



2014
ANNUAL REPORT
MARYLAND STATE POLICE
FORENSIC SCIENCES DIVISION

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FORENSIC SCIENCES DIVISION

DESCRIPTION



The Maryland State Police Forensic Sciences Division (MSP-FSD) is comprised of the Office of the Director, the Operational Services Branch, and the Scientific Analysis Branch.

The Office of the Director consists of the Director, Deputy Director, Assistant Commander, and Quality Assurance / Safety Manager. This administrative unit is responsible for the overall management of the division. The Director oversees the management of the entire division while the Assistant Commander oversees the Operational Services Branch and the Deputy Director oversees the Scientific Analysis Branch. The Operational Services Branch consists of two Sections comprised of seven Units. The Scientific Analysis Branch consists of four Sections comprised of eleven Units. The personnel within the Operational Services Branch and the Scientific Analysis Branch provide scientific support services to the law enforcement community.

The MSP-FSD operates under the following principles:

Core Values

Our dedication to integrity, fairness, and service ensures that our clients are always provided with reports and expert testimony that are ethical, reliable, and scientifically informative.

Mission Statement

- To promote morale through a respectful and unified work environment.
- To meet the forensic science needs of Maryland and its citizens.
- To maintain accreditation with ASCLD/LAB and compliance with all oversight requirements.
- To minimize backlogs and turn around time.
- To operate in a planned, prepared, and proactive manner.

Vision Statement

- To respect, acknowledge, value, challenge, and retain our employees.
- To collaborate with other laboratories and agencies and maximize the forensic services available to Maryland and its citizens.
- To promote state of the science operations through continuing education and the routine evaluation of current procedures.
- To eliminate backlogs and initiate cases upon submission.
- To maximize the public's return on investment by ensuring that sufficient resources are always available to the FSD and that those resources are always procured in the most fiscally responsible manner possible.

DIRECTOR'S SUMMARY

Daniel E. Katz

Preparation of the Forensic Sciences Division (FSD) Annual Report provides us a chance to appreciate all that was achieved during the past year as well as to anticipate and plan for the challenges of the upcoming year. The Annual Report is a critical tool that allows FSD to evaluate on a yearly basis whether we have successfully carried out the essential functions associated with the FSD Mission Statement. It is equally important though, that the Annual Report track our progress towards meeting our longer-term goals represented by the FSD Vision Statement.

In 2014, I was honored to be named the newest Director of FSD. While the position is a daunting responsibility, it is also a welcome opportunity to provide a vision for the future and to work with the talented and dedicated FSD staff to make that vision a reality. This Director's Summary will focus on the five prongs of the FSD Vision Statement and give a realistic assessment of where we currently are and where we want to go.

To respect, acknowledge, value, challenge, and retain our employees.

It is by showing our employees that we respect, acknowledge, value, and challenge them that we are able to retain them. There were significant efforts made in this area during 2014. These included established FSD traditions such as Employee of the Month awards, the National Forensic Science Week celebration, employee appreciation events, and holiday parties. Additional focus was placed this past year on building unity within FSD. Units were encouraged to share their accomplishments with each other through the Brag of the Month program and Manager Meetings were re-established to promote inter-section dialogue. The year was also ripe with opportunity for FSD employees as 3 key supervisor positions (Deputy Director, CDS Supervisor, and Crime Scene Supervisor) were posted internally and filled by existing employees. There still are several issues that need to be addressed such as salary inequities, lack of sufficient IT support, and limited training opportunities. There were insufficient funds available in 2014 to fix these problems, but groundwork was laid and efforts will continue. FSD lost a total of only 7 employees in 2014 (3 retirements and 4 resignations), but we must continue to improve the employee experience until we reach our ultimate goal of maintaining a 0% employee resignation rate.

To collaborate with other laboratories and agencies and maximize the forensic services available to Maryland and its citizens.

Practically every functional group within FSD collaborated with another laboratory or agency in 2014 in an effort to improve our ability to serve the citizens of Maryland. Whether it was the Latent Print / Impressions Unit coordinating with a contract laboratory (Ron Smith and Associates) to outsource 585 backlogged latent print cases resulting in a 39% decrease in the backlog and a 44% decrease in turn around time; or the CDS Unit expanding its Allied Chemist program to include a scientist funded by the Cecil County Government in order to bring on an additional resource to address that county's sizable backlog of CDS cases; or the FSD Quality Assurance / Safety Manager working with Quality Managers from other Maryland crime

laboratories to start a much needed regional association of Forensic Quality Assurance Managers to establish best practices for meeting accreditation and licensing requirements. It is critical that we seek out collaborations and continue to think outside the proverbial box. My long term goal in regards to collaboration is to establish a Maryland Criminal Justice Work Group. This would be a high level work group that would include stakeholders from every part of the Maryland criminal justice system. It would include forensic scientists, investigators, prosecutors, defense attorneys, judges, and educators with the common mission of working together to make the system work better. Too often when potential improvements are discussed, the lack of coordination amongst key players results in no action being taken. With such a work group in place, we may find that the so-called impossible may actually be possible. Perhaps we may even have video testimony in Maryland someday.

To promote state of the science operations through continuing education and routine evaluation of current procedures.

Two keys to ensuring the consistent advancement of FSD, and for that matter forensic science in general, are education and self-assessment. In 2014, FSD focused on education by collaborating with the University of Maryland to learn about the potential use of Raman technology in the CDS Units, interacting with colleagues and vendors to make the most informed decision possible when purchasing a Liquid Chromatograph Mass Spectrometer (LCMS) for the Toxicology Unit, and having supervisors view a 7-part backlog management webinar series sponsored by the American Society of Crime Laboratory Directors (ASCLD). Furthermore, self-assessment was advanced both by joining the Potomac Regional Audit Group (PRAG) which provides for cost effective peer review of DNA operations and by securing funding to hold an on-site American Society of Crime Laboratory Directors / Laboratory Accreditation Board (ASCLD/LAB) assessor training course in 2015 for 12 FSD employees to gain a better understanding of our accreditation standards. In addition, FSD also made strong contributions to the advancement of education and self-assessment on a global level in 2014. DNA Technical Leader Bruce Heidebrecht continued his work as a member of the DNA Mixture Committee on the Scientific Working Group for DNA Analysis Methods (SWGDM) and routinely presents DNA mixture workshops that benefit the entire forensic DNA community. Biology Casework Supervisor Jason Befus applied for and was chosen as a member of the newly formed Biology/DNA Scientific Area Committee's DNA Analysis 1 Subcommittee within the Organization of Scientific Area Committees (OSAC) that is tasked with establishing national standards regarding forensic DNA laboratory methodologies. I also began my term as a commissioner on the Forensic Science Education Program Accreditation Commission (FEPAC) which works to establish and enforce standards that ensure that university forensic science programs are producing the best possible future forensic scientists. In 2015, FSD will start a new ASCLD/LAB accreditation cycle which will include a full on-site assessment. Also in 2015, it is my intention to begin to facilitate opportunities for FSD forensic scientists to obtain professional certification which will be our next step towards assuring our clients that the quality of our work product is beyond reproach.

