GOVERNMENT OF THE DISTRICT OF COLUMBIA
DEPARTMENT OF FORENSIC SCIENCES

Fiscal Year 2016 Performance Oversight Hearing

Testimony of
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Before the
Committee on Committee on the Judiciary & Public Safety
Council of the District of Columbia
The Honorable Charles Allen, Chairman

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Good afternoon Chairman Allen and members of the Committee on the Judiciary & Public Safety. My name is Jenifer Smith and I am the Director of the Department of Forensic Sciences. Thank you for inviting me to testify on behalf of Mayor Muriel Bowser in today's hearing to discuss the activities and accomplishments of the Department of Forensic Sciences in Fiscal Year 2016.

Mayor Bowser's administration remains committed to creating pathways to the middle class by investing in education, infrastructure, public safety, and people. The Fair Shot Budget for fiscal year 2017 (FY2017) was the first budget developed wholly under Budget Autonomy. For the first time since Home Rule was passed in 1973, the District was able to spend our local dollars without having to wait on Congress to pass the federal budget. This brings us one step closer to operating like the 51st state.

I am pleased to report on the progress that the Department of Forensic Sciences (DFS) has made over the past year utilizing the enhanced resources provided by Mayor Bowser in her efforts to provide safer streets for DC citizens and visitors. At DFS we are extremely fortunate to get to come to work within our "state of the art" Consolidated Forensic Laboratory. Our facilities are second to none providing exceptional laboratories and workspaces but they alone cannot accomplish the work of DFS. Our labs and offices are filled with capable and dedicated scientists and staff who strive daily to deliver high-quality and reliable forensic science services through the use of best practices and the best available technology to critical stakeholders. I would be remiss if I did not mention the women and men who have led their teams forward through necessary improvements to achieve many of our substantial accomplishments. This past year, I set key goals for myself, my executive team and my staff that we would: strengthen communication and collaboration between the Department and key stakeholders – while

maintaining scientific integrity and independence; ensure the workforce has the necessary training, tools and infrastructure to perform their duties efficiently and effectively; and conduct and deliver the highest quality testing and results. Finally, in stark contrast to previous DFS administrations, in the unfortunate event of a complaint, error, or misstep, we would report the details to our stakeholders, Science Advisory Board, the Mayor, the Council and the citizens of the District with honesty and transparency.

To meet these goals, I designed and completed an overhaul of the DFS organizational structure. Working closely with the DC Department of Human Resources we realigned and repurposed positions to restructure or to create new functional units. I ensured that all executive management positions were filled with qualified personnel.

Under the management of Chief Operating Officer Yi-Ru Chen, our Directorate Operations & Agency Management team has played a pivotal role providing new procedures and tools to help support the multiple changes that have occurred this year. Her team worked closely with DCHR to fill 59 vacancies since the beginning of FY16 always ensuring that our hiring practices encouraged appropriate recruitment, unbiased selection and efficient placement. DFS hired talented personnel reducing the vacancy rate from 42% in October 2015 to 23.6%; filling 169 of 221.25 FTEs.

The Forensic Technology Unit (FTU) supported the implementation and management of four (4) major software systems and administers six major databases for DFS. They manage several DFS Laboratory Information Management Systems (LIMS) such as JusticeTrax. The unit recently developed a customized Dashboard to track key performance indicators and workload measures and the overall vitality of the laboratory units.

An experienced team of in-house quality professionals and training specialists, led by Deputy Director Brittany Graham, provided oversight of all DFS units to ensure quality driven results and that DFS workforce is highly trained and skilled in delivering appropriate forensic and public health scientific programs. The Training program delivered over 2,849 hours of instruction, covering issues such as cognitive bias, quality assurance, as well as discipline specific topics for DNA, firearms, fingerprint examiners and public health lab scientists. Her team developed and delivered a seven week course to train new crime scene scientists on forensics collection and preservation techniques. The Quality Team successfully led the Department through six external audits of the Forensic Science Laboratory Division (FSL) and the Public Health Laboratory Division (PHL). All FSL units continue to maintain ISO/IEC 17025:2005 accreditation in critical disciplines. PHL successfully demonstrated compliance with the Centers for Medicare & Medicaid Services' Clinical Laboratory Improvement Amendments (CLIA) regulatory guidelines as well as CDC's Division of Select Agents and Toxins (DSAT). Additionally, Deputy Director Graham initiated several new educational outreach events such as "Classrooms to Careers" an immersive day at DFS with demonstrations for students from Marion Barry's Summer Youth Employment Program and tours for students with the DC Police Foundation's Public Safety Academy at Anacostia High School.

