District of Columbia DFS — Department of Forensic Sciences

Forensic Science Laboratory | Public Health Laboratory | Crime Scene Sciences

Fiscal Year 2018
Performance Oversight Hearing

Before the
Committee on the Judiciary & Public Safety
Council of the District of Columbia
The Honorable Charles Allen, Chairman
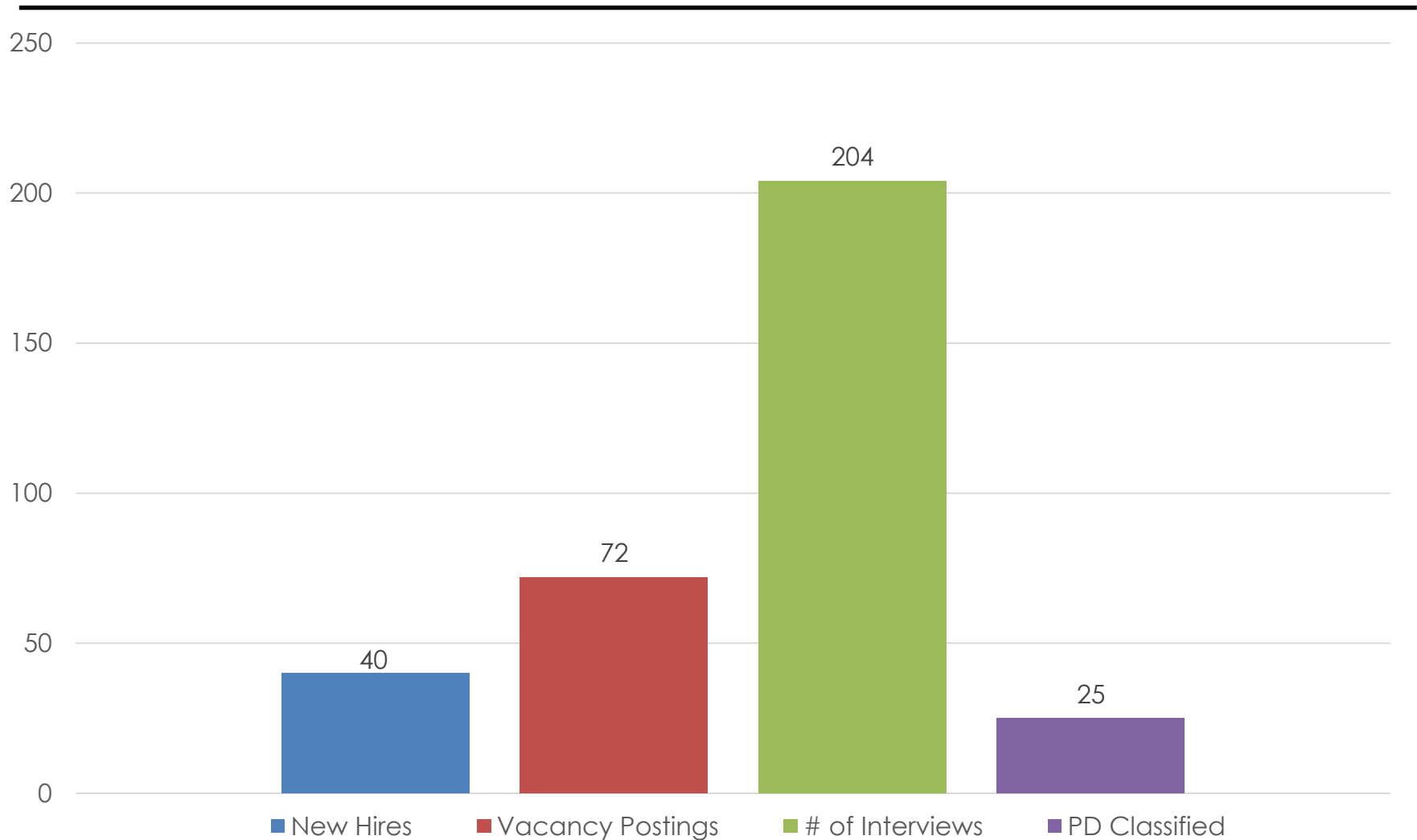
March 1, 2019

FY 2018
APPROVED OPERATING BUDGET

Description	FY 2018
Budget	$28,102,000
FTEs	219.2

Budget Component	Funding	FTEs
Local	$25,787,000	207
Federal	$ 523,000	5
Intra–District	$ 1,792,000	7.25
Total	**$28,102,000**	**219.25**
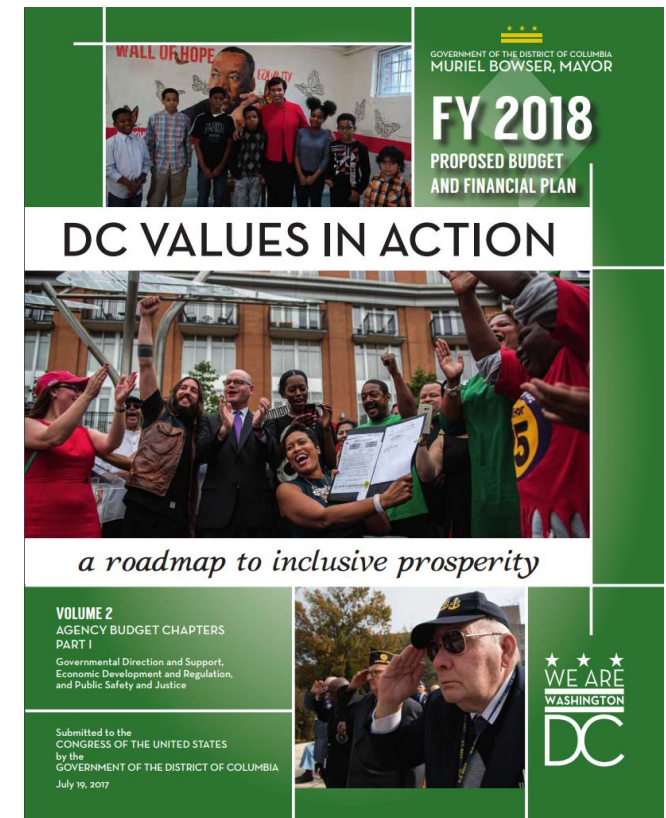
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INCREASED PURCHASING EFFICIENCIES

Five BPAs with CBEs
$202,655

Pie chart legend:
- Chemicals-Reagents: 26%
- General Supplies: 31%
- Laboratory Supplies: 39%
- PPE: 4%
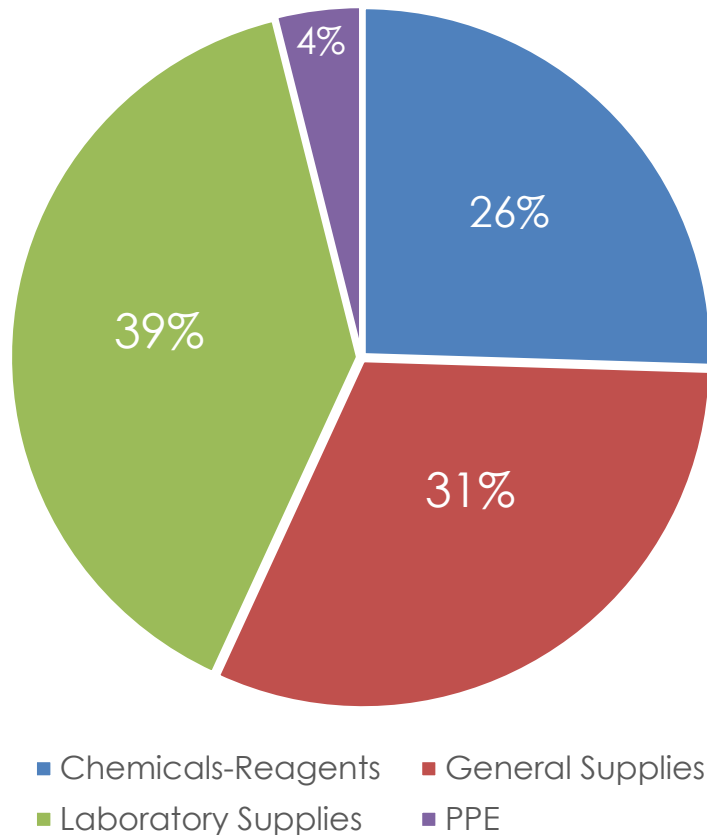
o Reduced the number of procurement actions from 364 (FY17) to 290 requisitions
  o Established Blanket Purchase Agreements for Lab Supplies, PPE, Chemicals, reagents and General supplies
  o Consolidation of 35 service contracts into 1 saved $166,000 and time.
o DFS spent $1,627,074 with small businesses that operate in the District, exceeding the DFS CBE goal by 111.09%.