To eliminate backlogs and initiate cases upon submission.

The ideal casework management scenario for both FSD and our clients is for a case to be assigned to a scientist and have analysis initiated immediately upon submission of the evidence to any unit within FSD. This past year, the Biology Casework Units set all-time lows for

average number of pending cases (118) and the average number of backlogged cases - defined as cases pending for more than 30 days (80). Even more importantly though, the efficiency of the Units was extraordinary with an average turn around time of 86 days in 2014 compared to 286 days just 6 years earlier in 2009. In fact, in June 2014, the Units reached a point where they only had 2 unassigned cases. Through years of strategic case management within the Biology Section, we are now within grasp of achieving what may have once seemed like an unattainable goal of assigning all cases upon submission. Another example of what seemed like an impossible task, but was achieved, was the elimination of the backlog of nearly 50,000 Maryland Shellcasing Reference Database samples awaiting database entry and storage. When adequate resources were made available, the dedicated staff in the Firearms / Toolmarks Unit was able to complete this massive project ahead of schedule. Similarly, the Trace Evidence Unit saw the backlog of fire debris cases reach an all-time high of over 100 cases at the end of 2013 due to operations shutting down in 2012 when both existing fire debris analysts left FSD. However, by persevering through challenging times and successfully implementing a plan to re-establish operations, the Trace Evidence Unit is once again in control of their caseload. These concepts of strategic case management, adequate resources, and perseverance are the cornerstones of backlog elimination, and we will continue to apply them so that eventually all FSD casework is analyzed in real time.

To maximize the public's return on investment by ensuring that sufficient resources are always available to the Forensic Sciences Division and that those resources are always procured in the most fiscally responsible manner possible.

FSD faced significant financial challenges in 2014 as budget cuts were implemented in July at the beginning of the new fiscal year. This resulted in 11 positions being held vacant for the past 6 months as well as 1 permanent technician position and 7 contractual technician positions being cut. Consequently, the response time of our Crime Scene Section has slowed down, the backlog reduction in our Latent Print / Impressions Unit has plateaued, and the turn around time for our Toxicology Unit has increased. It should be made clear that each one of these situations is not the fault of the staff but rather simply a matter of insufficient resources; in fact, I am quite confident that if not for the pride and work ethic of the affected staff members, we would be facing much bigger problems and I am so thankful for their efforts. It is my job to try and secure everything that our staff needs to get the job done. Sometimes that is easier than others, but through budget planning, the pursuit of grant funding, creativity, and tenacity we eventually will get the resources that we need to provide the state of Maryland with the most effective yet cost efficient forensic services possible.

In conclusion, it is easy to get caught up in the daily grind, but success requires us to recognize the big picture and be confident that there actually is a plan leading us forward. Please be assured that FSD has a plan.

STATISTICAL SUMMARY

Crime Scenes Processed and Assisted

Crime Scene Region	Scenes Processed	MSP Scenes	Allied Agency Scenes	Scene Assists
Eastern	303	45%	55%	34
Western	238	70%	30%	22
Central	224	73%	27%	26
TOTALS	765	61%	39%	82

Laboratory Cases Received and Completed

Casework Type	Total Cases Received	MSP Cases Received	Allied Agency Cases Received	Cases Completed
Latent Prints/Impressions	1,085	22%	78%	1,827
Firearms/Toolmarks	684	25%	75%	488
CDS-Pikesville	7,462	28%	72%	7,874
CDS-Berlin	4,634	26%	74%	4,900
CDS-Hagerstown	3,611	32%	68%	4,140
Toxicology	1,066	32%	68%	971
Biology	542	18%	82%	628
Trace Evidence	147	69%	31%	274
Question Documents	34	21%	79%	37
TOTALS	19,265	28%	72%	21,139

Laboratory Backlogs and Turn Around Times

Casework Type	Pending Caseload (Cases)¹	Backlog (Cases pending >30 days)¹	2014 Turn Around Time (Calendar Days)²	4th Quarter Turn Around Time (Calendar Days)³
Latent Prints/Impressions	767	728	290	353
Firearms/Toolmarks	721	620	Data not available at time of report issue.	
CDS-Pikesville	1,289	1,044	73	83
CDS-Berlin	65	0	25	36
CDS-Hagerstown	148	27	27	33
Toxicology	225	121	50	56
Biology	110	87	86	65
Trace Evidence	29	25	200	83
Question Documents	12	10	162	59

1. Number of cases as of 12/31/14.
2. Average turn around time for cases completed throughout the calendar year.
3. Average turn around time for cases completed during the 4th quarter.

Operational Services Branch Annual Comparison

Section/Unit (<i>Action</i>)	2013	2014
Crime Scene (<i>Crime Scenes Processed</i>)	904	765
Photography (<i>Special Assignments</i>)	187	257
Photography (<i>Film Processed</i>)	296	173
Photography (<i>Prints Made</i>)	6,023	7,133
Central Receiving (<i>Forensic Cases Received</i>)	21,014	19,265
Central Receiving (<i>CDS Cases Destroyed</i>)	6,330	7,650

Scientific Analysis Branch Annual Comparison

Unit (<i>Action</i>)	2013	2014
Latent Prints/Impressions (<i>Cases Received</i>)	1,363	1,085
Latent Prints/Impressions (<i>Cases Completed</i>)	1,418	1,827
Latent Prints/Impressions (<i>MAFIS Case Hits</i>)	234	309
Latent Prints/Impressions (<i>Case Uploads to MAFIS</i>)	468	555
Latent Prints/Impressions (<i>Latent Print Uploads to MAFIS</i>)	935	1,282
Firearms/Toolmarks (<i>Cases Received</i>)	676	684
Firearms/Toolmarks (<i>Cases Completed</i>)	549	488
Firearms/Toolmarks (<i>Case Uploads to NIBIN</i>)	375	331
Firearms/Toolmarks (<i>Operation Test Shot Samples Completed</i>)	256	132
Firearms/Toolmarks (<i>MSRD Samples Processed</i>)	31,369	68,883
CDS-Pikesville (<i>Cases Received</i>)	8,471	7,462
CDS-Pikesville (<i>Cases Completed</i>)	8,333	7,874
CDS-Berlin (<i>Cases Received</i>)	4,987	4,634
CDS-Berlin (<i>Cases Completed</i>)	4,747	4,900
CDS-Hagerstown (<i>Cases Received</i>)	3,600	3,611
CDS-Hagerstown (<i>Cases Completed</i>)	3,175	4,140
Toxicology (<i>Cases Received</i>)	1,063	1,066
Toxicology (<i>Cases Completed</i>)	1,014	971
Biology Casework (<i>Cases Received</i>)	676	542
Biology Casework (<i>Cases Completed</i>)	616	628
Biology Database (<i>Total CODIS Hits</i>)	478	623
Biology Database (<i>Arrested/Charged CODIS Hits</i>)	88	104
Biology Database (<i>Convicted Offender Uploads to CODIS</i>)	4,752	3,569
Biology Database (<i>Arrested/Charged Uploads to CODIS</i>)	4,071	4,144
Biology Database (<i>Case Uploads to CODIS</i>)	886	954
Trace Evidence (<i>Cases Received</i>)	146	147
Trace Evidence (<i>Cases Completed</i>)	65	274
Question Documents (<i>Cases Received</i>)	32	34
Question Documents (<i>Cases Completed</i>)	35	37

