

**2014 Paul Coverdell Forensic Science Improvement Grants Program
County of Greenville, SC
Department of Public Safety – Forensic Division
Program Narrative**

Problem Statement

The Greenville County Forensic Division Laboratory is part of the Greenville County Department of Public Safety. The Department was established in the mid 1970's to eliminate the duplication of services and provide higher quality support services to the law enforcement agencies in Greenville County. The original name of the organization was the Police Service Bureau and was comprised of ID/Forensic services, Records Management, Dispatch/Communication Services, Training Division and a Crime Laboratory. The original Crime Laboratory was initially staffed by two part-time employees who were retired from the FBI Forensic Laboratory. Through the years the type and volume of crime has continued to change and increase thus numerous modifications were made to provide the best and most demanded services. The advent of technological advances in all areas has also affected the services provided. Currently the Department of Public Safety is comprised of the Greenville County Detention Center, Records Management Division and Forensic Division.

The Forensic Division is comprised of the Crime Scene Section, Drug Laboratory, Firearms Laboratory, Latent Print Section, Property and Evidence Section, and the DNA Laboratory. The Forensic Division is funded solely through the County budget process and potential grant funding but does not receive the financial benefit of seizure money used in the funding of other agencies. With the recent economic recession revenues to governmental entities has been greatly reduced. As a result funding for the Forensic Division has been reduced 24% over the past three years. These budget reductions have had a major impact on the Forensic Division. Fortunately, since 2008 the Forensic Division has been able to take advantage of over

\$1,000,000 in grant funding through JAG, JAG Recovery, Paul Coverdell, and NIJ. This funding has allowed for continued operation at previous levels, improve officer/analyst safety, and provide renovated facilities. The crowning achievement in recent years was the opening of a DNA Laboratory. The planning for this endeavor began in 2004 and finally came to fruition in 2011 when the Laboratory received ISO 17025 Accreditation through FQS-I and opened for service.

Presently, the Forensic Division Laboratory provides forensic services to the Greenville County Sheriff's Office, Greenville Police Department, Greer Police Department, Travelers Rest Police Department, Mauldin Police Department, Simpsonville Police Department, and Fountain Inn Police Department. These services include crime scene processing, latent print analysis, drug analysis, DNA analysis and firearms analysis. The Forensic Division Laboratory also periodically assists federal and state law enforcement agencies stationed in Greenville County. Assistance is also provided to other law enforcement agencies outside Greenville County with the approval of the Forensic Division Manager (Captain). Greenville County is the largest county in South Carolina, by size, with a population of 451,225 according to the 2010 United States Census Bureau.

The two largest agencies in Greenville County are the Sheriff's Office and Greenville Police Department. The majority of cases worked by the Forensic Division are for these two agencies. In 2013, the Greenville County Sheriff's Office reported 13,949 Part 1 Crimes and the Greenville Police Department reported 3,831. Although Part 1 Crimes are the most serious, the Forensic Division still assists in the forensic investigation of many minor crimes as requested. These cases often involve minor thefts and a variety of burglaries ranging from vehicles to

residences and also businesses. The Forensic Division Laboratory provides a wide variety of analysis of evidence from the crime scenes investigated.

In 2009, a study of the state of the Forensic Science community was released by the National Academy of Sciences. This study resulted from the Science, State, Justice, Commerce, and Related Agencies Appropriations Act of 2006 approved by Congress in November 2005. The official report was highly critical in nature and several areas cited as substandard were the lack of accreditation of laboratories, insufficient training for analysts, and the need for certification of analysts in their area(s) of expertise. Currently, the Forensic Division is working in segments toward accreditation, with the first accredited area being the DNA Laboratory. The DNA Laboratory became the first section of the Forensic Division to achieve international accreditation by FQS-I (Forensic Quality Services) in 2011. As funding becomes available other disciplines are going to seek accreditation. In order to comply with accreditation standards, each analyst is required to receive a specified amount of training/career development annually in each discipline in which they conduct analysis and provide testimony. Another area surrounding the training issue is the recommendation for analyst certification. There are currently no local opportunities for the advanced forensic training needed by the Forensic Division. Most applicable training is offered outside South Carolina and involves not only the cost for registration but travel and associated costs, hotels, per-diem, and etc. The total cost for this advanced forensic training often exceeds \$1,500 to \$2,000 per employee for each training opportunity. Once internationally recognized accreditation is achieved in each Section this training/employee development will be required on an annual basis. As previously stated, internationally recognized certification for each Forensic Division analyst will also have a

training component involved. There will be required training prior to certification and ongoing training will be required during the certification cycle to attain recertification.