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QUALITY CONTINUES

Forensic Science Laboratory (FSL)

- **ISO/IEC 17025:2005:** Re-accreditation of:
  - Firearms Examination Unit (FEU),
  - Latent Fingerprint Unit (LFU), and
  - Forensic Biology Unit (FBU)
  - Initial inspection of the Digital Evidence Unit

- **FBI Quality Assurance Standards for DNA Testing:** FBU Compliance
  - NO findings of non-conformity for the 3rd consecutive inspection

Public Health Laboratory (PHL)

- **Clinical Laboratory Improvement Amendments (CLIA):** Certification

- **Centers for Disease Control and Prevention's (CDC) Division of Select Agents and Toxins (DSAT):** Certification

- **ISO/IEC 17025:2005:** New accreditation
  - **Forensic Chemistry Unit** - Awarded certification in "*Qualitative Unknown Controlled Substance*" and "*Quantitative Measurement Controlled Substances (heroin only)*".

3400 HOURS
STAFF TRAINING

- From Training to Trial…Probabilistic Genotyping
- International Conference on Emerging Infectious Diseases
- Annual CODIS Conference
- 3-D Shoe Impression Photography and Casting
- Advanced Latent Analysis
- Agents of Bioterrorism: Laboratory Response Network Rapid Methods Training
- ANAB Assessor Course
- Applied Microbial Computational Genomics Workshop
- Evofinder Automated Ballistics Identification User Training
- Evolution of SNPs as a Forensic Marker
- Advanced Cell Phone Data Recovery
- Laboratory Methods for Detecting Rabies Virus

- Basic Bloodstain Pattern Recognition Course
- Berla iVee Vehicle Forensics Training
- Chesapeake Bay Division International Association for Identification (IAI) Conference
- Certification Prep IAI Crime Scene Analyst and Crime Scene Investigator Courtroom Testimony Techniques
- OCME Field Disaster Morgue Training
- EnCase v7 OnDemand Computer Forensics II
- FBI Post Blast Investigator School
- Forensic Analysis of Shooting Incidents
- Glock Armorer Course
- Collaboration in the Fight Against Fentanyl
- Difficult Injury Photography
- NIST Error Management Symposium
- Shooting Incident Documentation

International Association for Identification (IAI) Certifications of 20 CSSU personnel.
DFS now have 33 IAI certified Crime Scene Scientists.

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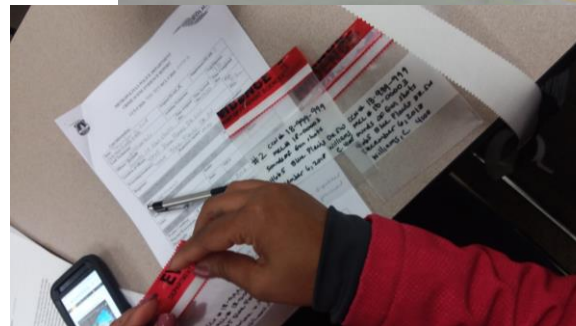DC MURIEL BOWSER, MAYOR

MPD ACADEMY CRIME SCENE TRAINING PROGRAM

DFS & MPD's Crime Scene Investigations Division trained 194 **MPD** personnel in crime scene collection techniques

- o 109 Reserve Crime Scene Search officers
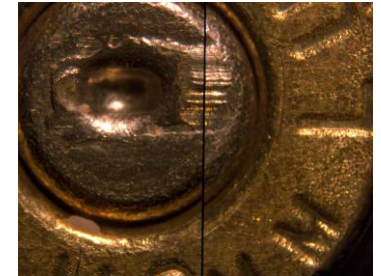- o 85 new recruits

Topics Covered

- o Overview of DFS History and Capabilities
- o Crime Scene Basics
- o Review of MPD General Order
- o DNA Overview
- o Latent Fingerprint Overview
- o Crime Scene Diagramming – lecture & practical exercises
- o Crime Scene Photography
- o MPD Log books, Forms, Evidence Packaging and Submission
- o Report Writing
- o Written Exam & Mock Crime Scene/Scenario

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FORENSIC SCIENCE LABORATORY
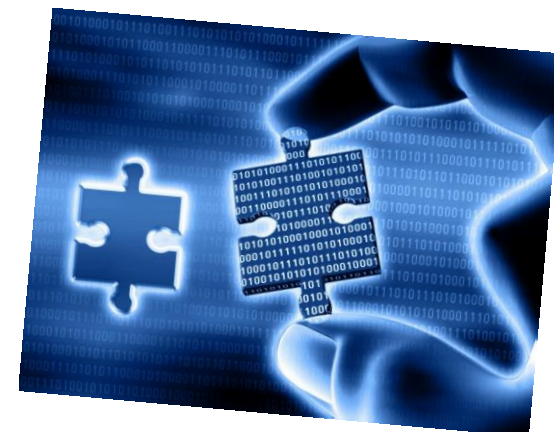
Forensic Intelligence Unit

Firearms Examination Unit

Forensic Biology Unit

Latent Fingerprint Unit

Digital Evidence Unit

FY18 FSL
KEY PERFORMANCE INDICATORS (KPIs)

Key Performance Indicator	Program Responsible	FY 2018 Q1	FY 2018 Q2	FY 2018 Q3	FY 2018 Q4	Target
Percentage of priority cases as designated by the contributor and marked in LIMS completed within 60 days from the date the analyst was assigned the case.	FSL - **FBU**	100%	100%	100%	98%	90%
	FSL - **DEU**	100%	100%	100%	100%	90%
	FSL - **FEU**	100%	100%	100%	100%	90%
	FSL - **LFU**	100%	100%	100%	100%	90%
Percentage of requested homicide cases completed within 60 days from the date the analyst was assigned the case.	FSL - **FBU**	100%	100%	95%	100%	90%
	FSL - **DEU**	100%	100%	100%	100%	90%
	FSL - **FEU**	96%	95%	100%	100%	90%
	FSL - **LFU**	100%	100%	100%	100%	90%

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FIREARMS EXAMINATION UNIT (FEU)

o Completed 767 cases with an average turnaround time (TAT) of 4.25 days.

o Had an average backlog of 701 cases at the end of FY18.

o Conducted 1,981 test fires of weapons received by DFS.

o Completed all Homicides and Priority Cases within 60 days (last 2 quarters of FY18)