Quantity of Laboratory Submissions to FSD Ranked by MSP Installation

2014 Rank	2013 Rank	MSP Installation	Counties Served
1	25	MSP-CID	Statewide
2	2	MSP-JFK Highway	Cecil, Harford, Baltimore
3	1	MSP-Westminster	Carroll
4	8	MSP-Salisbury	Wicomico
5	5	MSP-McHenry	Garrett
6	3	MSP-North East	Cecil
7	7	MSP-Prince Frederick	Calvert
8	4	MSP-Golden Ring	Baltimore
9	11	MSP-Frederick	Frederick
10	9	MSP-Centerville	Kent, Queen Anne's
11	10	MSP-Easton	Caroline, Dorchester, Talbot
12	6	MSP-Bel Air	Harford
13	13	MSP-LaPlata	Charles
14	12	MSP-Glen Burnie	Anne Arundel
15	16	MSP-Hagerstown	Washington
16	17	MSP-Berlin	Worcester
17	19	MSP-Rockville	Montgomery
18	17	MSP-College Park	Prince George's
19	20	MSP-Forestville	Prince George's
20	15	MSP-Leonardtown	St. Mary's
21	14	MSP-Cumberland	Allegany
22	23	Office of State Fire Marshall	Statewide
23	21	MSP-Princess Anne	Somerset
24	22	MSP-Waterloo	Howard
25	24	MSP-Homicide	Statewide
26	26	MSP-DED/CEC	Statewide
27	n/a	MSP-CVED	Statewide

Quantity of Laboratory Submissions to FSD
Ranked by Allied Agency County

2014 Rank	2013 Rank	County
1	1	Worcester
2	2	Frederick
3	4	Charles
4	5	Harford
5	6	Howard
6	3	Wicomico
7	7	Cecil
8	8	Calvert
9	25	Statewide
10	10	Carroll
11	9	Allegany
12	11	St. Mary's
13	12	Dorchester
14	14	Talbot
15	13	Anne Arundel
16	16	Prince George's
17	15	Baltimore
18	21	Washington
19	18	Caroline
20	19	Queen Anne's
21	20	Kent
22	23	Somerset
23	24	Garrett
24	17	Baltimore City
25	22	Montgomery

CRIME SCENE SECTION

The Crime Scene Section (CSS) is responsible for processing crime scene evidence to include identifying, collecting, preserving, photographing, sketching, storing and transporting evidence into the laboratory facilities. Bloodstain pattern analysis, facial composite generation and bullet trajectory determination are also available. Crime Scene Technicians (CSTs) work closely with criminal investigators, processing crime scenes and providing technical assistance, thereby allowing investigators the opportunity to conduct thorough investigations. Technicians are available to Maryland's law enforcement community twenty-four hours a day, seven days a week. The CSS also provides assistance to neighboring states upon request. The CSS is divided into three regional units: Western, Central, and Eastern. The overall operations of the Crime Scene Section are overseen by the Section Manager. Current staffing of the CSS includes three Regional Supervisors and nine Crime Scene Technicians. When fully staffed, there are five technicians assigned to each of the regions.

Most of the evidence examined by the FSD is transported by CSTs. They not only transport evidence for the majority of the Department's installations, but also for many of the local police and sheriffs' departments. These transports are to and from the Pikesville Laboratory as well as the two satellite laboratories located in Hagerstown and Berlin.

In addition to these duties, CSTs are responsible for managing and training Crime Scene Search Teams (CSST) around the State. These teams are comprised of volunteers who respond to crime scenes and conduct thorough searches of large areas or smaller scale grid searches to recover possible evidence. The CSS also is a key player in the FSD Disaster Identification Team (DIT), which is available to assist the Office of the Chief Medical Examiner in locating, marking, photographing, and identifying disaster victims.

The technical abilities and expertise of the CSTs are often utilized for training. They provide instruction at the Maryland State Police Academy, Natural Resources Police Academy, various in-service school programs, and provide lectures during training and seminars hosted by allied police departments.

CRIME SCENE REGIONAL UNITS

Western Region Unit: Allegany, Frederick, Washington, Carroll, Howard, Montgomery and Garrett Counties

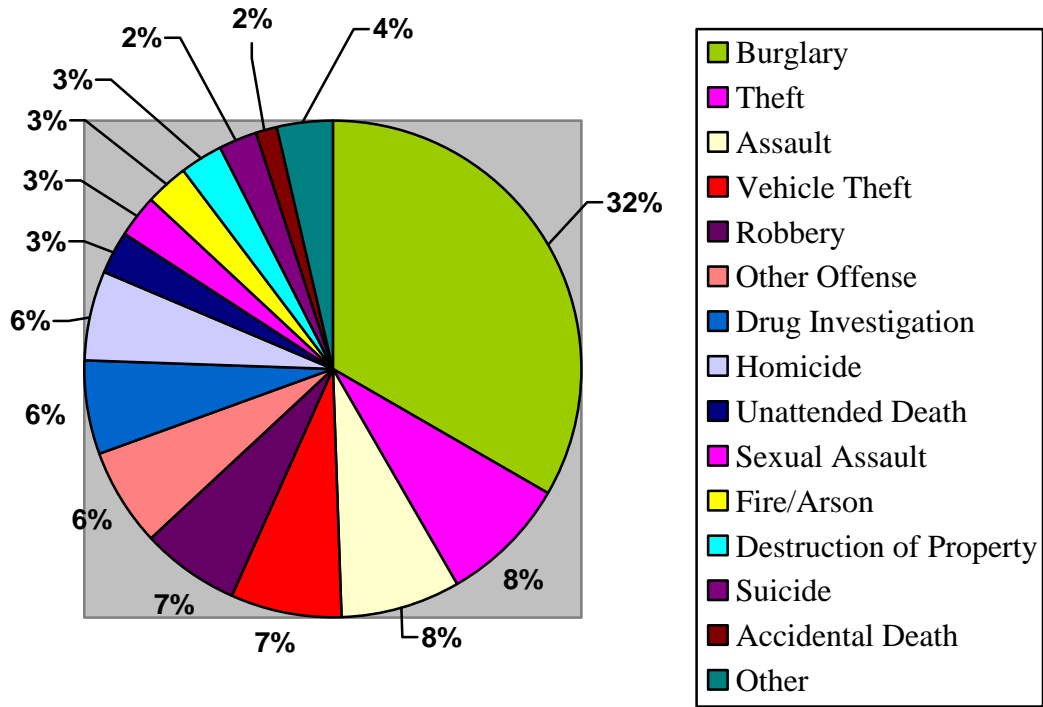
Central Region Unit: Harford, Baltimore, Cecil, Anne Arundel, Prince George's, Calvert, Charles and St. Mary's Counties, Maryland Port, and all DOC facilities located in Baltimore City