One of the primary duties of the analyst outside of the actual collection and analysis of evidence is providing expert witness testimony. The training received by each employee and any professional certifications is becoming more critical for expert witnesses to ensure jurors they are professional and competent personnel adding credibility to their testimony. It is the long term goal of the Forensic Division to have each employee certified by a reputable organization. One of the most credible organizations offering forensic certifications at this point is the International Association for Identification. The certifications offered by this organization are primarily in the areas of crime scene, footwear, and fingerprint examination. As certifications grow in popularity there are other accrediting bodies such as IAPE (International Association of Property and Evidence). This organization is offering an accreditation program for Property and Evidence facilities and individual certifications for employees.

Another training consideration is that all Forensic Division analysts are commissioned police officers in South Carolina. In addition to being trained in their forensic disciplines they are also required to receive a certain amount of law enforcement training during each three year accreditation cycle. Failure to receive the required law enforcement training will result in the analyst losing their law enforcement officer certification which ultimately results in the being terminated from their position since this certification is mandated.

Crime Scene Section:

One of the primary services provided by the Forensic Division is crime scene response and reconstruction. The Crime Scene Section is staffed by 14 full-time employees to include supervisors. Each officer is required to be a commissioned police officer in South Carolina and

meet the training and recertification requirements of the South Carolina Criminal Justice Academy. This required training is in addition to forensic related training. The employees of this Section are physically on-duty twenty-four hours seven days per week. During 2013, the Crime Scene Section responded to a total of 6,356 calls for service. Some of the major calls for service during 2013 involved 28 murders, 52 suicides, 62 natural or unexplained deaths, and 3 traffic fatalities. Evolving from these cases crime scene officers responded to a total of 91 autopsies and 44 related death follow ups. Armed robbery calls remained consistent from previous years with 186 requiring Crime Scene response. The processing of crime scenes has become more involved with new and improved technology. Forensic Crime Scene Investigators must continually stay abreast of new techniques, development methods, packaging requirements, and collection requirements brought about as a result of laboratory analysis and technology. A future goal for the Forensic Division is to achieve accreditation of the Crime Scene Section and certifications for its employees. In order to achieve this goal training and professional development are going to be mandated requirements. Maintaining trained and qualified employees has always been a challenge for the Crime Scene Section with a significant turnover rate of over 50% in 2013.

Latent Print Section:

The Latent Print Section is one of the oldest established components of the Forensic Division. This section bears the responsibility of conducting examinations of finger/palm print evidence and impression evidence such as that left by footwear and tires. The Latent Print Section is staffed with two full-time examiners supplemented by two part-time examiners that provide case peer/administrative review. The two part-time examiners are also available to supplement the full-time examiners in situations of manpower shortages and large volumes of casework. Three of the latent print examiners have been qualified as expert witnesses in

fingerprint examination in State Court and two qualified in Federal Court. Only one of the examiners has ever been qualified as an expert witness in footwear examination. This qualification came in State Court. All four of these employees are required to be certified law enforcement officers and may be required to supplement Crime Scene Section Investigators in the event of manpower shortages or when their expertise is required on a crime scene. In addition to their normal duties two of the examiners were required to work in the Crime Scene Section during 2013, where they responded to 173 crime scene calls.

In 2013, examiners in the Latent Print Section conducted 196,752 latent print examinations. These examinations resulted in 3,310 fingerprint matches. The Latent Print Section also has an AFIS (Automated Fingerprint Identification System) workstation which is networked to the main fingerprint repository at SLED (South Carolina Law Enforcement Division) and the IAFIS database at the FBI. In 2013 there were 1,310 fingerprint matches directly resulting from prints searched on AFIS.

In order to be trained to properly perform in their position latent print examiners must receive relevant training in various types of impression evidence analysis and also forensic crime scene investigation. In addition to the crime scene and impression evidence examination training the typical examiner works in an apprentice type role for 2 years before they are proficient enough to perform case work in a solo capacity.

As previously mentioned, the National Academy of Science recommended in their 2009 report that all analysts should hold certification from internationally recognized organizations. Currently, one of the Latent Print Examiners is certified through the International Association for Identification in the discipline of latent print examination. This analyst is required by the International Association for Identification to meet certain criteria, to include a predetermined

number of training hours, to maintain their certification. The long term goal has been to have every examiner certified in latent print examination along with certification in footwear examination. Without the appropriate funding the goal of having latent print examiners that are certified in these disciplines will never become reality.

