

**Rapid City Police Department**

**Application for:**

**Paul Coverdell Forensic  
Science Improvement  
Grants Program 2006**

**Sgt. Mike Jordahl  
Rapid City Police Department  
Evidence Section**

## **Proposal Abstract**

The Rapid City Police Department's crime scene, fingerprint identification, computer crime, and drug analysis units provide services to federal and local agencies throughout western South Dakota and the Black Hills. Some of the current technical equipment used by our examiners is outdated, insufficient, and not practical for today's standards of forensics. The goals for this proposal are to replace and purchase those tools necessary to reduce the backlog, limit the lost time for equipment repairs, and improve the casework quality for our community and the surrounding areas we serve. The proposal also includes goals towards our future accreditation through ASCLD-Lab. The accreditation process requires training, consulting, and fellowships with current accredited lab agencies. It is the goal of this proposal to apply for the competitive funds and establish a project period of October 1, 2006 to September 30, 2007.

## Program Narrative

The fingerprint identification unit works approximately 300 cases annually, and an average backlog of 3 months is common throughout the year. The lab's superglue vacuum chamber, forensic light source, and camera equipment are outdated and insufficient for providing high quality latent print processing. The proposed funds to replace and add these items would increase the quality of developed latent prints and the photographic documentation of them.

Our current vacuum chamber was built from scrap piping in approximately 1998. I have since been to training at the FBI Academy and the National Forensic Academy and used manufactured brands of vacuum chambers. The results far exceeded what our chamber is capable of regarding the development of comparable latent prints. The Cyanovac III Combo Chamber by Sirchie Co. is comprised of 2 separate vacuum chambers and runs off of a dedicated vacuum pump. The large chamber can process objects of various shapes and sizes while the long narrow chamber can process long guns or similar items. At this time, processing a long gun with superglue requires more time to prepare a makeshift chamber than the process itself. Vacuum fuming is more efficient and develops latent prints without the worry of overdevelopment. The acquisition of this item would improve the quality as well as save processing time.

A large portion of fingerprint development is spent using an alternative or forensic light source. While there are many brands in use in labs, the most widely used is the Omniprint 1000b by Omnichrome (Lightning Powder Co.). Our current light source requires the replacement of lenses and filters to change the different wavelengths of light. Each time a change is done, the unit needs to cool off, then warm up again prior to use.

The Omniprint can scan through 6 different wavelengths of light in a few seconds instead of 15 minutes with our current unit. This adds up to an enormous amount of lost time when considering many cases involve numerous latent prints found. The unit is also smaller and more portable for crime scene use. While the quality is better with this addition, the efficiency and convenience of this item would benefit our examiners tremendously.

The identification of latent print evidence requires precise photographic documentation. To achieve this, high quality camera equipment is necessary from the work in the lab to its eventual presentation in the courtroom. Our objective is to acquire a Nikon D2X Digital SLR Camera, SB-800 flash unit, and a flash unit made for close up photography. These can be mounted on a photo stand with the camera and dedicated to the photography of latent prints and other detailed forensic evidence. These cameras are made for professional use and provide the highest quality of detail needed for precision exposures of latent fingerprint evidence. Some time would be saved with this proposal, but the increase in quality would exceed our current equipment's ability.

The drug lab's Fourier Transform InfraRed Spectrometer (FTIR) is currently 10 years old. In the last 2 years we have replaced the laser twice. Each time the laser goes down it costs approximately \$3,500.00 to replace and increases the backlog 2 weeks. Many of western South Dakota's agencies rely on our lab to process their drug evidence. The purchase of a new FTIR Spectrometer from Thermo Nicolet would reduce repair costs and reduce backlog during those repairs.

Our computer crime unit at this time has 2 investigators assigned to it. They are sharing a forensic computer to handle all computer crime in the county. Having 2

forensic computers would double their working capabilities and enable them to decrease the backlogs of cases involving internet child porn, identity theft, and other computer related crimes.

The Rapid City Police Department has been an accredited agency through CALEA since 1990. The lengthy process of the forensic lab to become accredited through ASCLD-Lab has been started. Networking with other accredited labs is essential in the process and hiring consultants will be required to achieve this goal. Acquiring funds to cover travel expenses and consulting fees would assist in the accreditation process and allow us to become ASCLD-Lab accredited in a timely manner.