Eastern Region Unit: Kent, Queen Anne's, Talbot, Caroline, Dorchester, Wicomico, Somerset and Worcester Counties

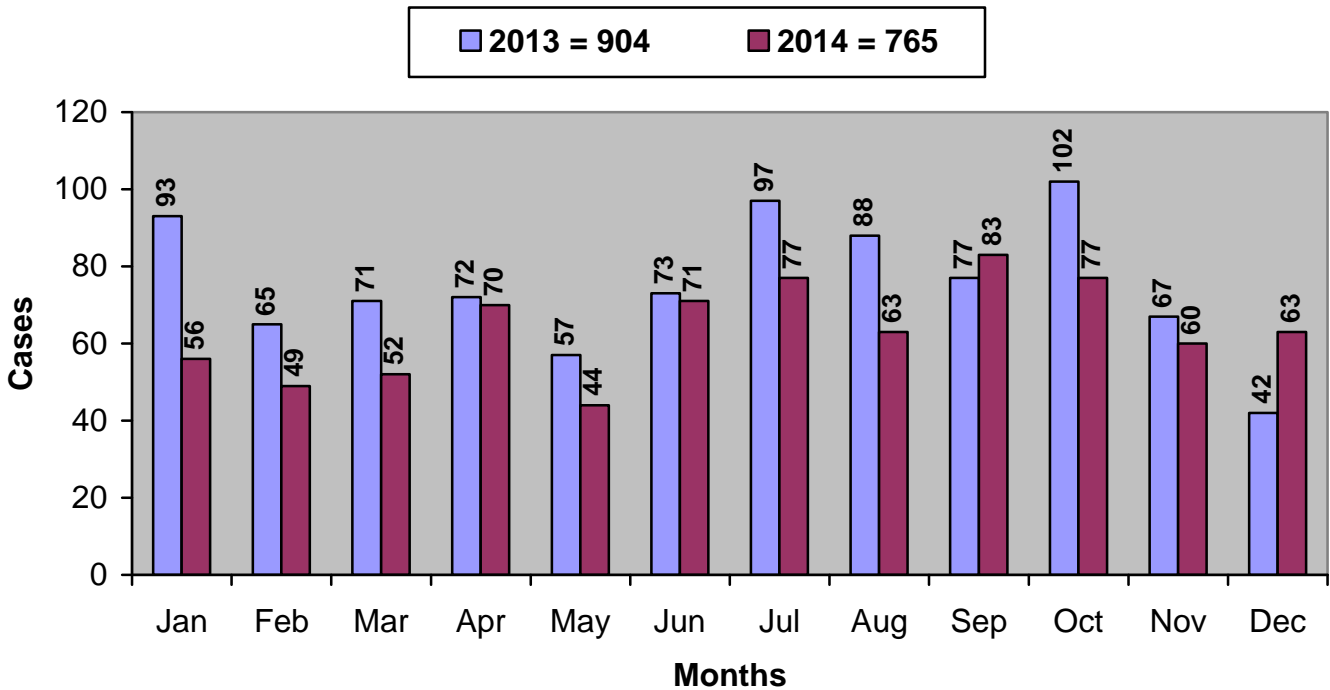
Total Number of Crime Scenes Handled in 2014 per Office

Crime Scene Office	Total Crime Scenes
Northeast	116
Easton	107
Princess Anne	93
Cumberland (C3I)	76
McHenry	66
Centreville	62
Westminster	48
Glen Burnie	42
Salisbury	41
Bel Air	38
Frederick	30
Golden Ring	25
Hagerstown	18
Pikesville	3
TOTAL	765

Total Number of Crime Scenes in 2014 per Crime Type



Total Number of Crime Scenes per Month



NOTEWORTHY CASES

On April 16, 2014, CST Idso assisted with the investigation of a homicide in Wicomico County in which the male victim had been brutally beaten to death and a second victim was assaulted during a home invasion. During processing of the scene, CST Idso located and collected a black poncho from just outside of the scene that was believed to have been used by the suspect. CST Idso processed the poncho for possible DNA which lead to two DNA profiles being identified resulting in the arrest of a suspect.

On June 27, 2014, CST Anschuetz was requested to respond to a reported Homicide in Carroll County. At that time a body was discovered off of the roadway, just inside a wooded area. Examination of the victim revealed a single gunshot wound to the head. The following day during the autopsy, it was discovered that the projectile had passed completely through the skull of the victim at a slightly downward angle and evidence on the victim's clothing lead investigators to believe that the victim may have been kneeling when he was shot possibly execution style. Utilizing this new information CST-S Miller responded back to the scene and, through his diligent efforts, was able to locate the single bullet within minutes of searching with a metal detector under heavy vegetation in the area of the woods where the victim had been discovered. This evidence immensely assisted the investigation of the homicide.

On July 5, 2014, CST Powers processed the scene of a burglary at the home of a well known family in Allegany County. Very few items were believed to have been taken, but the few things that were stolen were antiques/heirlooms worth well over \$10,000. At the time of the investigation there were no suspects or solid leads. While processing the scene, CST Powers developed and collected several latent finger and palm prints that lead to the identification and arrest of the suspect in the case.

On August 24, 2014, CST Woods and CST Harvey responded to the scene of a homicide where an unidentified victim was discovered in advanced stages of decomposition in a shallow grave in Dorchester County. Given the condition of the victim, collection of fingerprints at the autopsy was extremely difficult. With hard work and ingenuity, CST Woods was able to obtain one usable print that lead to the victim's identification. CST Woods also processed and lifted a latent fingerprint from a cartridge that was removed from a handgun that was recovered by investigators during the service of a search and seizure warrant that was found to match one of the suspects in the case.