CRIME GUN INTELLIGENCE CENTERS
CONNECTING THE DOTS

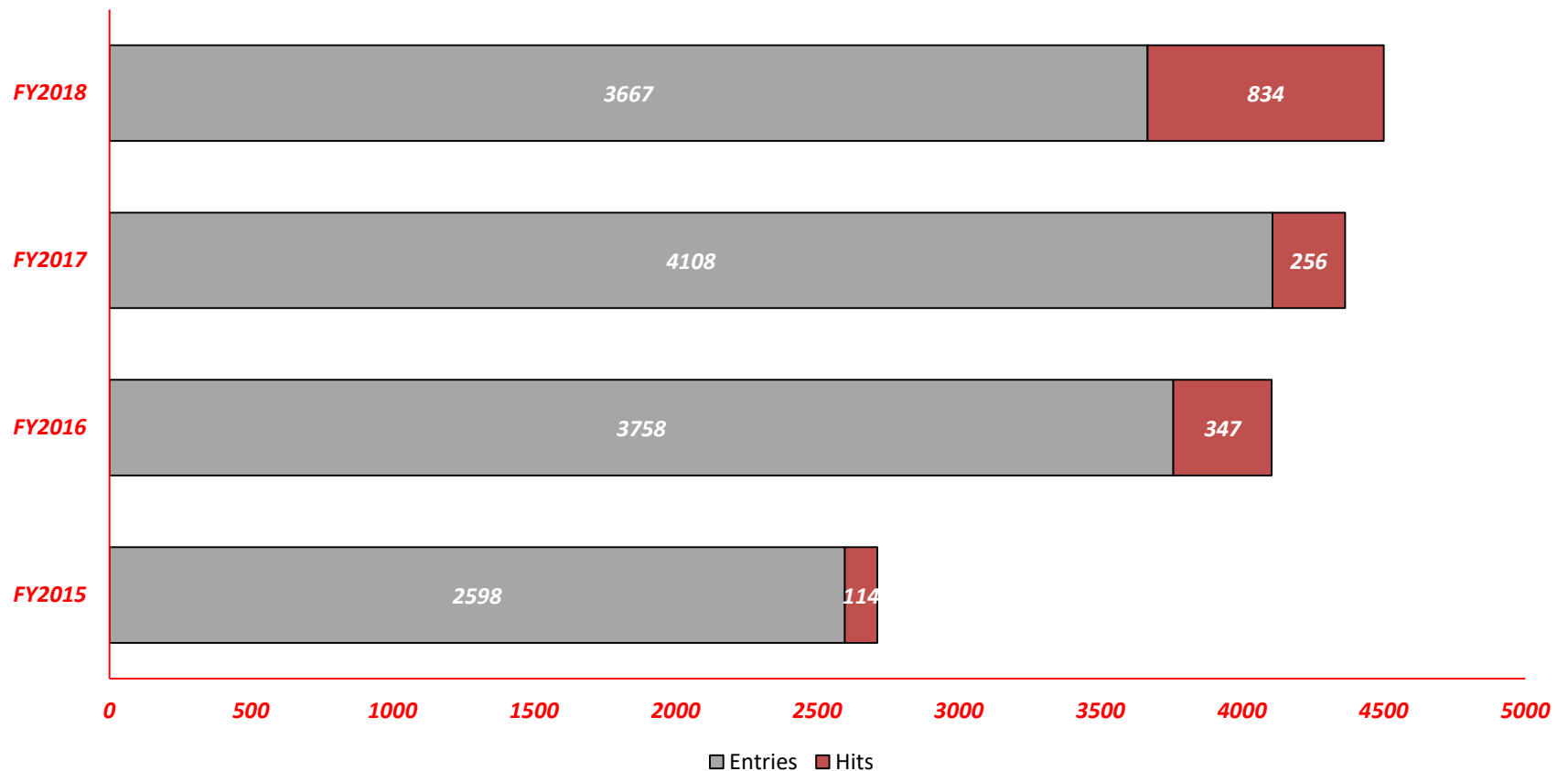A project of the National Resource and Technical Assistance Center for Improving Law Enforcement Investigations

In FY17, FEU was sub-awarded a Crime Gun Intelligence Center (CGIC) grant for approximately $500,000 to; help streamline processes for the National Integrated Ballistic Information Network (NIBIN), and to support
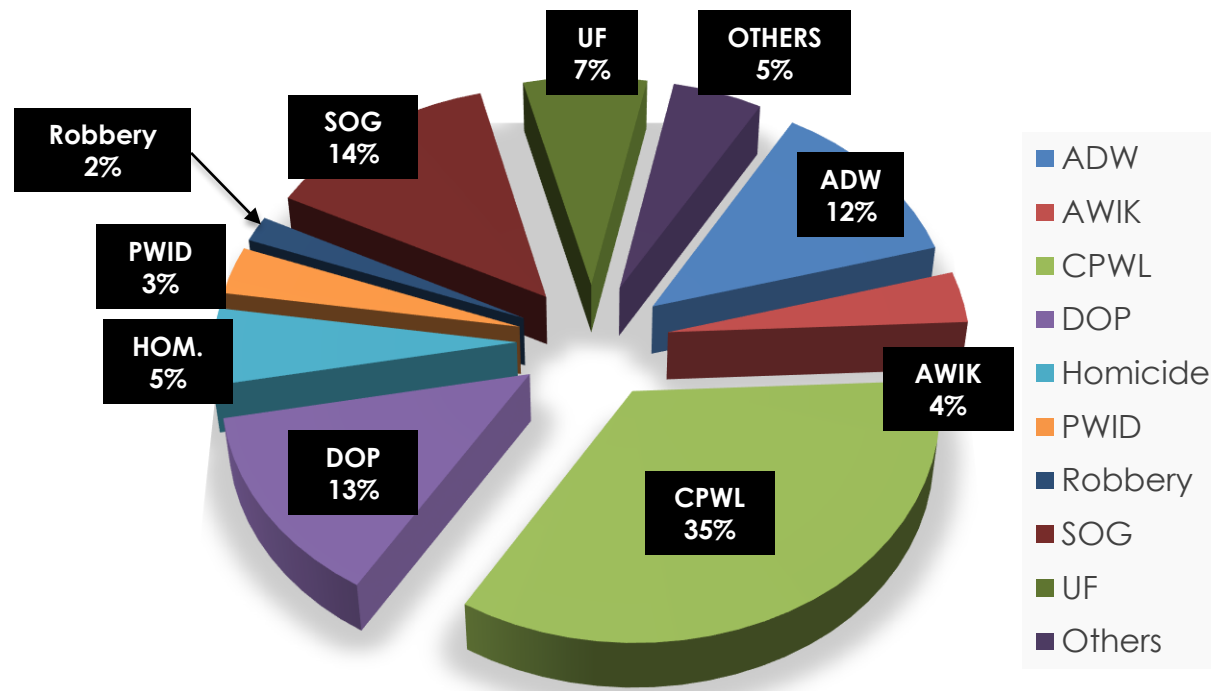
o Two (2) NIBIN Technicians
o Two (2) Firearms Examiner (contractors)

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FORENSIC INTELLIGENCE (NIBIN)

FEU – National Integrated Ballistic Information Network (NIBIN)

FY	Entries	Hits
FY2018	3667	834
FY2017	4108	256
FY2016	3758	347
FY2015	2598	114

Entries ■ Hits

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FY18 NIBIN IMPACT

- Of the 834 NIBIN Hits, 93% link MPD cases and 7% link MPD cases to cross-border jurisdiction.
- Of the MPD cases, 59.3% Hits link to *Sound of Gunshot/Destruction of Property and* 40.7% Hits link to other MPD Cases (Homicides, Assaults Firearm Possession Offenses).
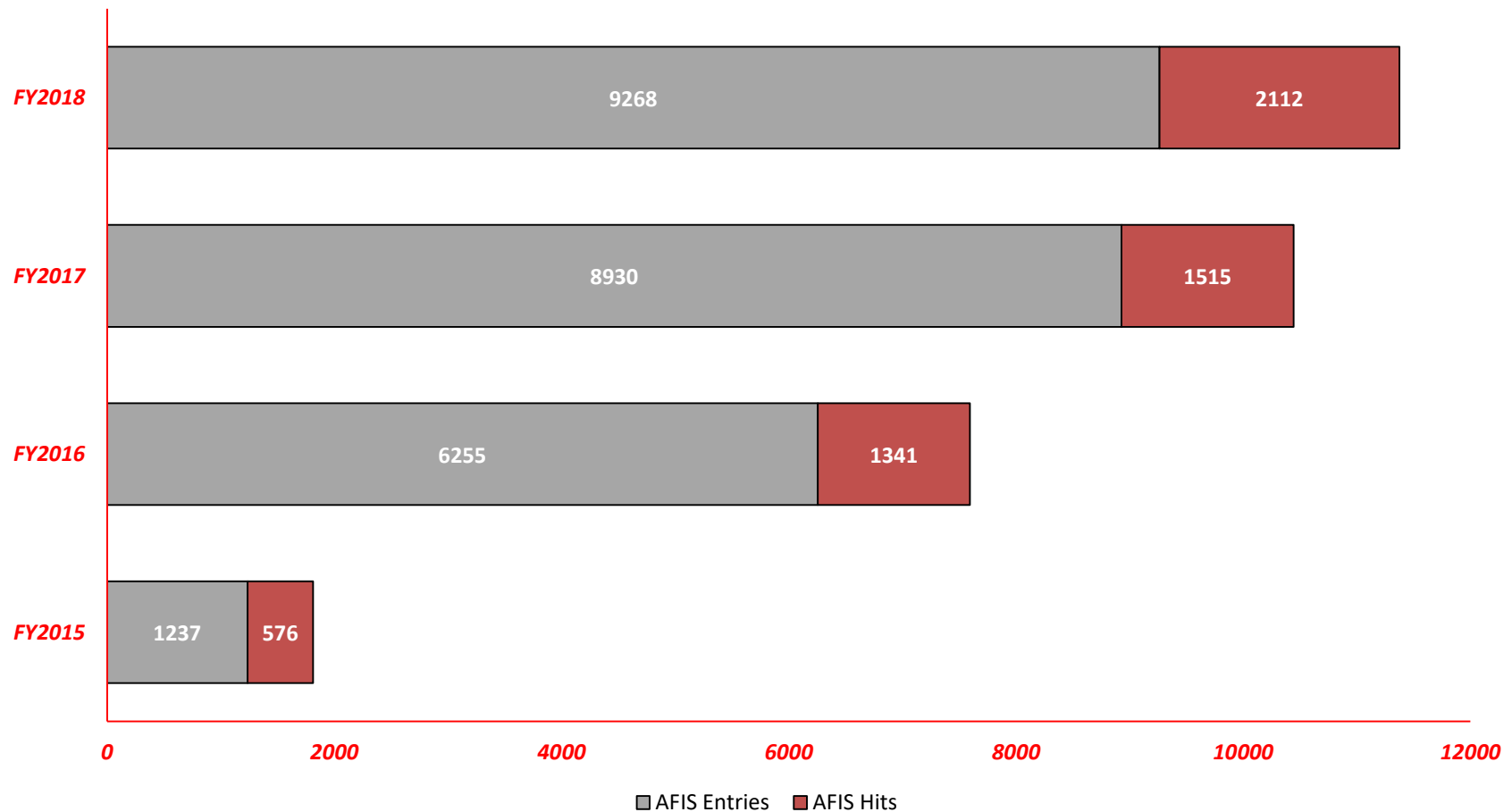
LATENT FINGERPRINT EXAMINATION UNIT (LFU)

