

DISTRICT OF COLUMBIA DEPARTMENT OF FORENSIC SCIENCES



ANNUAL REPORT FISCAL YEAR 2014

Forensic Science Laboratory

Public Health Laboratory

Crime Scene Sciences Division

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To Our Stakeholders

INTRODUCTION

The District of Columbia Department of Forensic Sciences (DFS) became operational on Oct. 1, 2012 through the *DFS Establishment Act of 2011* to provide high-quality, timely, accurate, and reliable forensic science services with the use of best practices and best available technology; a focus on unbiased science and transparency; and the goal of enhancing public safety.

STRATEGIC HIGHLIGHTS

The DFS achieved accreditation for its Forensic Science Laboratory Division (FSL) under ISO 17025 in November 2013. Later in November, the Public Health Laboratory Division (PHL) received approval from the Centers for Disease Control and Prevention (CDC) to begin operations at the first Biosafety Level 3 laboratory in the National Capital Region. In January 2014, the CDC approved the PHL to be a Tier 1 laboratory for biological terrorism samples, one of only a handful of facilities in the nation capable of handling/testing these materials.

OPERATIONAL HIGHLIGHTS

The Crime Scene Sciences Division (CSS) is now responding to calls for service at crime scenes. Numerous standard operating procedures, internal policies, and memoranda of agreement (MOA) and understanding (MOU) were created in accordance with District policies. To date, the DFS is staffed at 89%. Grants totaling \$1,124,541 were awarded from various local and federal agencies for backlog reduction, capacity building, and testing services. The DFS held its first Science Advisory Board (SAB) meeting on April 18, 2014. The SAB meets four times per year and its nine members are noted experts in their fields, combining for hundreds of years of experience in forensic sciences, DNA, biology, chemistry, statistics, and engineering.

OUTREACH HIGHLIGHTS

DFS and its staff have been featured in stories by numerous media outlets, including the *Washington Post*, *New York Times*, *CNN*, *BBC*, *Canadian Broadcasting Corporation*, and *Deutschlandradio Kultur*. The DFS has provided scientific and technical education and training to agencies via cooperative arrangements, including the Metropolitan Police Department, U.S. Secret Service, and the U.S. Attorney's Office. Dozens of professional groups and international groups have toured the Consolidated Forensic Laboratory each year, and 2014 was no exception.

As DFS expands its services and support to our stakeholders, we continue to hold quality as a primary goal. We are hitting our stride as a "new" agency and look forward to serving our current stakeholders and engaging with new ones to help all of them make better decisions with improved science.

