

DIVISION OF Forensic Sciences

The Division of Forensic Sciences (DOFS) provides scientific support to criminal justice agencies, enabling them to detect, apprehend and prosecute criminals by utilizing accurate, useful and timely laboratory analysis and testimony. Except for limited services provided by local and federal laboratories, DOFS crime laboratories are the only forensic services available to the criminal justice community of Georgia.

DOFS Personnel

The Division of Forensic Sciences (Georgia State Crime Laboratory) was formed by legislative act in 1952. The laboratory had five full-time staff members who processed 651 cases that year. In FY'05, DOFS was authorized 280 scientists, technicians, support staff, and administrative personnel. With an average of 255 employees, DOFS produced more than 83,000 reports.

Due to the shortage of personnel stemming from hard economic times across the state, the backlog peaked at more than 31,000 cases during the fiscal year. In response to the impending crisis in the crime laboratory, the governor and legislature approved 15 new positions. The GBI also redirected funds from other divisions to provide additional staff in the crime lab.

These positions were filled and an intensive training program was begun. Many of the new employees completed their training and began working cases at the end of FY'05. DOFS has formulated a plan to eliminate the backlog and meet current demands.

The three-pronged approach involves attacking the workload problems by developing new business practices, obtaining additional personnel, and outsourcing to private laboratories.

Regional Crime Labs

- Central Regional Lab, Macon
- Northeast Regional Lab, Cleveland
- Coastal Regional Lab, Savannah
- Eastern Regional Lab, Augusta
- Headquarters Lab, Decatur
- Northwest Regional Lab, Summerville
- Southwest Regional Lab, Moultrie
- Western Regional Lab, Columbus

Command Staff



Dan Kirk
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DOFS Operations



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FY'05: DOFS Cases Worked

Forensic Biology	2,759
CODIS Database	13,058
Chemistry	34,092
Firearms	4,105
Latent Prints	1,062
Questioned Documents	663
Toxicology	24,002
Trace Evidence	494
Medical Examiner.....	3,118
Total.....	83,353

LABORATORY Services

DOFS provides scientific support to the criminal justice system in Georgia. Using the most recent technologies and highly-sophisticated equipment, lab scientists and technicians in specialized disciplines collect, analyze and interpret all aspects of physical evidence for law enforcement and prosecutors through the state. They also offer expert testimony on their findings.

FIREARM & TOOLMARK

The Firearm & Toolmark Section ended the fiscal year with 4,105 cases worked and a backlog of 285 cases.

During the year, the backlog of cases increased substantially. The main reason for the increase is related to the loss of firearm scientists at the Coastal, Western, and Central regional laboratories

between October 2004 and February 2005. These losses resulted in all submissions being sent to the Headquarters Lab. During FY'05, one new scientist completed training and three additional scientists began the training process.

Despite the lack of scientists, the section was able to

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eliminate the backlog in Gunshot Residue (GSR) testing. FY'05 began with a backlog of 174 GSR cases awaiting to be worked. The contributory issues were resolved and at the end of the fiscal year, only one case over 30 days old was in the backlog category.

The previous backlog in the National Integrated Ballistic Information Network (NIBIN) section continued to grow for the first eight months of the fiscal year with a substantial backlog of test cartridge cases awaiting entry on the NIBIN computer. At the end

of February 2005, the backlog totaled 8,777 samples. The acquisition of a technician has ceased this annual upward trend and the backlog was reduced by almost 3,000 samples. Should this downward trend continue it is projected that the backlog for NIBIN will be eliminated by the end of FY'06.

At present, forensic firearms examination support is only available at the Headquarters Laboratory and the Northwestern (Summerville) Regional Lab.

IMPLIED CONSENT

Implied Consent provides training in the operation of the Intoxilyzer 5000 for the chemical testing of drivers suspected of being under the influence of alcohol. The section administers the quality control and assurance programs for Georgia's breath alcohol testing program.

In FY'05, 39 Intoxilyzer basic certification classes were held at the Georgia Public Safety Training Center (GPSTC), training 1,053 law enforcement personnel with 216 different agencies. Among these agencies are the Georgia State Patrol, the Department of Natural Resources, and the federally-funded Police Corp. Thirty-seven Intoxilyzer 5000 recertification classes were conducted at seven regional training centers throughout FY'05. Approximately 1,622 operators from 336 different agencies received recertification.