LaShon Beamon, DFS Public Information Officer administers several critical efforts to ensure DFS adheres to the tenets of transparency and good governance. She regularly updates the Open Government Website and uploads annual accreditation documents, audits, and various testimonies and financial data. She has dramatically improved the DFS social media footprint via Facebook, Twitter, Instagram and YouTube.

Rashee Kumar, DFS General Counsel co-chairs the DFS Labor Management Forum that was established with the assistance of the Federal Mediation and Conciliation Service to improve communications with the newly formed National Association of Government Employees (NAGE) Local R3-09. The forum has equal representation from NAGE and from DFS executive management. The group meets monthly to work cooperatively and collaboratively identifying workplace matters and jointly developing solutions to better serve DFS employees and the mission. This forum has assisted DFS with the implementation of new procedures such as the new 4 day/10 hour shift change for our Crime Scene Sciences Division.

Under the leadership of Director Karen Wiggins, DFS dramatically improved services in the Forensic Science Laboratory Division (FSL); re-initiating DNA testing in the Forensic Biology Unit (FBU) and dramatically increasing productivity in the Latent Fingerprint (LFU) and the Firearms Examination (FEU) units. FSL utilized FY16 supplemental funding for contractors to reduce case backlogs, increase entries and verifications associated with intelligence databases, and ensure efficient turn-around times.

Forensic DNA testing resumed on February 18, 2016 after an external audit confirmed compliance with the National DNA Standards. To date, FBU has revised over sixty (60) protocols to ensure consistency between procedures and to incorporate new technologies. The streamlining of processes, addition of new technology and funding for DNA outsourcing enabled DFS to increase the amount of DNA testing, decrease backlogs and provide timely results. Currently, the FBU has a backlog of 61 cases. In FY16, FBU received a total of 314 physical evidence recovery kits (PERK) from MPD. The average turnaround time (TAT) to process each kit in FY16 was 74 days - well below the SAVRAA requirement of 90 days. FBU processed 121 PERKS in house and 193 were outsourced. DNA testing was also conducted on 832

investigations that did not involve submission of a PERK. The majority of these cases (97%) were outsourced. TAT for these cases averaged at 71 days.

The Firearms Examination Unit (FEU) and the Latent Fingerprint Unit (LFU) also strategically utilized funding for contractors to reduce case backlogs and ensure efficient turn-around times in both units. At the beginning of the fiscal year, in October 2015, LFU reported 248 backlogged priority cases. That month, they reported out 113 cases. At the end of the fiscal year this unit had reduced their backlog to 16 cases. Throughout the year, LFU worked a total of 2,100 cases, averaging 175 cases/month with an average TAT of 10 days. Similar improvements have been gained in FEU. In November 2015, FEU reported out 10 cases. By the end of FY16, FEU had completed 486 cases, averaging 40.5 cases/month with an average TAT of 6 days.

All of the FSL units dramatically improved participation in three critical national intelligence databases: National Integrated Ballistic Information Network (NIBIN), Automated Fingerprint Identification System (AFIS) and Combined DNA Index System (CODIS). Their results provided invaluable leads to stakeholders. The statistics from January-December 2016 versus the same period in 2015 show the improvement: 3,758 NIBIN entries in 2016 versus 2,598 in 2015 led to 347 NIBIN hits vs.113 a year earlier. 7,822 AFIS entries in 2016 from 1,685 in 2015 led to 1,418 AFIS hits vs. 719 hits in 2015. CODIS entries 578 up from 41 have led to 193 hits vs. 35 in 2015.