2014 CRIME SCENE SECTION ACCOMPLISHMENTS

- 1. To promote a healthy work environment.** New and improved tripods were obtained for staff to improve their ability to obtain technical photographs of shoe prints and tire tracks. Current equipment was maintained in very good condition. Supplies of consumable materials were kept well stocked throughout the year enabling, staff to perform their job at the highest standard possible.
- 2. To meet the forensic sciences needs of Maryland and its citizens.** In 2014, numerous noteworthy homicide and high profile investigations reached a successful conclusion in court due to the diligent efforts of CSS personnel.
- 3. To maintain accreditation with ASCLD/LAB and compliance with all oversight requirements.** There was only one minor finding noted as a result of the annual ASCLD/LAB surveillance visit and the assessor was very complimentary in reference to the quality assurance practices of the CSS. During the surveillance visit, seven of the 14 crime scene offices were toured and evaluated. Members of the CSS staff were responsible for transporting the assessor to all of the various sites and did so in a very professional and efficient manner. It should also be noted that the Section Manager, Mitch Dinterman, and CST Supervisor Kris Amspacker exemplified the importance of accreditation by participating in assessments of two separate laboratories.
- 4. To minimize backlogs and turn around time.** The Crime Scene Section continued to maintain a zero backlog.
- 5. To operate in a planned, prepared, and proactive manner.** A large volume of CST evaluation forms were submitted by law enforcement personnel providing valuable feedback to the CSTs and their supervisors. These evaluations were consistently highly rated and praised CSS personnel for their exemplary service and performance. Areas of emphasis for training are always being evaluated.

2015 CRIME SCENE SECTION GOALS

- 1. To promote morale through a respectful and unified work environment.**
 - To maintain equipment in the best condition possible and to replace all outdated/nonworking equipment to the extent that the Division budget will allow.
 - To encourage good safety practices with all Section personnel to include good driving habits.
 - To promote and embrace solidarity between the CSS personnel and the laboratory personnel.

- 2. To meet the forensic sciences needs of Maryland and its citizens.**
 - To continue to handle all calls for service in a professional manner and to always strive to do the best job possible to assist in any and all investigations.
 - To evaluate reasons for decreased calls for service and attempt to gain back any customers that may have been lost.

- 3. To maintain accreditation with ASCLD/LAB and compliance with all oversight requirements.**
 - To continue to strive to follow all sound quality assurance practices making sure that every aspect of the CSS operations, from the initial call for service to the technical and administrative reviews to the handling of all evidence, is done in such a manner that there can be no question as to the integrity of the investigation.
 - To encourage additional CSTs to become ASCLD/LAB assessors.

- 4. To minimize backlogs and turn around time.**
 - To continue to be a model of efficiency making sure that all cases are completed in a timely manner and there is no backlog.
 - To assist other FSD sections and units, however possible, during down time.

- 5. To operate in a planned, prepared, and proactive manner.**
 - To seek out any and all possible training to ensure that staff are kept up to date on the latest techniques and best practices.
 - To reinforce the following of standard operating procedures and to continually review and improve all aspects of CSS operations ensuring the effectiveness of the service provided.
 - To obtain “situational awareness” training for current CSTs and to implement such training for all newly hired CSTs.

FORENSIC SUPPORT SERVICES SECTION

The FSSS consists of the Photography Unit, the Central Receiving Unit, the Administrative Support Unit, and the Computer Support Unit. These units play an important role in allowing the FSD to function as efficiently and effectively as possible.

All four of the FSSS units are located at the Forensic Sciences Division Pikesville Laboratory. The Photography Unit is supervised by one Forensic Photographer Supervisor and is staffed by one Forensic Photographer. The Central Receiving Unit is supervised by one Administrative Officer and is staffed by three Forensic Inventory Control Officers. The Administrative Support Unit is supervised by one Administrative Specialist III and is staffed by one Administrative Specialist II, and an Office Secretary III position. The Computer Support Unit consists of two individuals from the IT Division who are assigned to FSD. This includes one IT Quality Assurance Specialist and one Computer Network Specialist II.

PHOTOGRAPHY UNIT

The Photography Unit provides photographic services to the Maryland State Police as requested through FSD management. In 2014, the Photography Unit has nearly completed converting all of the Department's civilian personnel to the new identification card.

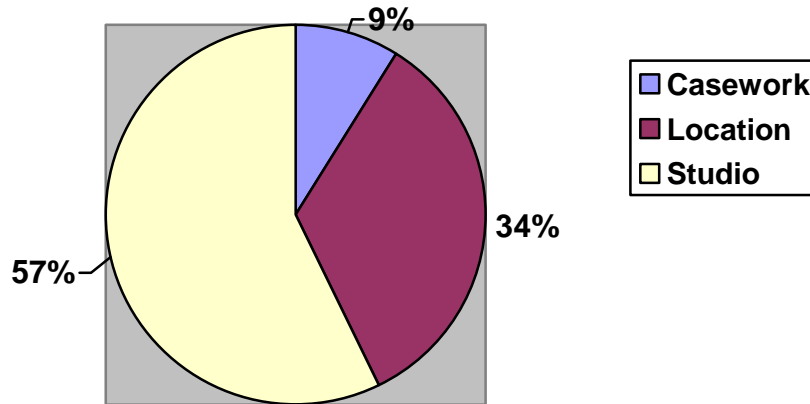
Duties within the Unit include the development and printing of images related to crime scenes and motor vehicle accidents for the Maryland State Police and other agencies. This Unit also serves as the VeriPic system administrator. Reprints or CDs are provided to various divisions and units throughout the Department upon request. Other duties include, but are not limited to, public relations photos, maintaining the digital Barrack Identification Photo System (up to July 2014, when procedure changed), and the support of other units within the Department.

Photography Unit personnel serve as members of the Disaster Identification Team and provide technical training in photography.