Overall, Georgia has approximately 9,900 certified Intoxilyzer 5000 operators to administer tests to persons arrested for driving under the influence (DUI) of alcohol, operating a boat under the influence of alcohol (BUI), and other alcohol-related offenses. Georgia police agencies purchased approximately 29 new Intoxilyzer 5000 instruments during FY'05, bringing the number of certified instruments in the state to 474 statewide. Currently, 519 agencies actively participate in the GBI Implied Consent breath alcohol testing program.

Crime Lab Disciplines

Drug Identification

Analyzes and identifies suspected narcotics and other controlled substances as well as paints and accelerants.

Forensic Biology/DNA

Detects, identifies, and individualizes biological fluids. The section also maintains a computerized database called CODIS, (COmbined DNA Index System) that stores the DNA profiles of convicted sexual offenders and felons in Georgia. Evidence from all types of cases can be searched on the database to see if matches can be found and suspects identified.

Pathology

Performs autopsies to determine cause and manner of death in criminal and coroner cases.

Toxicology Section

Isolates and identifies drugs and poisons in human tissues.

QUESTIONED DOCUMENTS

The Questioned Documents Section continues to provide forensic document services to law enforcement and the judiciary throughout Georgia for the purpose of determining the origin of authenticity of disputed or questioned documents. The examinations performed include:

- Handwriting and signature analysis
- Non-destructive ink analysis
- Indented impression analysis of documentary evidence.

The section completed and released 313 requests for service during the fiscal year. The examinations were performed within 30

days of the date of assignment.

Section staff members assisted with the examination of and provided expert testimony at trial concerning documentary evidence in criminal matters. Some of those cases included: malfeasance by public officials, handwritten death threats, homicides, rapes, bomb threats, forgery, child molestation, bribery by government officials, altered prescriptions, mail fraud, terroristic threats, extortion, homicide, and identity theft, the fastest growing crime in the United States.

FORENSIC PHOTOGRAPHY

With the technological enhancements made to the Forensic Photography section in recent years, a more accurate name for the section is "Forensic Imaging."

Since 2001, the photo lab has recorded, processed, and produced images through digital means. The section assists crime lab scientists with the recording and enhancement of evidence such as: fingerprints, documentary evi-

dence, impression evidence like footwear and tire tracks left at crimes scenes, and fractured materials from hit and run scenes. The unit also assists law enforcement agencies throughout the state with surveillance recording enhancements to identify subjects in the commission of crimes who were captured on video. Imaging specialists completed more than 350 requests for service during FY'05.

Crime Lab Disciplines

Firearms Identification

Compares bullets and cartridge cases to the firearms from which they were fired; utilizes the National Integrated Ballistics Identification Network (NIBIN), monitored by the Bureau of Alcohol, Tobacco and Firearms (ATF).

Latent Prints

Collects, preserves, identifies, and compares fingerprints from crime scenes and physical evidence utilizing the Automated Fingerprint Identification System (AFIS).

Trace Evidence

Examines evidence, including fibers, hairs, glass, shoe and tire impressions, and other forms of trace evidence, assisting in determining if a suspect was present at a crime scene.

TOXICOLOGY

The Toxicology Section provides analysis of biological materials for alcohol, drug, and poison content. These samples may originate from either the state's Implied Consent Law or the Post-mortem Death Investigation Act. The section's toxicologists also assist during trials and hearings by providing professional, expert testimony, statewide.

The section ended the fiscal year with 24,002 cases completed and a backlog of 514 cases. The backlog was decreased by 1,200 cases from FY'04. Utilizing outsourcing to private laboratories, the remaining backlog will be eliminated prior to July 2006. Five new scientists and two new lab technicians also have been hired and are in the process of being trained.

The section has moved forward with the implementation of the LC-MS-MS, purchased in early FY'05 with a

National Institute of Justice grant. This is only one of a handful of instruments in the world that is dedicated solely to forensic toxicology analysis on a routine basis. Before the instrument could be used, a standardized library of drugs had to be developed and validated. New drugs will be added as they become available and unusual drugs will be included as requested.

During FY'05, the staff of the section also developed a complete standardized operating procedure (SOP) as well as other procedures and policies for quantitating and reporting drugs on the LC-MS-MS. This represents a major advance in the capability of the section to determine what types and concentrations of drugs the LC-MS-MS is able to analyze as well as the speed at which these analyses can be performed.

Crime Lab Disciplines

Questioned Documents

Using a variety of techniques, the service examines and compares documents for possible forgery. It also determines if a suspect is linked to documents key to an investigation.

Forensic Photography

Processes and prints crime scene photographs.

Implied Consent

Administers the state's breath alcohol testing program and provides training on the use of breath alcohol testing instruments.