- Completed 2,972 cases
  - Increased the number of cases worked by DFS staff vs. contractor
- Had an average TAT of 11.25 days.
- LFU has no current backlog
- KPIs: Completed all Homicides and Priority Cases within 60 days

TOTAL REQUEST		
YEAR	Number of service requests completed by DFS LFU Staff	Number of service requests completed by Contractors
2016	778	1217
2017	1155	1016
2018	1520	1270

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AFIS IMPACT

FY18 AFIS Identification/Offenses

Legend:
- Death (HO/DI/10-50 F/10-50 Hit and Run/ Suicide) — 8%
- Assaults (AWIK/ADW/10-50 Injury) — 12%
- Property Crimes (BI, BII, UE, DOP/Thefts) — 24%
- Sex cases — 1%
- Gun cases (CPWL, FIP, UF/UA) — 7%
- Carjacking (RSA I/L,UUV) — 28%
- Robberies — 17%
- Other (Fraud/PWID/Not provided, Arson) — 3%
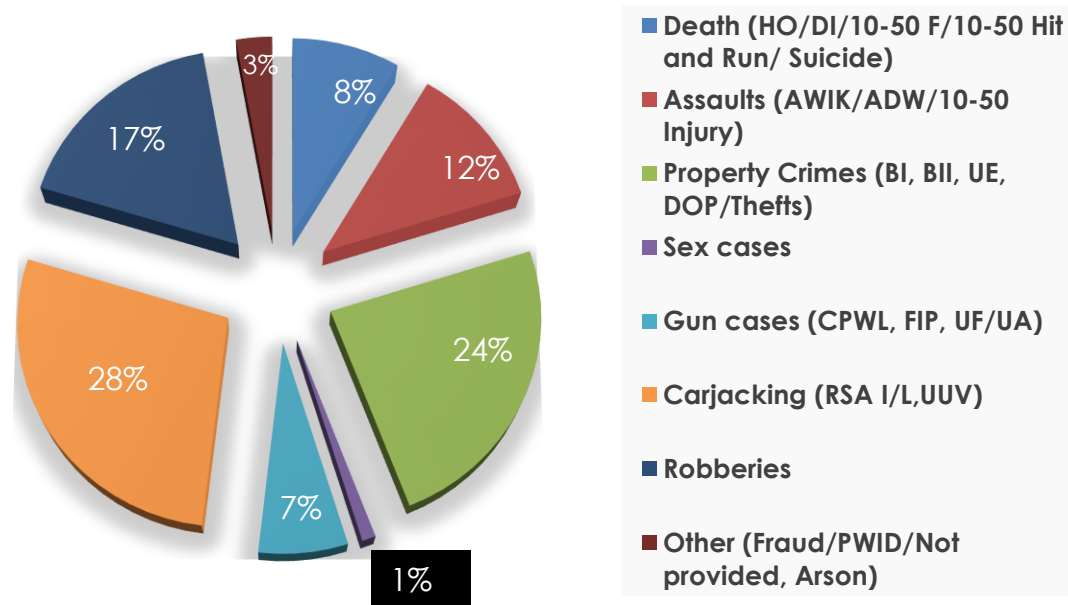
Of 1,362 Latent identifications, more than 70% had a criminal justice impact by leading to an arrest, confirming an arrestee or providing an investigative lead.

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Sexual Assault Victims' Rights Amendment Act (SAVRAA)

o   FBU Received 268 sexual assault kits for testing.

o   Average turnaround time was 64 days
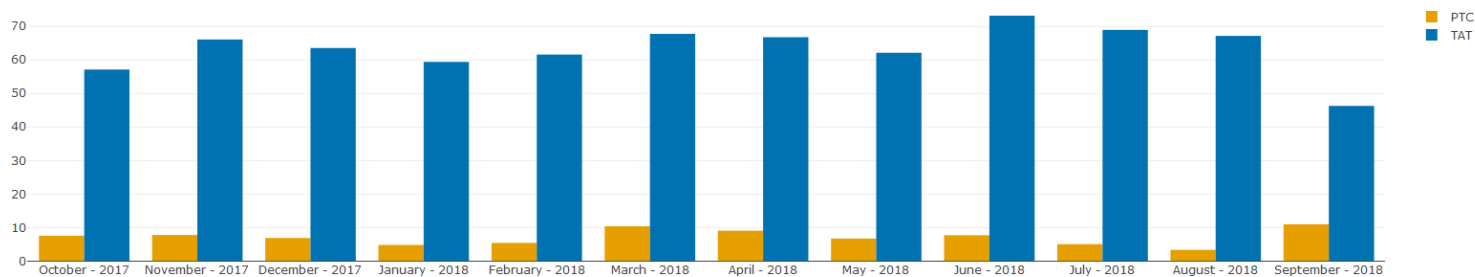
o   98.5% of kits (264) were completed within 90 days. However, due to the inability to receive permission to consume from attorneys, four kits exceeded the 90 day TAT outlined in the Sexual Assault Victims' Rights Amendment Act (SAVRAA), varying from 98 days to 301 days.

o   The average permission to consume delay was 8 days, ranging from 0 days to 265 days.

FBU continues to operate without any backlog of sexual assault kits.

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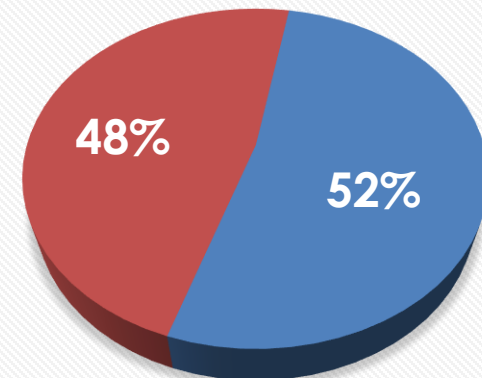DC MURIEL BOWSER, MAYOR

FORENSIC BIOLOGY UNIT (FBU)