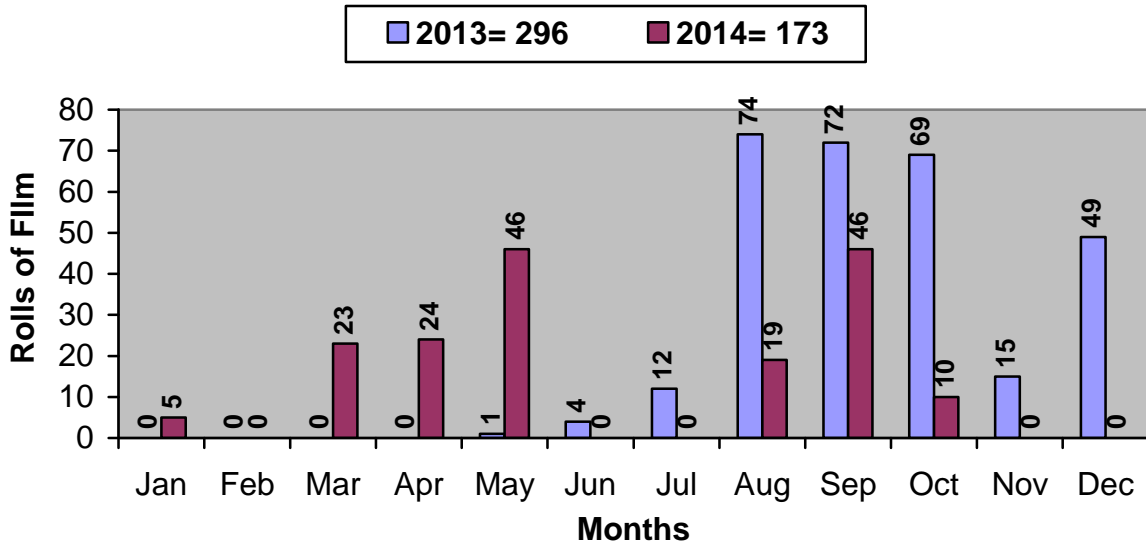
Photography Requests 2014

MSP Requestors	Requests
Portraits/FSD (<i>by # of days not requestors</i>)	147
Headquarters	38
Forensic Science Division	23
Barracks	19
Training	13
Special Operations Division	9
Recruiting	4
Aviation	4
TOTAL	257

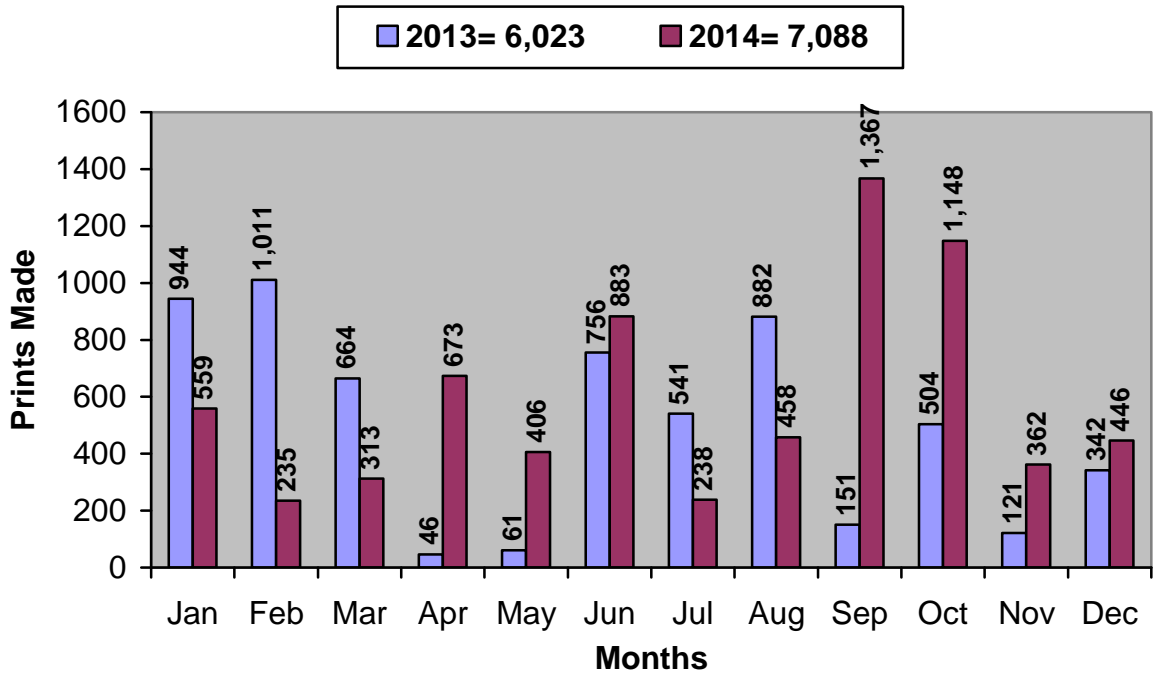
2014 Photo Requests per Request Type



Total Film Processed



Total Prints Made



CENTRAL RECEIVING UNIT

The Central Receiving Unit (CRU) functions as a liaison between the FSD and agencies submitting evidence for scientific analysis and CDS destruction. The Unit is composed of one Administrative Officer and three MSP Forensic Inventory Control Officers. The Unit reports directly to the FSD Assistant Commander.

The CRU handles a large volume of various types of evidence such as swabs, sexual assault kits, soiled clothing, controlled dangerous substances, toxicology kits, guns, ammunition, fingerprint lift cards, fire debris cans, and questioned documents. The items are secured in the unit while awaiting analysis and again while pending return to the submitting agency. Personnel assigned to the unit ensure the integrity and protection of each item of evidence. Regularly scheduled inventories of the evidence within Central Receiving and the laboratory units are coordinated by CRU.

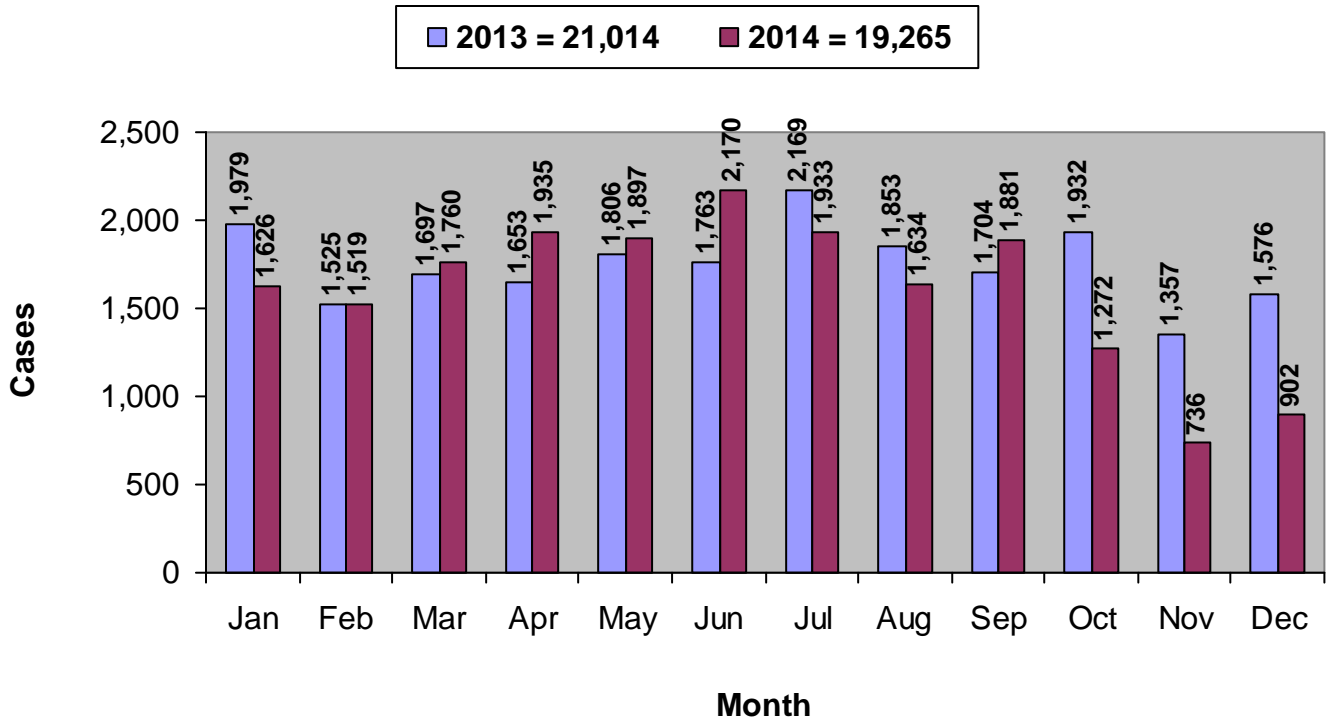
The CRU administers the Department's CDS destruction process. During the destruction process, MSP Forensic Inventory Control Officers randomly select a number of cases to be re-tested for quality control. The CRU also coordinates the local destruction of marijuana plants and confiscated parcels with the various installations within the Department. The CRU Supervisor is responsible for organizing disposal events for several law enforcement agencies across the state.