The lack of current funding for training hurts the skill and ability level of the examiners and the agencies they serve. To combat these funding issues, alternatives have been explored such as on-line classes. Some of these on-line classes are free but many have fees associated. Should additional funding not be granted, the only alternative is for the examiners to pay for advanced training and certifications themselves which is not a desirable alternative.

Since the Latent Print Examiners are also required to be a backup source for the Crime Scene Section, they also need training in crime scene investigation. Current funding levels and the need for first line crime scene investigators to receive this training first almost ensures the latent print examiners will not receive crime scene investigation training.

Drug Laboratory:

The Drug Laboratory of the Forensic Division was established in the late 1980's and began simply with marijuana analysis. Over the course of time the Drug Laboratory evolved into the analysis of hard drugs. The initial staffing of the Drug Laboratory was a single analyst. Over the course of time with the increase in the marijuana caseload and the addition of hard drug analysis, the Drug Laboratory staff has increased to three analysts. In 2013 there were 1,367 marijuana cases worked which resulted in 3,015 examinations. The number of hard drug cases submitted for 2013 was 2,016 which were consistent with 2012 cases. As a result of the submitted casework there were 16,150 hard drug examinations conducted.

Training for Drug Laboratory Analysts has basically been non-existent. The Drug Lab Manager last attended a related training class in 2004. The next most senior analyst last attended a related training class in 2000. The newest analyst, who was hired in January 2010, has received no training, aside from her internal training prior to beginning casework.

The field of drug analysis is ever changing particularly with the advent of bath salts, synthetic marijuana, and methamphetamines. The only way the Drug Laboratory has been able to stay abreast of current information has been through professional publications and organizations along with verbal communication with other drug analysts in South Carolina.

Aside from analytical duties the employees of the Drug Laboratory are required to provide testimony in judicial proceedings more than anyone else in the Forensic Division. Training is a key component in providing expert witness testimony concerning analytical duties. A credible expert witness is expected by the jury, court system, and defendants to receive ongoing training and be proficient in their discipline. The guilt or innocence of the defendant is often determined by the testimony of the expert witness.

Project Purpose

Broad Goals

The Greenville County Forensic Division is comprised of a group of highly dedicated that work to provide forensic services and analysis to law enforcement agencies within Greenville County. Being the largest forensic organization in the upstate of South Carolina, with 31 full-time and 2 part-time employees, the Forensic Division is a well-known and trusted organization to provide forensic expertise in the area. In an effort to remain current with ever changing technology and techniques ongoing training is essential. This training is also essential

to attain individual analyst certifications and laboratory accreditation. If awarded, this grant funding will be used for individual analysts to attend training/professional development courses in their assigned discipline(s) required to remain current with technical and professional aspects of their position. The funding will also be used for employees achieving/maintaining skill specific certifications and also any accreditation requirements.

Specific Plan

1. Enroll most recently hired Drug Laboratory Analyst in GC/MSD ChemStation & Instrument Operation training in Alpharetta, GA (Course Registration \$3,000 plus lodging, travel, and per diem)
2. Enroll 2 Drug Laboratory Analysts in GC/MSD Troubleshooting & Maintenance training in Alpharetta, GA (Course Registration \$1,800 Per Person plus lodging, travel, and per diem)
3. Enroll 2 Latent Print Section Analysts in Ron Smith & Associates Course “Examination and Comparison of Footwear Impression Evidence” – location to be determined - (Course Registration \$550 Per Person plus lodging, travel, and per diem)
4. Enroll 2 Latent Print Section Analysts in the International Association for Identification Conference in Sacramento, CA (Basic Course Registration \$400 per person and Workshop fees of \$200 per employee plus lodging, travel, and per diem)
5. Enroll 13 Forensic Crime Scene Investigators in individual classes offered by Central Piedmont Community College in Huntersville, NC. These classes range in topics from crime scene processing and documentation to specific skill classes used in crime scene reconstruction such as officer involved shootings and bloodstain pattern analysis. These courses range in registration fees from \$137 to \$ 192 each. Courses range from one to five

days in length. Additional costs incurred would be for lodging and per diem. A Greenville County vehicle can be used for transportation which will be absorbed in the Forensic Division budget.

