DNA backlog. In that year, the State Crime Laboratory received 4,624 DNA cases for processing from local law enforcement, and was able to complete 4,548 cases. Reasonable projections of future caseload combined with necessary hiring and training periods indicate that the DNA backlog will continue to grow. The increase in receipts plus the current inability of existing State Crime Laboratory resources to handle current caseload indicate the compounding nature of the problem. At the present time almost all of the analyses are performed on cases with suspects and court dates/orders.

The department realizes that the DNA backlog can not be eliminated in its entirety. No case is turned around immediately, and if every case were on the bench, some analysts would have nothing to do. The better approach is to target a manageable pending case load. The goal is to have every new case assigned to analysts within 30 days of receipt and completed within 30 days of assignment.

This approach maximizes resources in that it attempts to match the number of staff with the expected case submissions.

DNA Screeners/Laboratory Technicians: At our Milwaukee and Madison laboratories, DNA analysts perform the screening and lab tech duties. We propose to hire 3 full-time employees at each laboratory to directly handle the screening of DNA casework evidence, prepare samples,

maintain proper sample "chain-of-custody", record test results and maintain records and, maintain reagents and supplies. The Milwaukee laboratory has 22 full-time DNA casework analysts and the Madison laboratory has 38 casework analysts. Relieving them of the screening responsibilities and general lab tech duties will result in more time on the bench conducting the actual casework analysis. This will increase efficiency and case throughput.

Full-time screener @ \$15/hr x 18 months = \$46,800 each x 6 = \$280,800.

Fringe @ 41.63% x \$46,800 = \$19,483 each x 6 = \$116,898

Fed Indirect @ 20.5% x \$46,800 = \$9,594 each x 6 = \$57,564

Total = \$455,262

BEAST Customization: The BEAST program could be utilized more fully with slight modifications to some of the areas.

DNA utilizes complete BEAST technology in their analysis scheme but it could be much more user friendly with some slight customizations. We propose to upgrade the DNA module and customize the Chemical Inventory. In addition we plan to add the capability for web reporting. This is referred to as "Report Distribution" which includes generating encrypted TIFF files for the reports, email these reports to a distribution list for each department, ability to send encrypted reports to a web cite and to include digital signatures. We will also add Electronic discovery. The laboratory produces realms of paper data which we send to DA's and defense attorneys. We plan to develop the capability to send it electronically or capture to a disc to respond to discovery demands.

Convicted Offender Collection Kits: We are switching to a FTA or IsoCode card for our convicted offender collection kit. The FTA cards provide a cost effective room temperature method for collecting, shipping, archiving, and processing of biological samples. We receive approximately 1000 convicted offender samples per month.

DNA Punch System: A punch processing system which would allow us to automate the analysis of DNA samples more fully using robotics. Without the continuation of this program for the analysis of backlogged DNA cases, the Wisconsin State Crime Laboratories will not be able to offer these analyses to state and local agencies on any kind of a consistent basis. In addition, the improvements proposed in this plan are critical to preventing future DNA backlogs. Many of these crimes would never be solved and the perpetrators would be loose on the streets to commit more offenses.

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**FY 2010 Recipient Name:** West Virginia State Police

**Award Number:** 2010-DN-BX-K083

**Award Amount:** \$230,014



**Abstract:** The West Virginia State Police devised a long term development plan for the Biochemistry Section (DNA) seven years ago. As a part of the plan, the unit was processed mapped in 2006 to further define the original long-term plan. The goals of the plan were to increase the efficiency and output of the section without significant increases in personnel. In accordance with the plan the section has converted from gel based genetic analyzers to capillary-based units and implemented real-time PCR. Two Liquid handling robots have been purchased and validation and case implementation has been completed on one robot. Commercial Expert Systems have been evaluated and the Laboratory is in the process of purchasing the GeneMapper ID-X Expert System. The remaining key component identified by the process mapping is a new LIMS system. The Laboratory has sent requests for proposals to LIMS vendors and has a pre-bid conference scheduled for May 25, 2010. In our evaluation of a new LIMS, the Laboratory has concluded that the services of an information technology contractor will be needed for a smooth transition from the current system to the new one. Grant funds awarded under the 2009 Backlog Reduction Program will be used to acquire the services of a LIMS consultant however it is expected that this project will be a lengthy process and go beyond the eighteen months projected duration as proposed in our 2009 application and therefore will require additional funds. The areas of need that will be addressed with this grant are the use of a contractor for the continued implementation and customization of a new LIMS, the replacement of Microsoft Office 2003 with Microsoft Office 2007 licenses for compatibility with the new LIMS, the acquisition of additional computer monitors to decrease turnaround time for technical review, the acquisition of an AB 3500 Genetic Analyzer to continue our goal of high throughput of DNA samples, to acquire a new PCR amplification system to maintain high throughput, to upgrade the heating and cooling system in the amplification room to avoid big fluctuations in temperatures, to upgrade the overall cooling system in the Biochemistry section, and to provide continued education to five DNA analysts. It is expected that data analysis, case review and case file management will be improved by the implementation of the components to be purchased with the 2010 grant.

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**FY 2010 Recipient Name:** Wyoming Office of the Attorney General

**Award Number:** 2010-DN-BX-K160

**Award Amount:** \$150,000

**Abstract:** STATE: Wyoming

**PROGRAM TITLE:** FY 2010 Forensic DNA Backlog Reduction Program – Wyoming State Crime Laboratory

The Wyoming State Crime Laboratory (WSCL) is located in Cheyenne, Wyoming, and is the only full service forensic laboratory in the state which provides examinations in Chemistry, Biology, Firearms/Tool marks, Latent Prints/Questioned Documents and Trace. The fundamental mission of the laboratory is to provide, in a timely manner, a full range of forensic services to all local, state and federal law enforcement agencies throughout the state. This projects goals and

objectives are to reduce the DNA casework backlog and to increase the DNA analysis capacity at the WSCL using NIJ funding through this solicitation.

We plan to reduce the DNA case backlog by the allocation of overtime hours to existing staff and by outsourcing a number of samples to an accredited vendor laboratory. The overtime will be used predominantly to handle, screen and analyze forensic DNA casework samples. A small amount of overtime will be used for the validation of new laboratory methods. Approximately twenty-five samples (25) will be outsourced to Sorenson Forensics

The purchase of supplies necessary for our automated DNA extraction process and for the purchase of DNA analysis kits for use with casework is also included. We are also requesting funding for DNA test kits necessary to validate new methodologies, including a single amplification multiplex kit for casework and a direct amplification kit for known and offender samples. This capacity enhancement will allow the WSCL to reduce the backlog of cases that are waiting for analysis while still progressing with the unit's validation and training projects.