Sincerely,

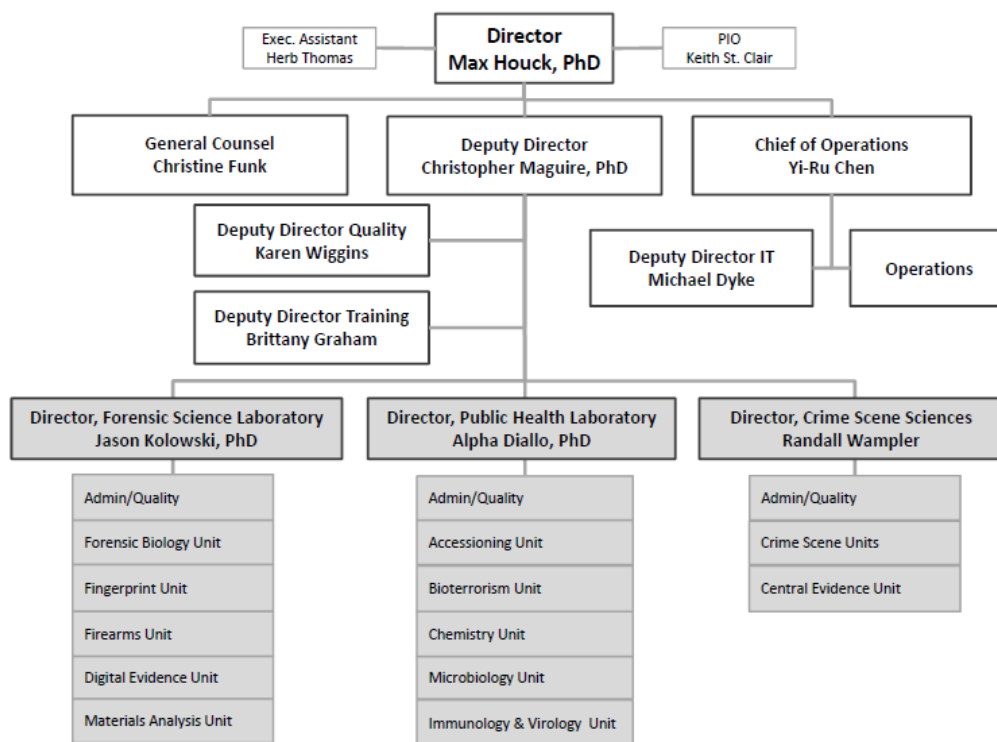


Max M. Houck, Ph.D., FRSC
Director, Department of Forensic Sciences
February 20, 2015

Strategic Summary

Overview

This report runs from Oct. 1, 2013 through Sept. 30, 2014. The DFS was designed by the Director to have four operational groups, three scientific and one business (see chart). The three scientific groups are the Forensic Science Laboratory (FSL), the Public Health Laboratory (PHL), and the Crime Scene Sciences (CSS); the business entity is the Operations Division (OPS). DFS has a Directorate level of management covering areas that affect the whole of DFS, consisting of the Director, a Deputy Director, and Deputy Directors for Quality, Training and Development, and Information Technology; a full-time General Counsel is also a part of the Directorate. The Executive Assistant works with the Director, Deputy Director and Chief Operations Officer, as does the Public Information Officer (PIO). Each Division is divided into Units lead by a Unit Manager.



As of January 27, 2015

Figure 1. DFS Organizational Chart

- The **FSL** is led by a Director and consists of four Units, Forensic Biology, Fingerprint Analysis, Firearms Examination, and Digital Evidence. A Materials Analysis Unit is in the works.
- The **PHL** is led by a Director and consists of Bioterrorism, Microbiology, Chemistry, Accessioning, and Immunology and Virology Units.
- The **CSS** is led by a Director and consists of Units of appropriate size to cover needed shift work; the

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CSS Director also oversees the DFS Central Evidence Unit (CEU). CSS Units will be added as approved to fulfill the requirement for District crime scene demands.

- The **OPS** is led by the Chief Operations Officer, who is the Department's liaison to the DC Council, Executive Offices of the Mayor and District agencies, and oversees the Department's budget, procurement needs, IT, human resources, resource allocation, safety program, and grants administration.

The DFS enterprise architecture mirrors the structure of the sciences at other agencies, such as the National Science Foundation, and groups evidence types by their source, providing potential for sharing of cognate knowledge. The architecture also provides for expansion or additions, and demonstrates clear paths of responsibility and promotion.

In its second year, DFS continued to hire staff, refined operational procedures and policies that align with District requirements for procurement, travel, training, resource management, and accountability. A third-year budget was developed along with training programs for each Division, along with a quality assurance program.

Key second-year issues for DFS in FY14:

1. **Achieve and maintain accreditation under International Standards of Operation (ISO) 17025.** DFS achieved accreditation for the Forensic Science Laboratory by the ANSI-ASQ National Accreditation Board/FQS Board and was awarded a certificate. All operational units have received accreditation.
2. **Provide a positive workplace environment for employees.** DFS established monthly public lecture series for DFS and neighboring agencies. The agency also provided training curriculum to ensure professional development.
3. **Improve evidence handling and processing at crime scenes and in the Consolidated Forensic Laboratory.** The Central Evidence Unit began the intake of evidence on behalf of DFS for the first time during FY14. The agency simplified and unified intake of items for analysis and enhanced evidence processing.
4. **Improve Forensic Science Laboratory services to stakeholders.** The agency improved the effectiveness of the Division, maintaining its current workload and working on backlogged cases. DFS also developed an automated workflow to process all known DNA samples. The agency also completed an assessment for Digital Evidence Unit services and determined that mobile device forensics was the primary need.
5. **Improve the effectiveness and efficiency of Public Health Laboratory services.** DFS performed outreach to District hospitals for awareness of PHL services. The agency also developed a plan to shift from the current laboratory information management system at PHL to conform to agency-wide systems.

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Operational Summary

DFS's Operating Budget for FY2014 was \$ \$13,267,629, a 37% increase from FY2013. DFS was staffed at 89 percent by the end of FY14 (total of 132 positions, 15 vacancies); a staffing complement of 137 total positions is anticipated for FY15. Numerous Standard Operating Procedures and internal policies were formulated and refined, and memoranda of agreement (MOA) and understanding (MOU) were created with various District agencies.