- DNA testing was conducted on 1302 additional cases with an average turnaround time of 35 days
    - Of these cases, 657 were processed by external laboratories; however, 645 cases were handled internally.
- More firearm related cases worked in-house by DFS in FY18
- **Increase in interpretable results is due to DFS's use of mixture interpretation software**
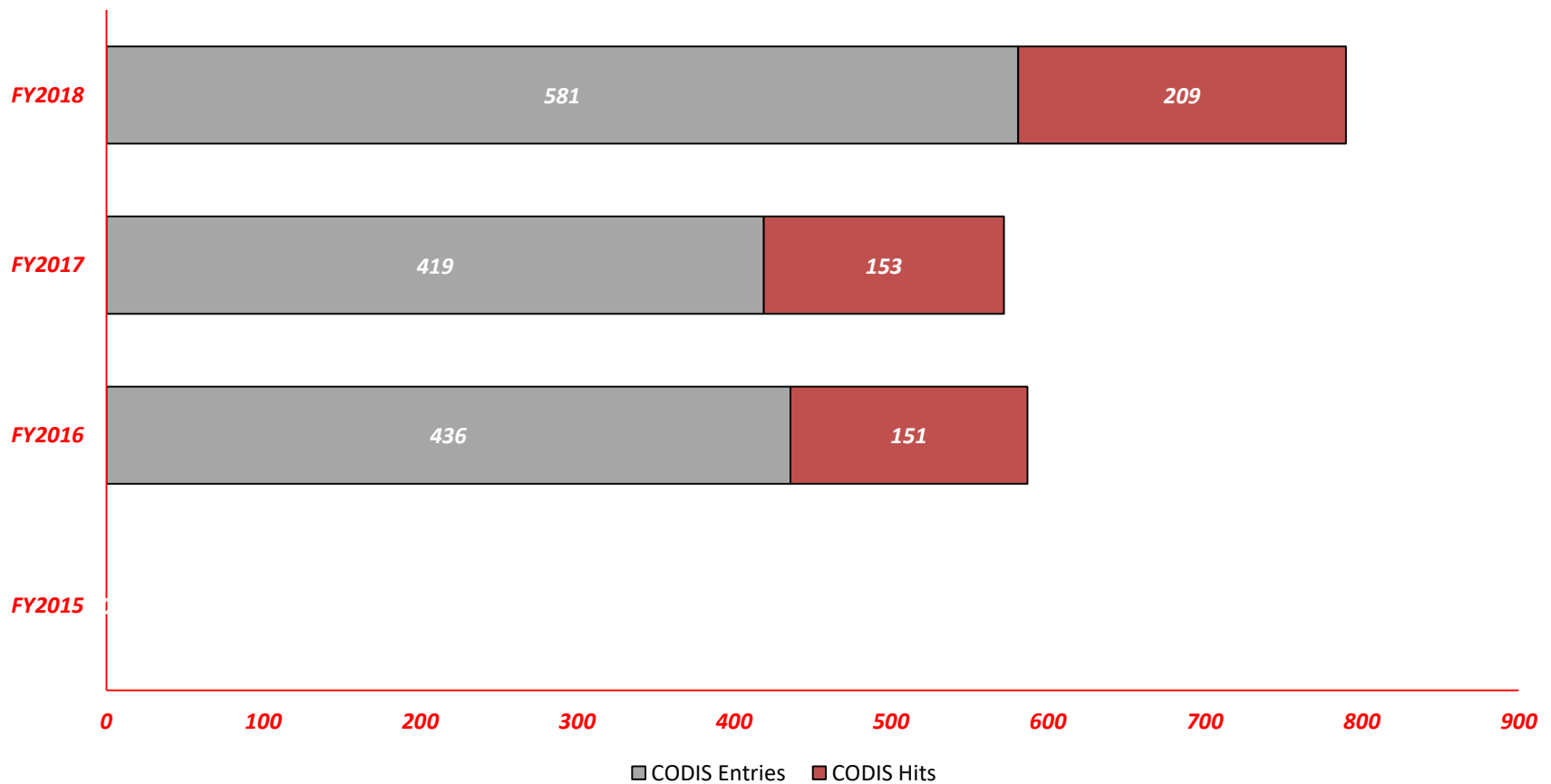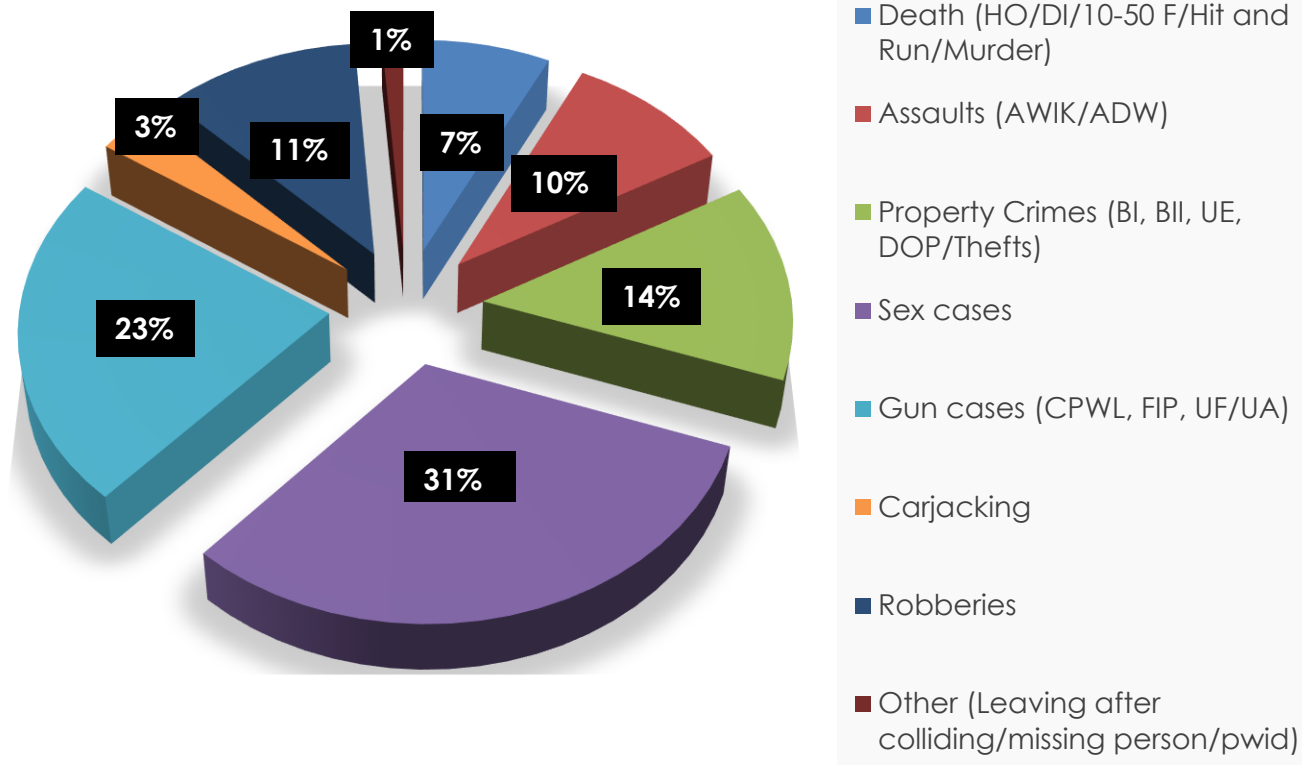
■ Interpretable
■ Uninterpretable

FY17 (277)

39%
61%

FY18 (367)

48%
52%
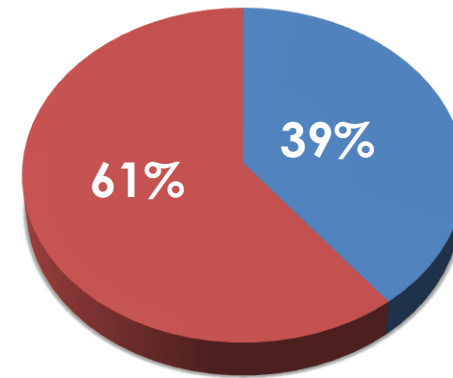
FORENSIC INTELLIGENCE (CODIS)

FBU – Combined DNA Index System (CODIS)

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CODIS IMPACT

Legend:
- Death (HO/DI/10-50 F/Hit and Run/Murder)
- Assaults (AWIK/ADW)
- Property Crimes (BI, BII, UE, DOP/Thefts)
- Sex cases
- Gun cases (CPWL, FIP, UF/UA)
- Carjacking
- Robberies
- Other (Leaving after colliding/missing person/pwid)

Pie chart values: 1%, 3%, 7%, 10%, 11%, 14%, 23%, 31%

Of 329 CODIS Hits/Matches, More than 90% had a criminal justice impact by leading to an arrest, confirming an arrestee or providing an investigative lead.

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DIGITAL EVIDENCE UNIT (DEU)

DEU CASEWORK		
YEAR	CASELOAD	TAT
2017	333	5 days
2018	636	11.25 days

o Had an average TAT of 11.25 days.

o Has no current backlog

o KPIs: Completed all Homicides and Priority Cases within 60 days

Technical Highlight

DEU acquired the capability to unlock iPhones, second laboratory in the country to acquire ability. This capability has allowed access to data previously unattainable.