The CRU is responsible for archiving scientific analytical reports for all sections of the FSD and coordinates the transmittal of files to and from the State Records Management Center. The CRU also maintains expunged records for the Division.

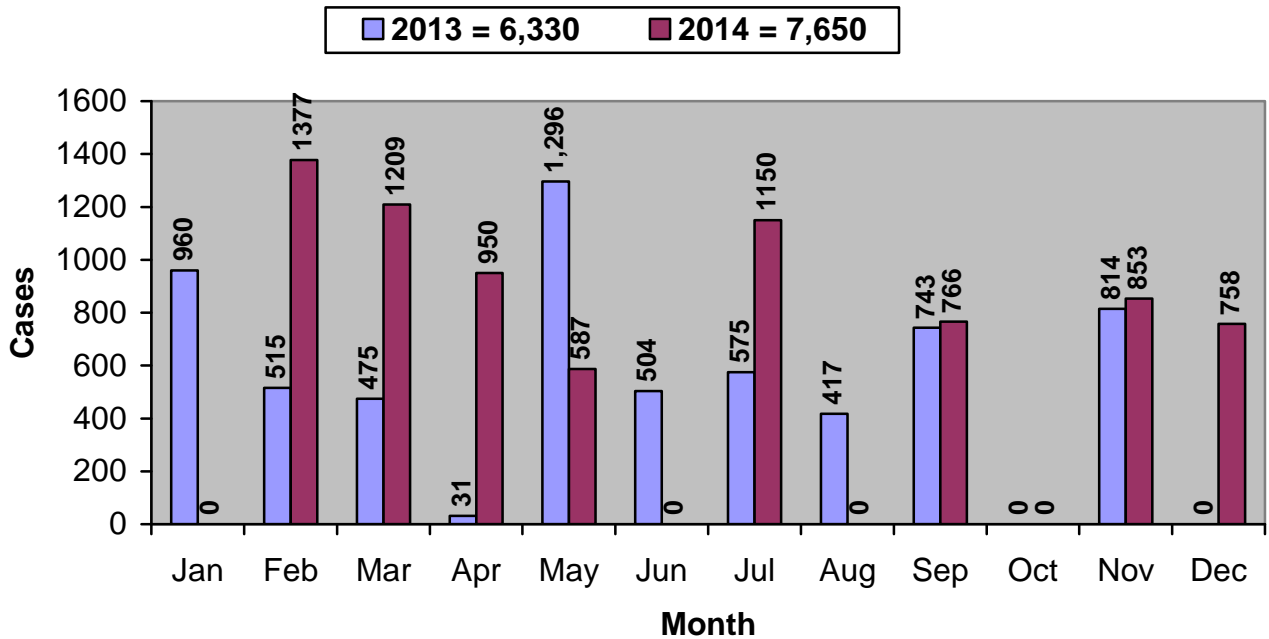
CRU personnel mentor several college students throughout the year in accordance with the Forensic Sciences Division Internship Program.

It should also be noted that CRU plays an essential role in the use of the Laboratory Information Management System (StarLIMS). In fact, the CRU Supervisor functions as a StarLIMS Administrator and acts as the primary liaison between FSD end users and the project manager at StarLIMS.

Total Cases Received at FSD



Total CDS Cases Destroyed per Month



ADMINISTRATIVE SUPPORT UNIT

The Administrative Support Unit provides support throughout the FSD. Office management functions include processing working fund expenditures, ordering laboratory supplies, capital inventory, various administrative duties involving the laboratory budget, personnel inquiries, maintaining service agreement contracts, processing invoices, logging and maintaining all submitted court summonses, logging and processing training requests, processing work and leave reports, recording meeting notes, and maintaining the Division's filing system.

In addition to the FSD administrative staff, a contractual employee that is sub-contracted through LB & B Associates is assigned to provide security/receptionist coverage for the FSD front lobby security desk. This individual screens and logs all visitors, including personnel delivering evidence, and also monitors laboratory security cameras and corresponds with the Headquarters' Duty Officer and the Baltimore County Police Department regarding security issues.

COMPUTER SUPPORT UNIT

The Computer Support Unit is a group of IT Division (ITD) employees who are assigned to work out of FSD. As ITD is understaffed and is responsible for supporting the IT system of the entire Department, the ability to have these individuals on-site is essential. One of the IT Quality Assurance Specialists is the StarLIMS Administrator responsible for being the primary liaison between FSD end users and the developers and designers at StarLIMS. This individual not only troubleshoots daily StarLIMS issues but also provides the IT support as FSD continues to expand its use of StarLIMS. The Computer Network Specialist II is responsible for installing and maintaining computer hardware and software as well as responding to web help desk tickets originating from FSD.

2014 FORENSIC SUPPORT SERVICES SECTION ACCOMPLISHMENTS

1. Promoting a healthy work environment. The Administrative Support Unit has been essential in providing the FSD staff with what they need to do their jobs in the field and in the laboratory. Furthermore, their knowledge and understanding of the inter-workings of the Division ensures that staff can depend on them to answer or get the answer to practically any job-related question. Also, the Photography Unit assisted in creating the 2015 MSP Safety Calendar. The calendar not only provides tips on safety for the Department, but also is a free schedule planner that staff can use to organize their workdays.