Project Objectives

1. Provide the Drug Laboratory Analyst with training to have a better understanding of the operational aspects of instruments used in daily drug analysis allowing them to better explain the steps and methodology used in drug analysis.
2. Provide training to the Senior Drug Laboratory Analysts in recognizing issues, troubleshooting issues with GC/MS and how to properly maintain the instrument.
3. Provide training to the Latent Print Examiners in the area of footwear/impression evidence to be a more proficient examiner, provide expert witness testimony in that discipline and ultimately build upon the training and experience required to be certified by the IAI in the discipline of footwear examination.
4. Provide two Latent Print Examiners with a variety of internationally recognized training in their discipline by attended the annual International Association for Identification Annual Training Conference. This conference offers a multitude of training opportunities for attendees in multiple forensic disciplines.
5. Provide a variety of training to Crime Scene Personnel to enhance the skills and abilities of a relatively new group of employees without specific skills training. This training will build on the foundation of their initial field training program. This training will enhance the overall skills and abilities offered by the Crime Scene Section.

Performance Indicator(s)

1. A Senior Drug Laboratory Analyst will observe the employee who attended the ChemStation & Instrument Operation training as they provide expert witness testimony a minimum of three times during the grant period. A Courtroom Testimony Evaluation Sheet will be completed by the observer for each time testimony is observed.
2. Once the Drug Lab Analysts have completed the GC/MSD Troubleshooting & Maintenance Course a written detailed maintenance log will be completed for any troubleshooting and maintenance of the GC/MS.
3. Footwear cases worked by the examiners attending the footwear training will be documented in writing specifying the unique case number, results of the examination, and date the examination was conducted.
4. The Latent Print Examiners attending the IAI Conference will provide a synopsis of their training and how the training will aid in their professional development/skills, IAI Certifications, and toward accreditation of the Latent Print Section. Annual written evaluations will be conducted and maintained for each employee attending the IAI Conference. This evaluation will serve as an assessment tool to measure the benefits of the conference on the skills/abilities of the employee.
5. Management of the Crime Scene Section will maintain records of training classes actually requested and the classes actually received. Documentation will also be maintained of the successful completion of courses by Crime Scene Section employees.
6. Management will observe the courtroom testimony of Crime Scene Section employees to ensure the quality and professionalism of testimony provided. After the testimony is observed by management the employee's performance will be personally reviewed and

documented. The written documentation of testimony observation will be maintained by the Crime Scene Section Supervisor and the Forensic Division Quality Assurance Manager.

Project Evaluation

The Forensic Laboratory Manager (Captain) will serve as the Project Director for the grant. This person will be responsible for the all reports/evaluation of the project's effectiveness based upon information gathered within the individual Laboratories and conveyed by the Section Managers. These Section Managers will give day-to-day oversight of the goals and objectives set for the grant. The final evaluation will address the achievement of the objectives and performance indicators, as well as the overall impact the project has made on the department and agencies served.

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Budget Narrative

Funds are requested for training, travel, and per diem expenses to allow Crime Scene Personnel and Laboratory Analysts to receive training in their areas of responsibility. This funding will cover costs associated with the class registration, travel, and per diem. The following training will be pursued under the grant:

For Drug Laboratory employees

- GCMSD ChemStation & Instrument Operation Course (Alpharetta, GA) – 1 Employee
- GC/MSD Troubleshooting & Maintenance (Alpharetta, GA) – 2 Employees

Latent Print Section Employees

- Examination and Comparison of Footwear Impression Evidence – (Location Undetermined) - 2 Employees
- International Association for Identification Conference (Sacramento, CA) – 2 Employees

Crime Scene Section Employees

- Central Piedmont Community College in Huntersville, NC (1 Employee per class).
Travel will be by vehicle & will be absorbed by Greenville County.

Forty Hour Classes:

1. Basic Bloodstain Pattern Analysis
2. Advanced Bloodstain Pattern Analysis
3. Advanced Crime Scene Academy
4. Basic Shooting Reconstruction
5. Advanced Shooting Reconstruction

Thirty-Six Hours Class

1. Forensic Latent Print Development

Twenty- Four Hour Classes

1. Basic Crime Scene Photography
2. Buried Body Recovery
3. Case Documentation and Testimony
4. Recovery of Footwear and Tire Track Evidence
5. Officer Involved Shooting

Sixteen Hour Class

1. Footwear and Tire Tracks

Eight Hour Class

1. Chemical Detection of Blood Evidence

The total of funding requested for training:

• Registration/Course Costs	\$11,011
• Hotel	\$ 7,464
• Travel & Associated Fees	\$ 2,697
• Per Diem	<u>\$ 4,698</u>
Total	\$25,870