TRACE EVIDENCE

Trace Evidence provides identifications, comparisons and analysis of hair, fibers, paint, plastic, glass, footwear, tire impressions, fractured materials, and other miscellaneous materials. Forensic analysis, interpretation, and courtroom testimony of scientists assigned to this

unit play a critical role in the investigation and prosecution of serious/violent crimes such as homicide, sexual assault, armed robbery, kidnapping and burglary. The timely analysis of trace materials is critical to the successful apprehension and prosecution

of criminals.

During FY'05, 494 requests were made for Trace Evidence services and 363 of those were completed. Fiscal year 2005 closed with a backlog of 105 cases, down from 150 the year before. (Backlog is defined as cases not complete within 30 days of request.)

A vacant scientist position was filled during the year and one more position was allocated in the FY'06 budget. The addition of the new staff will ensure a continued reduction in the number of backlogged Trace Evidence requests.

Throughout the year, the section

provided investigative leads to agencies in the form of vehicle year/make/model/color determinations from paint left on the clothing of hit and run victims. Examiners also assisted investiga-

tions through the evaluation of shoe and tire impressions left at crime scenes. One of the more high-profile case this year involved the use of hair evidence in the investigation of the disappearance of Jennifer

Wilbanks, "the runaway bride." Examination of clumps of hair found on a jogging path known to be frequented by Ms. Wilbanks revealed that the hair was cut and not forcefully removed. A micro-

scopic examination of the hair also revealed the hair was similar to that found in hair brush belong to Wilbanks. The physical evidence supported Ms. Wilbanks' final description of events.

LATENT PRINTS

The Latent Prints Section of the crime lab collects, preserves, identifies, and compares fingerprints from crime scenes and physical evidence. The unit also interfaces with the Automated Fingerprint Identification System (AFIS), a database that houses fingerprints of persons who have been arrested in Georgia. The interface with the AFIS system has led to 35 cold-case hits, resulting

in the identification of 35 suspects.

In FY'05, Latent Prints examiners processed 1,062 requests with an on-time rate of 99.9 percent (30 days or less).

The section underwent major changes during the fiscal year. The section manager and senior examiner both retired, leaving only one new examiner who just completed her training and is now in independent case-

work. A new section manager and another examiner will be starting in the new fiscal year.

During the year, the section obtained new high-tech equipment that enhances the development of latent prints, including a new Cyanoacrylate fuming chamber as well as a humidity chamber to enhance Ninhydrin development of latent prints on porous surfaces.

CHEMISTRY/DRUG IDENTIFICATION

The Chemistry Section received 34,092 requests for drug identification in FY'05. The discipline completed and released 33,698 requests within the same time period. Some of these completed services were backlogged cases from FY'04. The number of backlogged cases was dramatically reduced in the latter portion of FY'05, as additional staff was hired, trained, and began casework.

The Chemistry staff performed testing in 360 fire debris requests during FY'05, as compared to 467 requests

FY'05: Meth submissions	
2001	3,076
2002	4,529
2003	5,211
2004	6,938
2005	8,508
<i>Note: Statistics are based on a fiscal year calendar (July 1-June 30).</i>	

the prior year.

Methamphetamine submissions continued to grow in FY'05 for the sixth consecutive year. A total of 8,508 reports were issued with positive methamphetamine results. This represents a 23-percent increase in cases reported during FY'04. Much of the meth tested by the section is manufactured in clandestine laboratories across the state. In an effort to address the issue, DOFS provided additional training

to law enforcement officers. The Advanced

Clandestine Laboratory Training program provided instruction in numerous safety aspects of site safety assessment, including: child endangerment; mitigation and shutdown; the use of safety instrumentation; and the recognition and collection of evidence. Included in this hands-on training was an actual anhydrous ammonia vessel transfer, performed by all students, simulating a commonly encountered component found at clan lab sites. The training enabled GBI agents and

agents employed by the multi-jurisdictional task forces (MJTF) to safely address the growing meth epidemic. The week-long course was offered to law enforcement five times during the fiscal year and was taught at the Georgia Public Safety Training Center in Forsyth.

During FY'05, staff of the Chemistry Section increased the training provided to law enforcement in the area of marijuana identification. The two-day course provides officers who successfully

complete the training with the ability to test leafy materials for the presence of marijuana and present their findings in court. The additional training classes conducted in FY'05 were critical in allowing the Chemistry Section to meet the needs of its customers, by directing the limited resources toward testing of scheduled drug submissions. The testing of leafy materials by certified law enforcement has lead to quicker adjudicated cases.