Grants totaling \$1,124,541 were awarded from various local and federal agencies for backlog reduction, capacity building, and testing services. The breakdown is as follows:

Grant	Source	DFS Recipient	Amount
Physical Evidence Recovery Kit Processing and Data Initiative	MOU w/ DC Office of Victim Services	FSL	\$186,109
Epidemiology and Laboratory Capacity for Infectious Diseases	CDC-MOU w/ DC DOH	PHL	\$31,275
Supportive Laboratory Testing in Public Health Areas	MOU w/ DC DOH	PHL	\$70,000
DNA Backlog Reduction	DOJ	FSL	\$438,971
Coverdell Forensic Science Improvement	DOJ-MOU w/ DC JGA	FSL	\$58,186
Public Health Emergency Preparedness	CDC-MOU w/ DC DOH	PHL	\$340,000

The emphasis on grants from FY14 forward will be to in-source, leveraging and enhancing capacity of the DFS to add greater value to its services and capabilities.

Crime Scene Sciences Division

For better or worse, most people's views on forensic science are strongly influenced by the entertainment media and television series such as the "CSI" franchise. On those shows, a crime occurs, evidence is collected and analyzed by great-looking people in great clothes, and the crime is solved—all within the program's one-hour running time.

So in the real world, when people think forensic science, they tend to think of Crime Scene Sciences. That DFS division has been training and certifying civilian scientists who analyze, collect, process, and preserve evidence in criminal cases in the District.

Working closely at first with MPD's Crime Scene Investigation Division, DFS scientists have "started to assume the lead at some of these crime scenes," said Jeffrey Cover, manager of DFS's Crime Scene Unit. "Our scientists must pass competency tests at every level."

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The DFS Establishment Act of 2011 transfers responsibility and authority for all formerly MPD forensic activities to the DFS, including crime scenes; further, the Act requires accreditation for all appropriate DFS activities, including crime scene work. This meant a wholesale change in processes, methods, and protocols to meet the proposed accreditation standards (ISO 17025).

The processing of vehicles for all types of physical evidence was also transitioned from MPD to the DFS-CSS in October 2013. CSS personnel began independently responding to some crime scenes in December 2014.

Forensic Science Laboratory Division

Forget, for a moment, about all the high-tech equipment in the Forensic Science Laboratory. What this DFS Division does is translate – turning science into something palatable for everybody who needs it.

“Our forensic scientists take physical evidence and turn it into information to help our stakeholders make better decisions,” said Dr. Jason Kolowski, who heads the Division.

The FSL staff uses fundamental scientific processes to examine and test evidence to answer: What is this? Where is it from? Whose is it? And how might it be important to a criminal investigation?

“We apply international standards, good laboratory principles and scientific knowledge,” Kolowski said, “one case at a time.”

One of the main goals for DFS for FY2014 was to improve service to FSL stakeholders. Its forensic scientists delivered.

Using FORESIGHT, the metrics of the FSL have been measured for FY13 and FY14. A report for FSL has been submitted to the FORESIGHT program; relevant indices are shown below.