## Budget Narrative

The proposed expenditures are for equipment and resources that will be used for the laboratory's daily operations. None of the requested funds are planned in any annual budget.

The Cyanovac III Combination Vacuum Chamber Outfit has a total cost of \$2,026.50 from the Sirchie Co. The package includes all the necessary items needed for developing latent prints from most objects. Included are 2 vacuum chambers, vacuum pump Diaphragm Type and dual tank connectors, gun rack tray, and a miscellaneous items tray. The new vacuum chambers would be utilized on a daily basis and take the place of the existing hand made chamber and the 10 gallon aquariums currently used.

The Omnicrome Omniprint 1000b Forensic Light Source has a total cost of \$9,800.00 from the Lightning Powder Co. The unit comes complete with 6 output wavelength selections as well as UV and IR filters and white light. The fiber optic cable and accessories necessary for operation are all included. The forensic light source is used in conjunction with superglue vacuum fuming and dye stains, therefore it would be used on a daily basis taking the place of the current light source.

The Nikon D2X digital SLR camera body has a total cost of \$4,999.00 from either Porter's Camera or Ritz Co. The SB-800 flash is a mountable flash and provides even light for lab and scene work and costs \$349.00 from Porter's Camera. The Nikon Wireless Close-up Flash system has a total cost of \$680.00 from Ritz Co. The unit mounts on the camera's lens offering a better quality light emission and the convenience of no cables or wires dangling around the camera and evidence. The new camera and equipment will provide better photographic quality for fingerprint comparisons and may

cut down time needed for re-shooting photos due to poor lighting conditions.

Thermo Electron North America has given us a total price of \$56,000.00 for a new Thermo Electron Nicolet 6700 FTIR Spectrometer. This new upgraded unit will allow the forensic chemists to analyze drugs in a more efficient manner without the lost time and cost of repairs associated with the older system.

A forensic recovery evidence device or FRED is the computer needed for the computer crime unit. The computer from Digital Intelligence costs a total of \$6,000.00. The software to run the necessary programs is the EnCase Forensic Edition Software. The software costs an added \$4,000.00. This addition of technology to the computer crime unit would allow the investigators to utilize two computers and decrease backlog.

The process of becoming accredited through ASCLD-Lab is similar to the CALEA process. Procedures must be in place and certain rules need to be adhered to in order to achieve the high integrity level of today's forensic labs. I have outlined in the budget worksheet an estimated cost of travel expenses and consulting fees for us to visit accredited labs and for individuals to visit our lab.

## Budget Detail Worksheet and Summary

- A. Personnel**.....No proposed expenditures
- B. Fringe Benefits**.....No proposed expenditures
- C. Travel**.....\$3,000.00  
(ASCLD-Lab visitation and training by RCPD personnel) This figure was calculated by the average travel expenses paid to travel for 2-3 day trips to 2 accredited laboratories. This figure includes mode of transportation, meal expenses, and hotels.
- D. Equipment**.....Cyanovac Superglue Chambers \$2,026.50  
(Sirchie Co. 2005/2006 Product Catalog)
- .....Omniprint 1000b FLS \$9,800.00  
(Direct quote from Lightning Powder Co.)
- Nikon D2X digital camera, SB-800 Flash, Nikon Close-up Flash \$6,028.00  
(Porter's Camera, Ritz Co., Nikon Co.)
- .....Thermo Nicolet FTIR Spectrometer \$56,000.00  
(Direct quote from Thermo Electron North America, LLC)
- .....Forensic Computer and Software \$10,000.00  
(Digital Intelligence-Forensic Recovery Evidence Device Computer \$6,000.00, and EnCase Forensic Edition Software \$4,000.00 )
- E. Supplies**.....No proposed expenditures
- F. Construction**.....No proposed expenditures
- G. Consultants/Contracts**.....\$7,000.00  
(ASCLD-Lab Consultant to visit RCPD Lab) This would cover travel expenses and consulting fees for an individual/s to assist in the accreditation process from an accredited laboratory.
- H. Other**.....No proposed expenditures
- I. Indirect Costs**.....No proposed expenditures