In addition to achieving increased productivity, the FSL championed several outreach activities to enhance awareness of the changes being made at the agency; to strengthen communication– while maintaining scientific integrity and independence. FSL managers and staff members held regularly scheduled meetings with critical stakeholders to discuss case prioritization. They

conducted several training efforts for MPD investigators and attorneys from the Office of the Attorney General, Public Defender Service and the United States Attorney's Office.

The Crime Scene Sciences Division (CSS), led by Director Troy Kelly, initiated a major effort to civilianize crime scene response in the District following the Mayor's decision to return MPD officers to street duties. Resources were provided to hire additional CSS personnel for crime scene response and evidence processing into the Crime Scene Sciences Unit (CSSU). Currently, CSSU has 55 FTEs, with seven vacancies. These seven vacancies are currently in recruitment and DFS anticipates filling them in the third quarter of this fiscal year. Working closely with the Chief of Police, MPD and DFS merged crime scene operations in August, allowing the first 14 MPD officers to return to assignments in MPD Districts. In FY17, MPD provided one-time funding to allow DFS to hire 22 additional temporary Crime Scene Scientists. Ten of these temporary positions are vacant and are in recruitment process. DFS anticipates filling these positions in the third quarter of this fiscal year to achieve the full complement of 77 Crime Scene Scientists. New legislation allowed DFS to attract and hire retired MPD officers to fill senior level CSS positions ensuring retention of valuable crime scene experience. Since March 3, 2016, DFS has hired 6 retired MPD officers.

In FY16 CSSU personnel responded to and collected evidence from 2,950 scenes and this year they have responded to an additional 1,715 scenes. In FY16, the Central Evidence Unit, responsible for the secure intake, storage, and maintenance of evidence and property submitted to DFS, took custody of 89,509 items of evidence. In FY17, they have handled 35,751 items of evidence. Director Kelly has worked closely with the Office of the Chief Medical Examiner to establish our Mass Fatality Force Multiplier program, developed to support OCME with any mass fatality/casualty event with trained DFS personnel and equipment. If such an event occurs,

DFS personnel will join with OCME to support body removal, documentation, evidence collection, and victim identification. Forty-five (45) DFS volunteers participated in the first DC Mass Fatality exercise this past fall. We are looking to continue to support this effort, as an agency, for years to come.

Under the direction of Dr. Anthony Tran, the Department of Forensic Sciences District of Columbia Public Health Laboratory (PHL) conducts testing of public health significance. It is a small lab in comparison to those of our neighboring states. It offers a modest range of diagnostic and environmental tests and acts as the local extension of testing capabilities provided by the Centers for Disease Control and Prevention (CDC). In FY16 we tested 136 samples for influenza subtyping, eight (8) samples of suspected norovirus outbreaks, 163 samples for rabies. We tested 265 bacterial isolates, referred to us from hospitals, and tested 107 samples to determine if there were foodborne outbreaks with Salmonella.

Working closely with DOH we enhanced the District's mosquito surveillance program for the viruses that mosquitos carry, testing 1,282 mosquitos for West Nile, dengue, chikungunya, and Zika viruses.

PHL is a member of the National Laboratory Response Network (LRN) for the detection of bio and chemical terrorism. As a Tier I Laboratory, PHL has both the competency and capacity to test for Category A biological terrorism (BT) agents as well as detection of any emerging diseases. We have cross trained three scientists to perform testing for select agents and we are the single point of testing for suspect BT agents in our region. In FY16, the FBI submitted six environmental samples for testing. This team has also analyzed clinical samples to rule out the presence of select agents, testing that cannot be done at local hospitals. Three chemists are trained to conduct testing of human samples in our Tier 2 Chemical Terrorism (CT) exposure

laboratory. During FY16, a forensic chemist was added to this team and we now have a capability to test for illicit drugs.

This year we actively sought additional federal funding for laboratory improvements. Teaming with DOH epidemiologists, DFS applied for an Enhanced Laboratory Capacity for Infectious Diseases grant and received an award of $488,738 representing the highest award to date for DFS. This funding allows DFS to pay for laboratory supplies for the Advanced Molecular Detection project and fund three contractors to support expanding our current laboratory arbovirus testing and influenza surveillance and diagnostics.