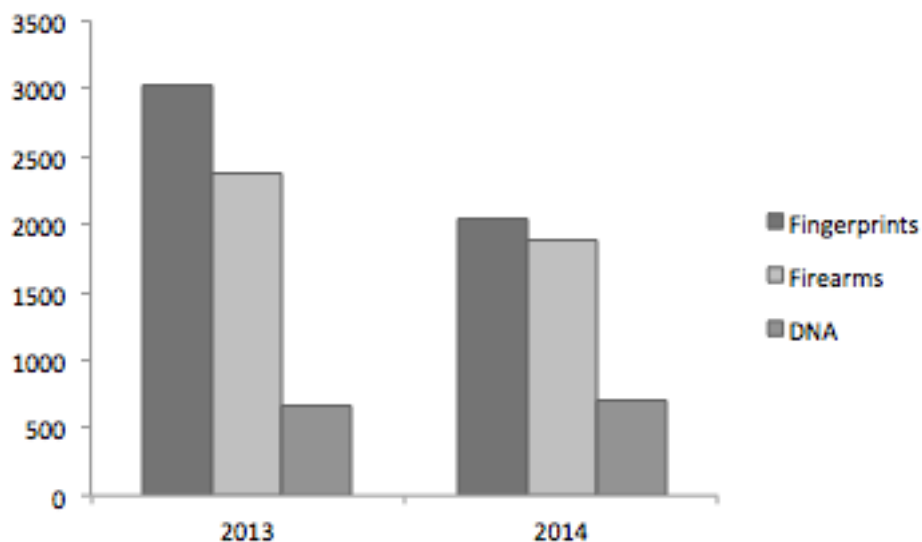


Figure 2. Case submissions to FSL

The gradual but significant reduction in submissions comes from increased interaction with our stakeholders, helping them to make better decisions and prioritizing more probative items of evidence. These discussions allow DFS to provide significantly more reports with quality results. Notably, submissions to the Forensic Biology Unit (DNA) have jumped from 330 in 2012 to 879 in 2014, an increase of 166%.

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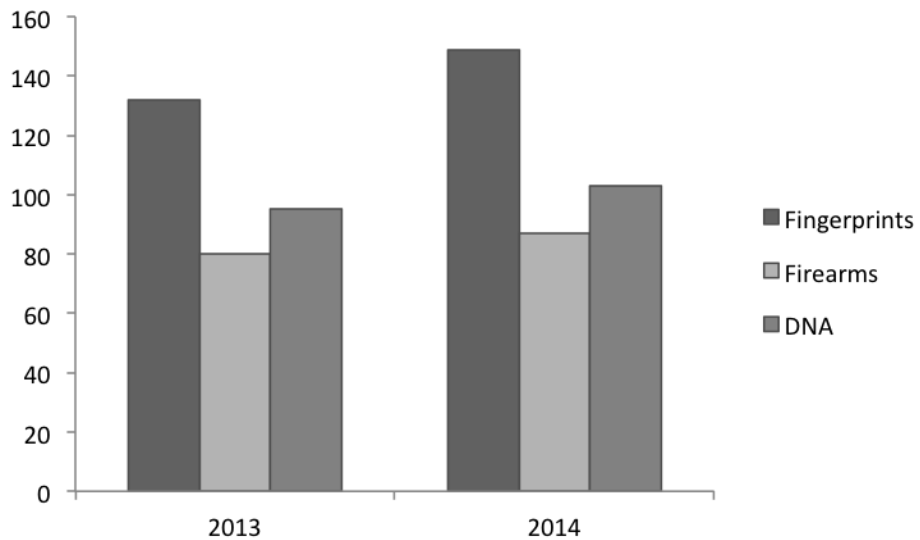


Figure 3. Turnaround time (receipt to report) for FY13 and FY14.

Turnaround times have held steady or increased somewhat from FY13 to FY14. This metric is the FSL's goal for FY14 while holding productivity at current or improved levels. Each Unit in the FSL met the targets set for productivity and the FSL is now operating at a better than average rate for reporting (Figure 4).

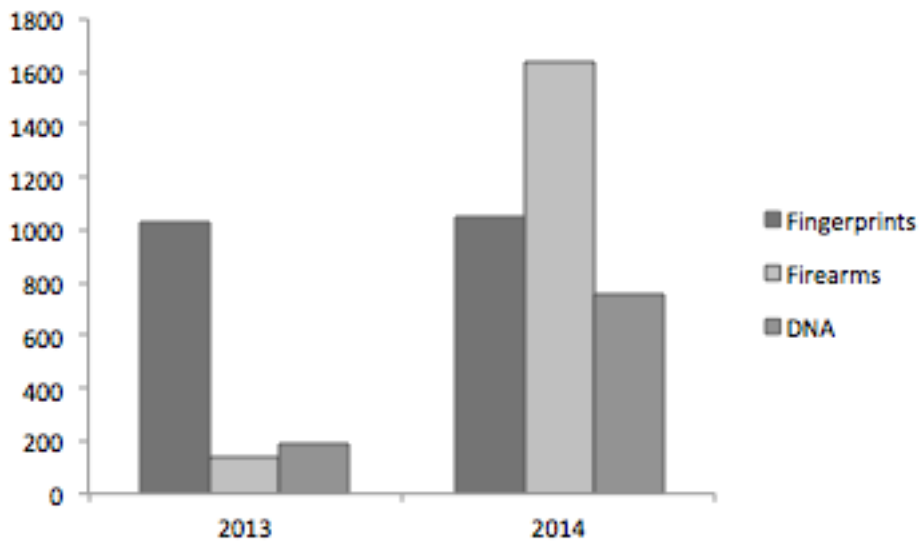


Figure 4. Reports produced for FY13 and FY14.