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CRIME SCENE SCIENCES

CSS- FY18 METRICS

Measure	FY 2016	FY 2017	FY 2018
Number of evidence items received (CEU)	89546*	88683	74360
Number of crime scene service requests (CSSU)	5414	7844	9227

*Data was recorded in FY 2016 as "CSS Items Processed"

- Conducted **9227** service requests that included responding to & processing of **5879** crime scenes
- Average response time to scene is **27** minutes
- Report avg. TAT average is **26** days a decrease from 54 days in FY17

Service Request Type	FY18 Total
Scene Attendance	5879
Vehicle Processing	804
3D Scene Post-Production	412
Autopsy Evidence	436
Chemical Lab	1696

DFS FORCE MULTIPLIER

DFS & OCME Training Series

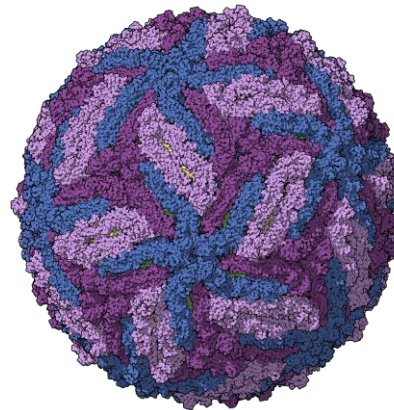| Event	Dates
Fatality Management Operations Center Functional Exercise	May 8, 2018
Mass Fatality Management Disaster Victim Identification Symposium	June 7, 2018
Victim Identification Center/Family Assistance Center Full-Scale Exercise	June 27, 2018
Field Morgue Exercise	July 19, 2018

PUBLIC HEALTH LABORATORY
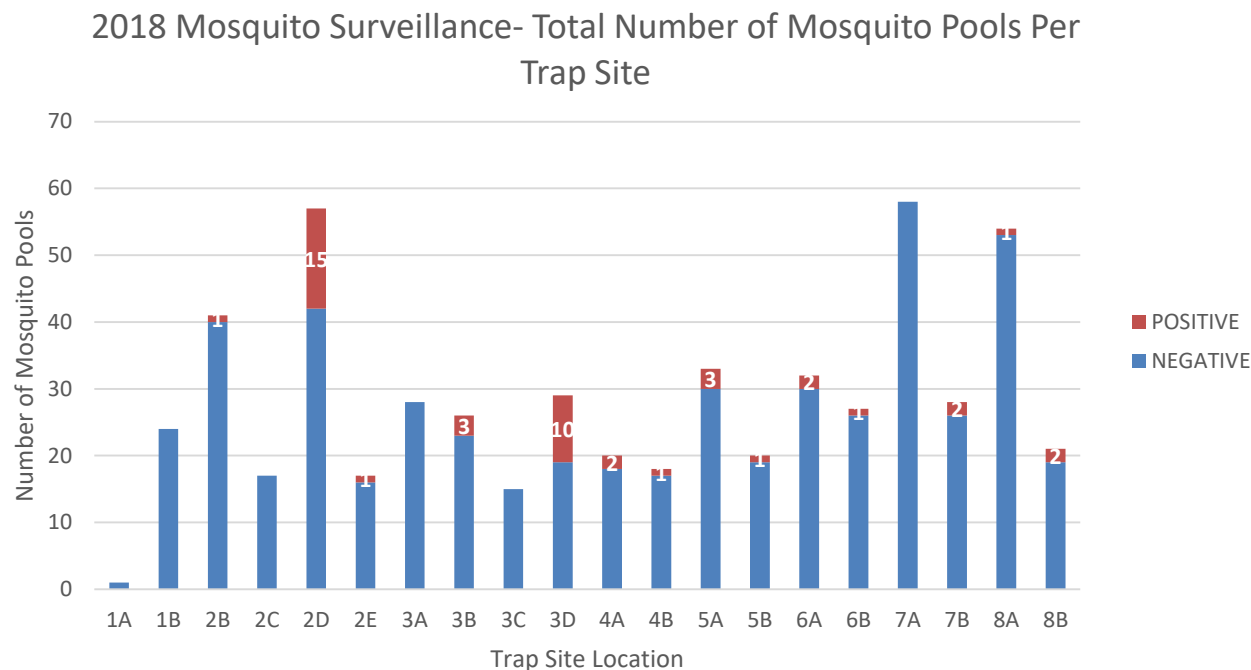

Microbiology Unit
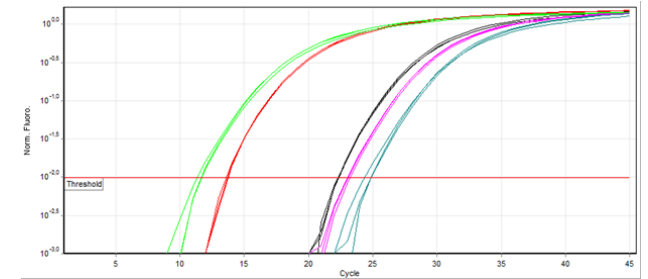
Molecular Diagnostics Unit

Chemistry

Virology & Immunology Unit
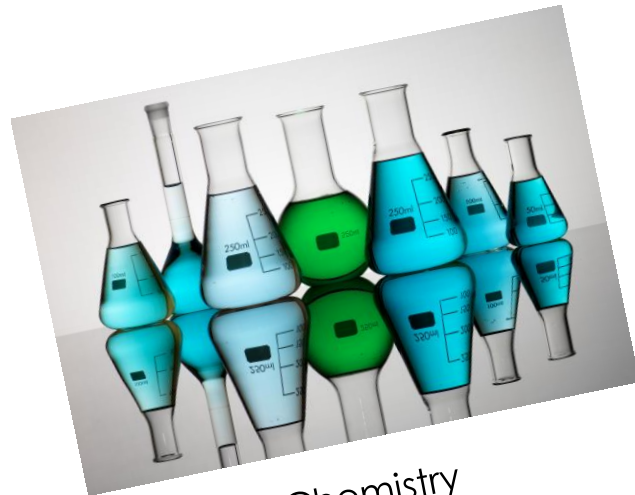
Accessioning Unit

MOSQUITO TESTING

2018 Mosquito Surveillance- Total Number of Mosquito Pools Per Trap Site

o Increase in number of pool submissions

o Improved method-more sensitive, high-throughput

o 566 pools,
   o 45 positive for WNV (8%)
   o 0 positive for Zika

RABIES TESTING

o Renovation of BSL3 to allow necropsies

o Reduced TAT for rabies testing to 24 hours

o PHL tested 243 samples, resulting in 14 animals positive for rabies, including 13 raccoons and one bat.
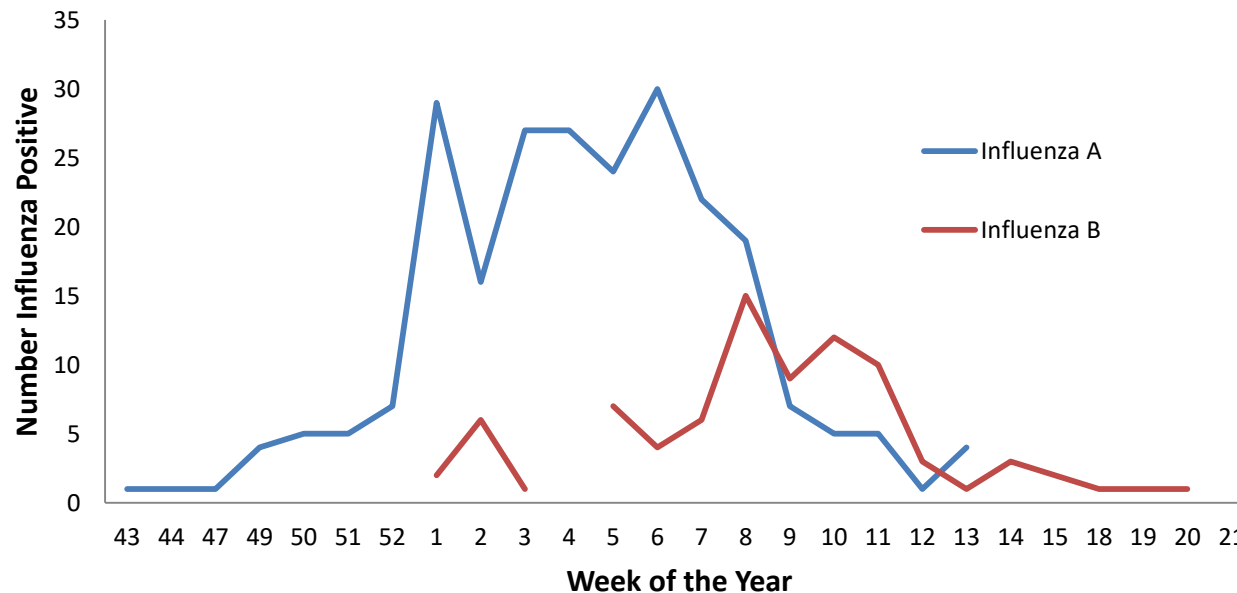

FY2018 Rabies Positive Cases in D.C.