As you may know the PHL has been in the news for re-testing efforts. When I first arrived in July of 2015, I knew that there were many issues that needed to be addressed throughout all Divisions of the Department. In FSL, CSS and PHL, I have addressed necessary management personnel changes, sometimes through removal, sometimes through hiring. I have dramatically improved outreach to and communication with our Stakeholders. I have worked diligently to secure more resources for DFS to include funding for additional training for employees. We have implemented a new LIMSs to track samples, results and evidence. I have focused on Quality. I elevated the responsibility of quality oversight and management to a Deputy Director, lifting it out of the respective Divisions and have instituted a new procedure to address internal and external complaints and ensured review of corrective actions and protocols by the Science Advisory Board (SAB). As of this date, all laboratory teams, within the DFS, practice quality assurance measures such as the validation of protocols, and use of proficiency and competency testing. Quality control samples, such as positive or negative controls, are embedded into our protocols to identify procedural mistakes. Such quality assurance and quality control measures are utilized every day throughout DFS to mitigate possible human errors.

In February 2016, PHL implemented testing to detect the Zika virus by reverse transcriptase real-time polymerase chain reaction (rRT-PCR) using a test developed by the Centers for Disease Control and Prevention (CDC). Prior to the implementation of this test, following quality assurance practices, PHL scientists validated the technique and successfully completed the CDC's "blind" proficiency test panel, meaning that the results for these test samples were not known to the PHL at the time the test was taken. After receiving CDC's permission, we began testing samples.

In addition to this PCR based test, there are two additional tests that can be used to determine if a person has been exposed to the Zika virus. The MAC-ELISA serology test looks for biological compounds called antibodies that are generated due to the patient's immune response to the virus. This is considered a screening test that, if positive, equivocal, or inconclusive, would be followed by a final test, called the plaque reduction neutralization test or (PRNT). The PRNT is used to attempt to confirm Zika virus.

In February, 2016 the CDC released the Zika MAC ELISA test for use by public health labs. This test was manufactured by CDC and approved for use by the Food and Drug Administration (FDA), under their Emergency Use Authorization, in response to the Zika outbreak that was facing the country. The national demand for testing was overwhelming the CDC and there was a need to move these tests to the satellite public health laboratories. Prior to our "in-house" implementation of the MAC-ELISA, it was taking approximately four weeks to receive DC patients' results back from CDC once we shipped the specimens to them. DOH epidemiologists continually inquired as to when PHL would bring the test on-line. The CDC's EUA protocol was a complicated ELISA procedure with many reagents and many procedural steps. Verification testing of the MAC ELISA and development of the PHL procedure was conducted

by a PhD scientist who is a CLIA certified Technical Supervisor. This scientist had successfully implemented many procedures in PHL since being hired in 2011. Prior to implementation of MAC-ELISA, PHL requested, received and tested the Zika proficiency test panel of samples. All quality control samples had worked correctly and the test's observed positives samples were reported as positive, and the negative samples were reported as negative. Upon receiving PHL's results, CDC stated that the answers for this panel were correct, and that PHL was now approved to utilize the MAC ELISA test to screen patients' samples. Two PHL analysts were cross-trained on the finalized protocol and their competency was determined by observation and successful completion of competency sample testing. Now that there were staff who had demonstrated proficiency testing using the CDC issued, FDA approved protocol for MAC ELISA, testing was initiated using an additional internal positive control. As testing proceeded, if the positive controls were positive and the negative control was negative, the results from the unknown samples were reported. If the controls did not work properly, then no results would be called. From August through November, eleven samples gave either an equivocal or a positive result and these samples were sent to CDC for confirmation by PRNT.