FSL will increase the application of technology to the Fingerprint Analysis Unit to help speed up turnaround time and increase reporting. Staff have increased productivity and reduced turnaround time significantly, from a high of about 175 days to less than 80 in one year. The Firearms Examination Unit has also reduced turnaround time to less than half from the start of 2014. Every Unit in the FSL met the productivity goal set for them this year.

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Public Health Laboratory Division

In the news in 2014 because of the Ebola outbreak that spread from west Africa to the United States, the District's Public Health Laboratory stands as the first line of defense protecting our nation's capital's residents and visitors by testing samples in a wide variety of materials for toxins, infectious organisms, and other threats to public health.

In Fall 2013, barely a year after the PHL came under the control of DFS, the District received approval from the Centers for Disease Control and Prevention to begin operations of the first Biosafety Level 3 laboratory in the National Capital Region.

That means the PHL now conducts biological analysis to identify materials that have the potential to pose a severe threat to public health and safety, including bubonic plague, the smallpox virus, and man-made toxins such as ricin and anthrax.

In January 2014, the PHL became a top-tier member of the CDC's Laboratory Response Network, joining 10 existing facilities nationwide as the front-line defense to respond to bioterrorism, chemical terrorism, and other public health emergencies.

"We can determine what agent a person has been exposed to," said Dr. Luke Short, Manager of the PHL's Chemical Terrorism and Analytical Chemistry Unit. "We can also do analyses of toxic chemicals for the Metropolitan Police Department in criminal cases, and have just started working with the Office of the Chief Medical Examiner to see whether deceased persons have been exposed."

A versatile facility, the PHL works with the city's hospitals and Department of Health to test for food illnesses and even helped the U.S. Secret Service by testing the food being served at the White House dinner celebrating President Obama's second inauguration.

The Public Health Laboratory conducted more than 8,300 tests in FY14, including the following:

Screening and Confirmatory Tests	3116
Reference Microbiology	764
Referred Isolates	794
8,359	
Proficiency Tests	264
Food Microbiology	2307
Clinical Microbiology Specimens	294
	Total 8,359

The PHL continues to improve its operations and services to the D.C. Department of Health and the region.

Outreach Summary

DFS, the CFL, and its staff have been featured in stories by numerous media outlets, including the *Washington Post*, *New York Times*, *CNN*, *BBC*, *Canadian Broadcasting Corporation*, *WRC-TV (NBC)*, *WTTG-TV (Fox)*, *Forensic Magazine*, *Legal Times*, and *Chemical & Engineering News*, among others.

The DFS has provided scientific and technical education and training to regional agencies via cooperative arrangements, including the Metropolitan Police Department, U.S. Secret Service, U.S. Park Police, U.S. Attorney's Office, Office of the Attorney General for D.C., and the U.S. Capitol Police.

Dozens of professional groups have toured the CFL, including the American Academy of Forensic Sciences, NASA, American Association for the Advancement of Science, American Chemical Society, the Department of Defense, the National Institute of Standards and Technology, U.S. Department of State, U.S. Department of Treasury, U.S. Secret Service, and many others.

More than a dozen international groups have toured the CFL, including professional representatives from numerous countries, such as Australia, Canada, China, Kingdom of Jordan, Mexico, Moldova, the Netherlands, Russia, Singapore, South Africa, United Kingdom, and Uzbekistan, among others.

Educational programs were offered to D.C. high school science students, and public tours conducted for interested D.C. and regional agencies. Also, local and regional universities toured the CFL and have discussed educational opportunities with DFS.

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Looking Ahead

In FY15, the DFS anticipates the pursuit of ISO 17025 for the PHL and the CSS Divisions, and a new Unit in the FSL, Materials Analysis. Further advances in process and workflow, improvement in service delivery, and additional opportunities for outreach and enhancement are expected in FY15.

Contact Information

Dr. Max M. Houck, Director	202-727-7370	max.houck@dc.gov
Dr. Christopher Maguire, Deputy Director	202-442-8058	christopher.maguire@dc.gov
Ms. Yi-Ru Chen, Chief Operations Officer	202-727-8588	yi-ru.chen@dc.gov
Mr. Keith St. Clair, Public Information Officer	202-727-0161	keith.stclair@dc.gov

Agency Information

District of Columbia Department of Forensic Sciences
Consolidated Forensic Laboratory
401 E Street SW Washington, D.C. 20024 www.dfs.dc.gov