Legend
- Raccoon
- Bat
- Ward from 2012

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Health Regulation & Licensing Administration

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2017-2018 INFLUENZA SEASON

## Improved & Increased District Influenza Surveillance

o Increased testing capacity in FY18

o Increased participation in CDC surveillance

   o Increased outreach to local hospitals to get surveillance samples yielded **558** specimens tested in FY18, vs. **80** in FY17 (700% increase)

2017-2018 Influenza Viral Screening, District of Columbia

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BIOTERRORISM LABORATORY RESPONSE NETWORK (LRN-B)

Provide timely testing of pathogens that provide public health significance
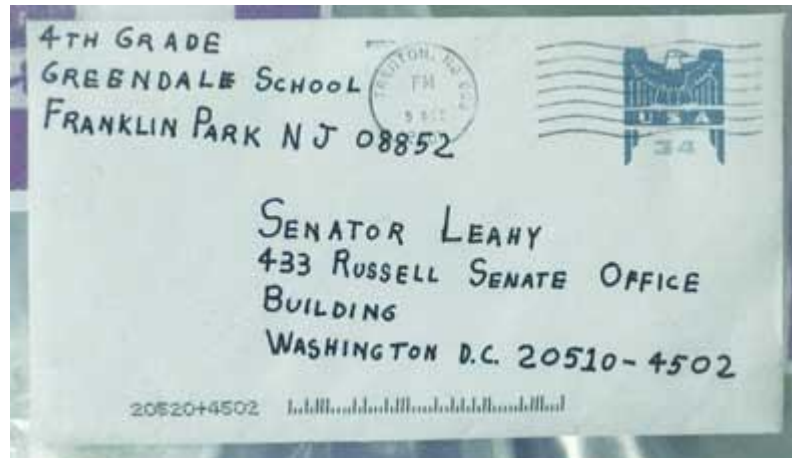

Responded to Increase in Sample Submission

o 23 FBI submissions received & results reported in 24 hours

o 68 specimens tested (estimated 782 hours worked)

o This is an increase of nearly 400% from FY17 (18 specimens)

FORENSIC CHEMISTRY

- o Establishment of Controlled Substance Testing in the District
  - o Performed **809** exhibits for USAO/NSID/OCME/DOC
- o New Drug Discoveries
  - o Four (4) new synthetic cannabinoids
- o CDC Award
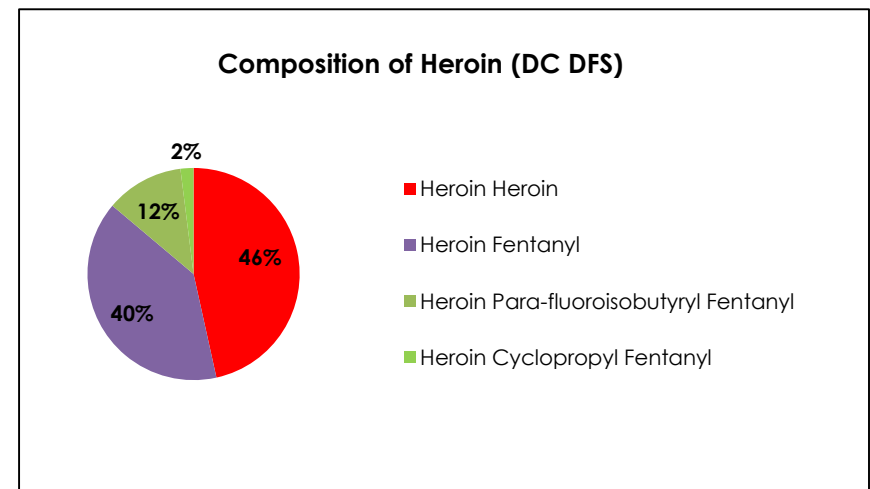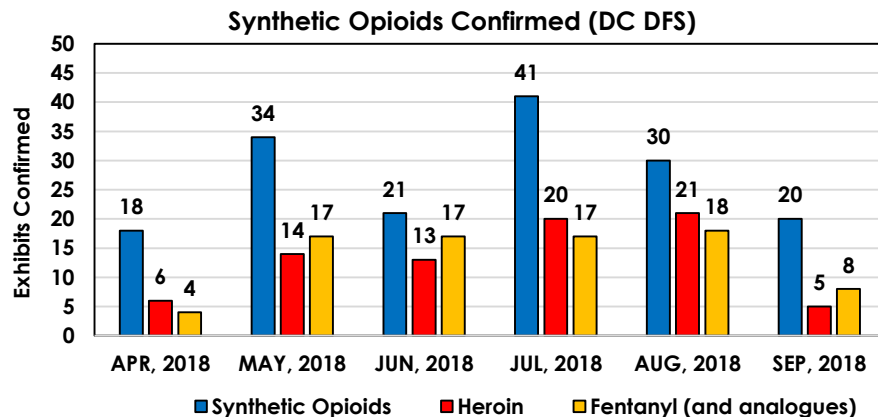 - o Innovative Collaborations with First Responder Communities

FCU Reports for FY 2018
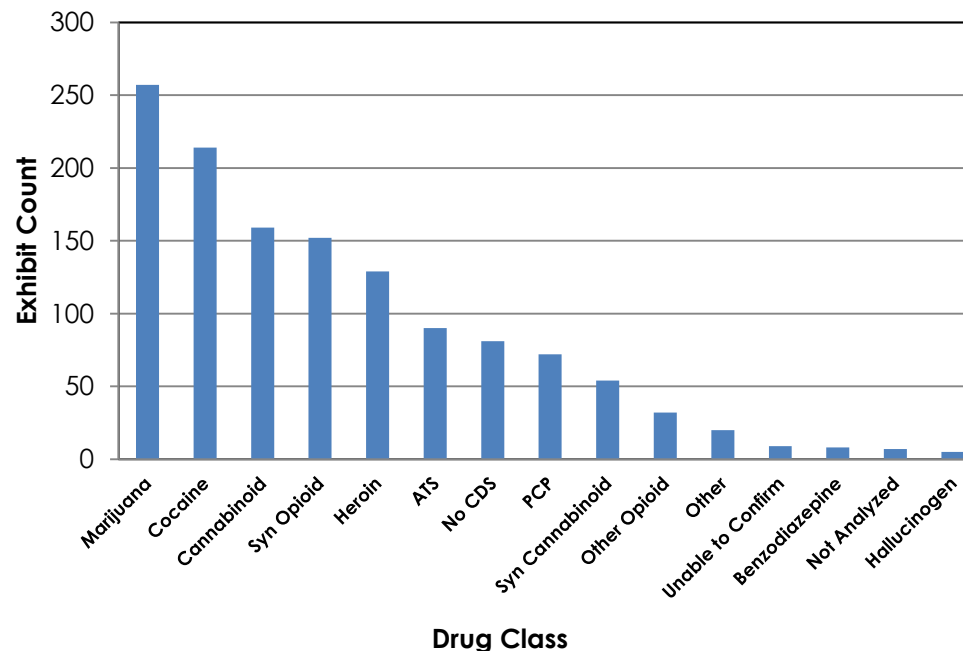
PUBLIC HEALTH SURVEILLANCE

o Discovered new "K2" in District:
- o **July, 2018,** K2 spike (FUB-144, EMB-FUBINACA, FUB-AKB48: NSID)
- o **Early September, 2018,** K2 spike (5-fluoro-MDMB-PICA: NSID)
- o **Late September, 2018,** K2 spike (MMB2201: DOC submission)

o Monthly surveillance reporting
- o Data led to CDC FY19 Grant
- o Led to several NTIC "Intel" product

Over 50% of the Heroin samples contain Fentanyl or Fentanyl analog

Synthetic Opioids Confirmed (DC DFS)

Exhibits Confirmed

	APR, 2018	MAY, 2018	JUN, 2018	JUL, 2018	AUG, 2018	SEP, 2018
Synthetic Opioids	18	34	21	41	30	20
Heroin	6	14	13	20	21	5
Fentanyl (and analogues)	4	17	17	17	18	8

■ Synthetic Opioids ■ Heroin ■ Fentanyl (and analogues)

Composition of Heroin (DC DFS)

- ■ Heroin Heroin — 46%
- ■ Heroin Fentanyl — 40%
- ■ Heroin Para-fluoroisobutyryl Fentanyl — 12%
- ■ Heroin Cyclopropyl Fentanyl — 2%