By December, Dr. Tran observed that the MAC ELISA testing had produced a higher than anticipated number of negative results and the quality controls were beginning to fail more regularly. He took a close look at the parameters of the test and discovered that there were calculation and formulation errors within our protocol. Despite these errors, the quality controls for the tests had previously functioned correctly for the majority of the test runs. After an extensive review, PHL made the decision to retest all Zika MAC ELISA specimens that were conducted from July 14 to December 14, 2016. To date, a total of 450 specimens from 424 patients have been sent for retesting. Some patients had two collection dates. 318 samples from

pregnant women were sent to CDC. The remaining samples from 75 non-pregnant women and 57 males were sent to other public health labs approved by the CDC to use the MAC ELISA. To date, PHL has received 275 results. The majority, 265, have been confirmed to be negative (158 pregnant females, 63 non-pregnant females, 44 males). One sample has been positively identified as evidence of recent Zika virus infection. The remaining nine samples have been reported by CDC as indicative of a recent infection with an unspecified flavivirus and are inconclusive as to the specific infecting virus. For epidemiological purposes, these results are treated as positive for Zika and the patient is entered into the US Zika Pregnancy Registry.

I would like to take the opportunity to clarify one of the inaccuracies that have been reported by one news outlet. On February 21, The Washington Post reported that "*Of the nine samples that have been returned as positive, eight are in a class considered likely to be Zika infections...*" That statement is not correct and it is critical to set the record straight. Nine samples have been reported as recent infection by an unspecified flavivirus, which means the scientists at the CDC laboratory cannot differentiate between the Zika virus and other flaviviruses such as the dengue virus. The epidemiologists at CDC and at DOH allow these patients to be placed into the US Zika Pregnancy Registry.

Since the discovery of these errors, several measures have been instituted into the PHL to ensure that newly added tests are performing optimally. PHL will conduct more extensive internal validation testing on all CDC issued protocols beyond what is recommended to verify that the tests work. Additionally, all protocols that involve a person embedding a calculation into a worksheet will be technically reviewed by at least one other individual for verification. Prior to implementation, all new tests will be technically reviewed and approved by a member of the DFS Scientific Advisory Board (SAB) who has the relevant expertise. Prior to my arrival, none

of our SAB members had a background in public health or any clinical laboratory expertise. In addition to proficiency test panels from CDC, PHL will run additional external proficiency test samples or participate in round robin testing with other public health laboratories prior to finalization of new test procedures.

To quote one of my favorite poets, Nikki Giovanni "*Mistakes are a fact of life: It is the response to the error that counts.*" Our response reflects our ethic and desire to be transparent. When Dr. Tran came to me concerning these errors, we could have responded by correcting the procedure and moving forward, deciding not to do any re-testing. Only he and I would have known the situation. We did not. We contacted our stakeholders at DOH. At that time, they could have suggested that it was not necessary to do the re-testing because CDC protocols were followed. They did not. They joined with us and worked diligently to provide critical information so we could begin to mitigate the situation. As we finalized our plans I contacted Deputy Mayor Donahue. He could have suggested it was not necessary to do the re-testing. He did not. As we received the initial results we contacted over 300 medical providers, set up conference calls and a contact email to ensure their questions would be answered. We went one step further, and working with the Mayor's staff, we held a press conference sharing this information with the public.

As mentioned, earlier in my statement, when I was first called to be the DNA consultant and was later hired to head up the agency, I understood the challenges this organization faced. I have made significant changes, as outlined above and will continue to push through challenges that remain. The only reason that the public knows about this is indicative of these changes; because I simply wasn't going to sweep this under the rug. I have placed top notch talent to lead our divisions and I will continue to be the reformer this agency needs.

Systemic change could not be possible without leadership that not only encourages it but embraces it. With that I would like to acknowledge Mayor Bowser and her staff for their continuous and generous support given to DFS as we strive to realize her vision of a Safer Stronger DC. Also, I would like recognize Deputy Mayor Donahue, his staff and our public safety partner Department leaders who continue to support DFS through thick and thin. I must also acknowledge the untiring efforts of the women and men who work within the offices and laboratories of DFS to make DC a safer city.

In closing, I'd like to thank you for your leadership and support. As always, we strive to operate with complete transparency, and I will ensure that the communication channels with your staff remain open and productive. This concludes my presentation. I am happy to answer any questions you may have.