**Total Proposed Expenditures**      \$ 93,854.50



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OFFICE OF JUSTICE PROGRAMS  
NATIONAL INSTITUTE OF JUSTICE

**FY2006 Coverdell Forensic Science Improvement  
Grants Program**

Certification as to Plan for Forensic Science Laboratories –  
Application from a **Unit of Local Government**

On behalf of the applicant agency named below, I certify the following to the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice:

The unit of local government has developed a plan for forensic science laboratories under a program intended to improve the quality and timeliness of forensic science or medical examiner services provided by the laboratories operated by the applicant unit of local government and any other government-operated laboratories within the State that will receive a portion of the grant amount.

I have authority to make this certification on behalf of the applicant agency.

\_\_\_\_\_  
Signature of Certifying Official

\_\_\_\_\_  
Printed Name of Certifying Official

\_\_\_\_\_  
Title of Certifying Official

\_\_\_\_\_  
Name of Applicant Agency

\_\_\_\_\_  
Name of Applicant Unit of Local Government

\_\_\_\_\_  
Date

U.S. DEPARTMENT OF JUSTICE  
OFFICE OF JUSTICE PROGRAMS  
NATIONAL INSTITUTE OF JUSTICE

**FY2006 Coverdell Forensic Science Improvement  
Grants Program**

Certification as to Generally Accepted Laboratory  
Practices and Procedures

On behalf of the applicant agency named below, I certify the following to the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice:

Any forensic laboratory system, medical examiner's office, or coroner's office in the State, including any laboratory operated by a unit of local government within the State, that will receive any portion of the grant amount uses generally accepted laboratory practices and procedures, established by accrediting organizations or appropriate certifying bodies.

I have authority to make this certification on behalf of the applicant agency.

\_\_\_\_\_  
Signature of Certifying Official

\_\_\_\_\_  
Printed Name of Certifying Official

\_\_\_\_\_  
Title of Certifying Official

\_\_\_\_\_  
Name of Applicant Agency

\_\_\_\_\_  
Name of Applicant State or Unit of Local Government

\_\_\_\_\_  
Date

U.S. DEPARTMENT OF JUSTICE  
OFFICE OF JUSTICE PROGRAMS  
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**FY2006 Coverdell Forensic Science Improvement  
Grants Program**

Certification as to Use of Funds for New Facilities

On behalf of the applicant agency named below, I certify the following to the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice:

The amount of the grant (if any) used for the costs of any new facility or facilities to be constructed as part of a program to improve the quality and timeliness of forensic science and medical examiner services will not exceed the limitations set forth at 42 U.S.C. § 3797m(c) and summarized in the FY 2006 Coverdell Forensic Science Improvement Grants Program Announcement.

I have authority to make this certification on behalf of the applicant agency.

\_\_\_\_\_  
Signature of Certifying Official

\_\_\_\_\_  
Printed Name of Certifying Official

\_\_\_\_\_  
Title of Certifying Official

\_\_\_\_\_  
Name of Applicant Agency

\_\_\_\_\_  
Name of Applicant State or Unit of Local Government

\_\_\_\_\_  
Date

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**FY2006 Coverdell Forensic Science Improvement  
Grants Program**

Certification as to External Investigations

On behalf of the applicant agency named below, I certify the following to the National Institute of Justice, Office of Justice Programs, U.S. Department of Justice:

A government entity exists and an appropriate process is in place to conduct independent external investigations into allegations of serious negligence or misconduct substantially affecting the integrity of the forensic results committed by employees or contractors of any forensic laboratory system, medical examiner's office, coroner's office, law enforcement storage facility, or medical facility in the State that will receive a portion of the grant amount.

I have authority to make this certification on behalf of the applicant agency.

\_\_\_\_\_  
Signature of Certifying Official

\_\_\_\_\_  
Printed Name of Certifying Official

\_\_\_\_\_  
Title of Certifying Official

\_\_\_\_\_  
Name of Applicant Agency

\_\_\_\_\_  
Name of Applicant State or Unit of Local Government

\_\_\_\_\_  
Date