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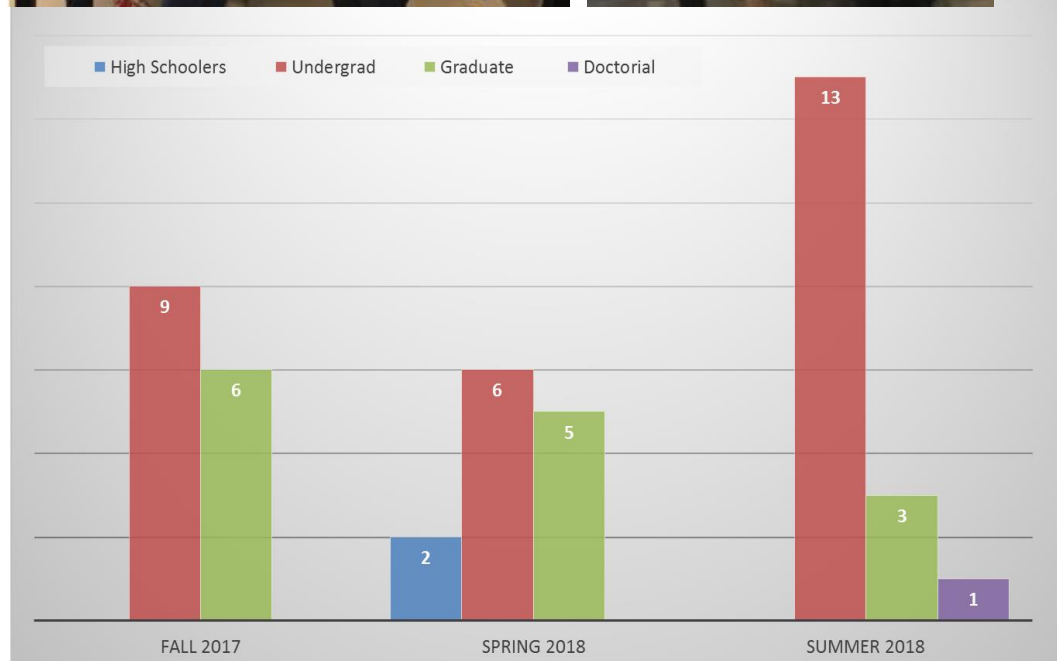GOVERNMENT OF THE DISTRICT OF COLUMBIA
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"NEXT GENERATION" FY18 DFS INTERNS

All Divisions had 38 interns

- Feeder programs:
  - Multiple Colleges/Universities
  - Summer Youth Employment Program
  - DC Department of Disabilities
  - District Leadership Program
  - McKinley Tech High School
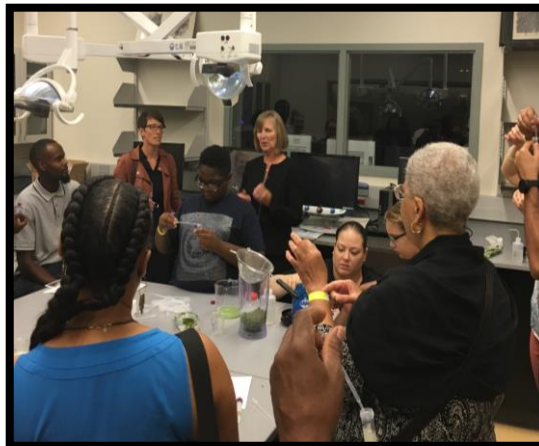 - US Army
  - National Institute of Health

Chart legend: High Schoolers, Undergrad, Graduate, Doctorial

	FALL 2017	SPRING 2018	SUMMER 2018
High Schoolers		2	
Undergrad	9	6	13
Graduate	6	5	3
Doctorial			1

DFS OUTREACH

Mission: Support the public safety & health agenda of DC by:

1) engaging District residents through educational outreach
2) continuing to build trust in DFS' services within the DC's neighborhoods
3) encouraging and supporting a robust STEM career pipeline.

Components:

People and Culture

DFS Educates & Mentors

Special Projects & Initiatives

Tours and Special Talks

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DFS EDUCATES & MENTORS

o Tours
o K-12 Education Outreach
o Local Universities and Colleges

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National Forensic Science Week 2018

(September 17- September 21)

"SUPERHERO SCIENTISTS: TAKING A BYTE OUT OF CRIME"

**Honorable Gregory Jackson,
Senior DC Superior Court Judge**
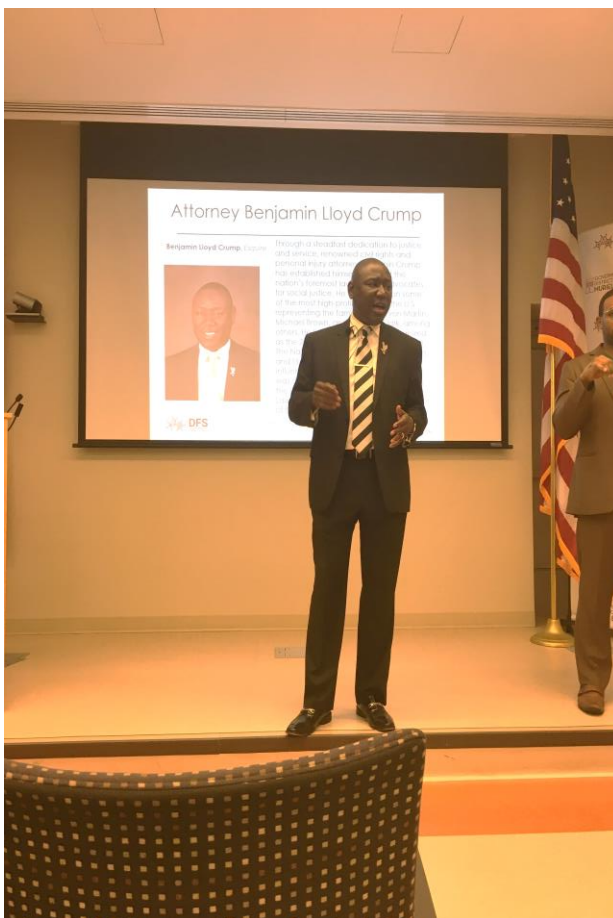
**Civil Rights Attorney
Benjamin Crump**
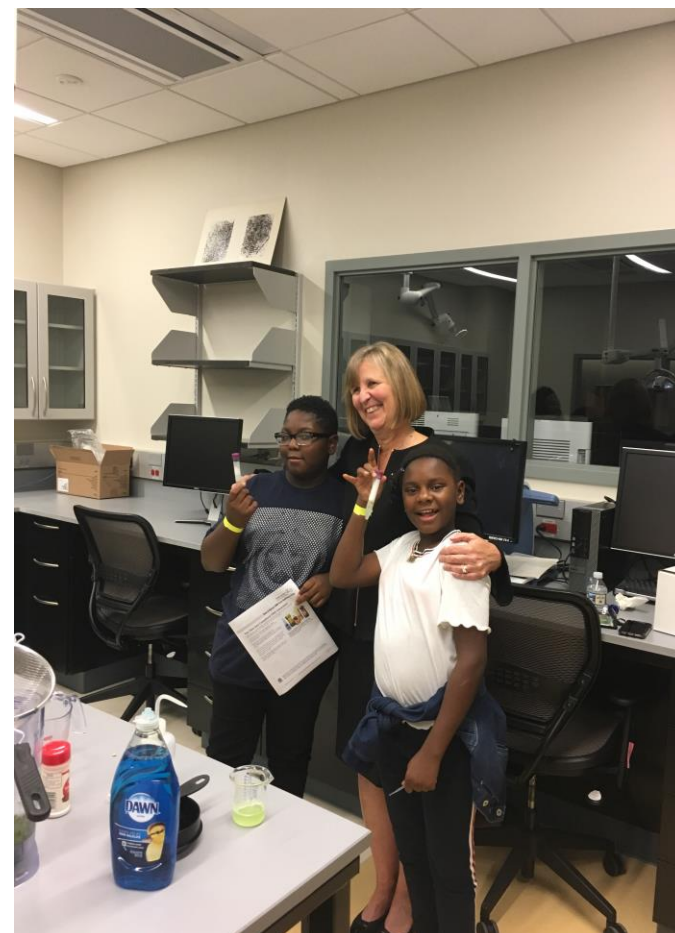
DFS Director, Dr. Smith in lab

STRONGER SCIENCE: SAFER STREETS

I could not be more proud of the work DFS has done in FY18, or more confident that in FY19 we will deliver even greater returns for the people of DC.

I would like to acknowledge Mayor Bowser and her staff for their continuous and generous support of DFS as we strive to realize her vision of a safer, stronger DC.

I would also like to recognize Deputy Mayor Donahue, his staff, and our public safety partner department leaders who continue to support DFS.

I am thankful for the tireless efforts of the women and men who work within the offices and laboratories of DFS, whose stronger science has led to safer streets for all of our friends and neighbors.

In closing, I would like to thank you for your leadership and support. We appreciate the opportunity to share our accomplishments and plans for even higher achievement in the coming year, and look forward to continuing to work with the Committee.

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