FORENSIC BIOLOGY/DNA

In FY'05 the trend of increasing backlogs in both casework and database (offender DNA testing) continued. Casework requests totaled 3,888 and 14,504 offender samples were submitted. The casework backlog averaged 1,700 monthly. Most of this backlog, as in the past, consisted of sexual assault cases (rape kits).

Offender samples waiting to be tested averaged 6,100 monthly. Due to available federal DNA grants and potential for hiring additional staff, major strategic planning was initiated to incorporate new equipment, restructure operations, and outsource rape

kit screening to reduce backlogs in all areas of the section. The year concluded with 97,193 profiles in the DNA database or CODIS (Combined DNA Index System). During the year, CODIS solved 377 unsolved cases by linking offenders to the crimes.

Due to the GBI's participation nationally, there were 91 instances where a Georgia offender matched an unsolved crime in another state. Forty-eight crimes were solved in Georgia due to hits from offenders in other states.

MEDICAL EXAMINER'S OFFICE

FY'05: DOFS Cases Worked

Autopsy	2,329
External Exam	195
Limited Dissection	322
Consultation.....	1,606
Total.....	83,353

Note: The office also issued 727 Clayton County death certificates.

ENVIRONMENTAL Compliance

Safety, Health and Environmental Compliance has faced several challenges this fiscal year, including the retirement of the safety manager and the appointment of a replacement in March.

During the fiscal year, services were procured to provide an online Material Safety Data Sheet (MSDS) search. MSDS provide all the important information used in case of a chemical spill or accidental ingestion of chemicals. MSDS must be available to employees and

visitors upon request. The Web-based version will enable the agency to have the ability to look up a MSDS on the computer.

Accidents and injuries remain a concern. Incidents reported to Environmental Compliance during FY'05 include:

- Two falls
- Two lifting injuries
- Two injuries sustained from car accidents
- Two repetitive motion injuries
- Three chemical exposure injuries

- Six other events
- 11 cuts (Four involved blood-born pathogens.)

Throughout the year, safety audits were used to identify risks and hazards. These audits are performed monthly, semi-annually and annually. The inspections make sure that the GBI is in compliance with federal and state safety regulations. The Safety, Health and Environmental Compliance program will continue to emphasize accident prevention and training to ensure a safe workplace.

INFORMATION Management

During fiscal year 2005, several significant improvements were realized in the area of information management. The Laboratory Information Management System (LIMS) underwent two software revisions to implement enhancements and features suggested by DOFS staff.

In January, new hard drive storage arrays were purchased and installed to eliminate downtime that was being experienced as a result of aging equipment. A backup server and storage array were configured and installed to allow rapid resumption of operations in the event the main server at

the Headquarters' Lab failed. Each server has the capacity to store up to five terabytes of information. New desktop and laptop computers were purchased and distributed to staff so that all employees could perform their jobs as effectively as possible.

The Web-site used for report distribu-

tion was updated with a new feature that provides district attorneys and submitting agencies the ability to cancel services so that unnecessary work is not performed. LIMS Manager Kirk Canty was awarded statewide recognition for his innovative work on this project.

Pilot teleworking

projects were undertaken with great success for those individuals who have high speed Internet connections at home.

DOFS continues to be a leader in the area

of information management and shares its knowledge with other forensic laboratories around the country.

QUALITY Systems

The Division of Forensic Sciences continues to maintain a comprehensive quality assurance system that allows the laboratory to meet all of the requirements of two accrediting bodies. DOFS is accredited by the American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) Legacy and ISO/IEC 17025.

During FY'05, all laboratories with the system were involved in on-site inspections by ASCLD/LAB and subsequently achieved re-accreditation. The newly-opened Cleveland Lab was scheduled for its first internal audit to be conducted in July of 2005.

Cleveland also applied for an ISO/IEC 17025 site inspection to be conducted along with re-inspections of all other DOFS laboratories before the end of 2005.

Because DOFS has a proven quality system that meets the ASCLD/LAB Legacy and ISO/IEC 17025 requirements, the quality manual is sought after by crime laboratories throughout the world. Approximately 100 local, state, and federal laboratories have received copies of the DOFS Quality Manual over the years.

FACILITY Improvements

With the completion and staffing of one new laboratory in Cleveland and a new toxicology and morgue addition to the Southwest Regional Laboratory in Moultrie, laboratory facilities will meet regional needs.

The total forensic laboratory system now has eight locations strategically located throughout the state, with more than 250,000 square feet of modern scientific space.