2. Meeting the forensic sciences needs of Maryland and its citizens. The Central Receiving Unit created informational brochures for each Unit assigned to FSD; these brochures are distributed to the clients of FSD, providing a quick summary of each Unit and detailing the guidelines for packaging and submitting evidence to the Division. Another way that the FSSS impacted the ability to provide our clients with the best forensic services possible is the extensive work of the two StarLIMS Administrators. A major achievement of theirs was the successful implementation of a more efficient electronically based evidence inventory process that insures evidence security.

3. Maintain accreditation with ASCLD/LAB and compliance with oversight requirements. While oversight requirements are primarily focused on the operations in the field and in the laboratory, the FSSS plays an important role in documenting compliance. For example, the Computer Support Unit helped FSD re-design our webpage and post various documents including annual reports which are required to be posted as per the DNA Database statute. Furthermore, a major component of ISO 17025 is documentation of both staff meetings and an annual management review meeting. FSD meets this requirement thanks to the administrative staff who record the minutes for these meetings.

4. Minimize backlogs and turn around time. The Photography Unit has maintained a backlog of less than ten cases for most months, while reducing the backlog of civilian staff who have not obtained their new identification cards. A conscious effort was made by CRU to closely monitor the number of appointments being scheduled for allied law enforcement agencies by adopting and implementing a new scheduling process. This process reduced the amount of time allied law enforcement personnel had to spend submitting evidence to CRU, which also afforded CRU personnel the opportunity to concentrate on preventing a backlog of StarLIMS case entries.

5. To operate in a planned, prepared, and proactive manner. The Administrative Unit created a spreadsheet to share with the Information Technology Division, which will establish a more efficient and effective way to track all computer technology equipment purchased and maintained by FSD. CRU established a “self-service” appointment scheduler for internal FSD personnel needing assistance from the Unit improving efficiency.

2015 FORENSIC SUPPORT SERVICES SECTION GOALS

1. Promoting a healthy work environment.

- The Photography Unit will once again work with the Department's Risk Manager to create the 2016 MSP Safety Calendar, which benefits every employee by providing them monthly safety tips.

2. Meeting the forensic sciences needs of Maryland and its citizens.

- The StarLIMS Administrators will continue working with the CDS Units to implement full use of the CDS module in StarLIMS increasing efficiency and allowing for better electronic reporting.

3. Maintain accreditation with ASCLD/LAB and compliance with oversight requirements.

- The StarLIMS Quality Assurance module will be implemented allowing for consolidation and organization of quality assurance records.

4. Minimize backlogs and turn around time.

- The testing phase of the newest release of StarLIMS will be completed and the production version implemented in 2015. New modules such as pre-logging, destruction and implementing an interface with the Department's Records Management System will be explored to minimize the workload of employees.
- The Photography Unit will pursue helping the Latent Print Impressions Unit in regards to digital image capture in an effort to help address the latent print backlog.

5. To operate in a planned, prepared, and proactive manner.

- The MSP Office of Strategic Planning will incorporate the new policy regarding submission of syringes for analysis to the Directives. All FSD literature will be updated accordingly.
- The CRU will update all sections of the SOP manual and include new sections, as needed in a more organized and user-friendly design.

The Photography Unit plans to implement a new update in VeriPic. This new update has been tested and training has been developed for deployment that details the changes. The Unit will work closely with ITD to ensure a smooth implementation of this update.

PATTERN EVIDENCE SECTION

The Pattern Evidence Section (PES) is comprised of two units, the Latent Prints/Impressions Unit (LPIU) and the Firearms/Toolmarks Unit (FATMU). The section is responsible for performing the analysis of firearm, toolmark, latent friction ridge impression, footwear, and tire track related evidence associated with criminal casework. The overall operations of the Pattern Evidence Section are overseen by one Forensic Scientist Manager. Current staffing of the LPIU includes a Forensic Scientist Supervisor, one Forensic Scientist Advanced, three Forensic Scientists III, one part-time contractual Forensic Scientist III, and one vacant Forensic Scientist III position. The FATMU is staffed with a Forensic Scientist Supervisor, one Forensic Scientist Advanced, two Forensic Scientists III, one Forensic Scientists II, and four Laboratory Technicians I.

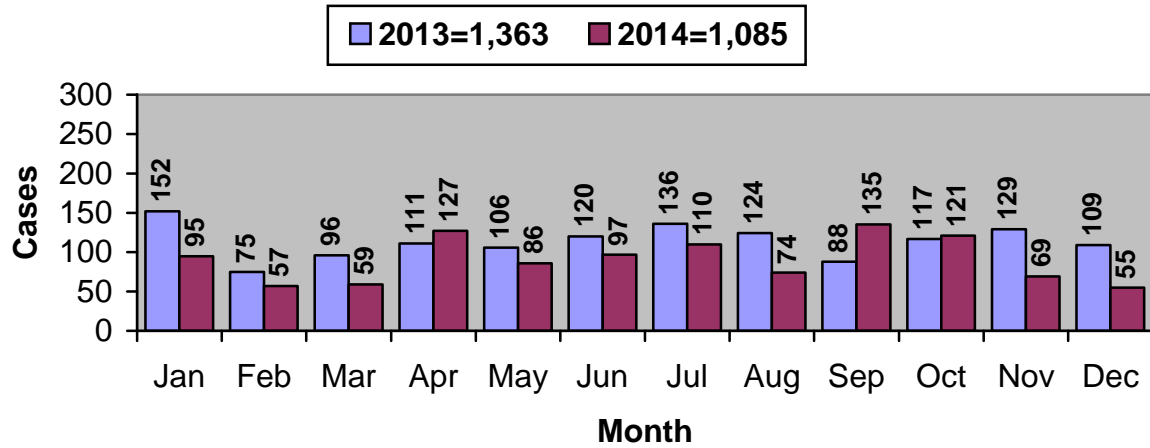
LATENT PRINTS/IMPRESSIONS UNIT

The Latent Prints Sub-Unit performs examinations of latent friction ridge impressions. Various methods utilizing chemicals, powders, and illumination techniques are used for the detection of latent prints. The unit records developed friction ridge impressions using digital capture/photo processes as well as gel and adhesive lifts. Comparisons between unknown to known prints are conducted for purposes of determining if they originated from the same individual. In cases where an identification is effected, a second examiner performs an independent verification. Any unidentified latent prints meeting the system requirements are searched through the Maryland Automated Fingerprint Identification System (MAFIS) and, when warranted, against the FBI database (IAFIS). An official report is issued on all case requests. All case files are administratively and technically reviewed by a qualified independent examiner. Examiners complete an annual external proficiency test administered by Collaborative Testing Services.

The Impressions Sub-Unit is responsible for examinations of footwear and tire track evidence. Various powders, chemicals, and photography are used for the proper recovery of this impression evidence. Images are recorded with digital imaging devices such as scanners, digital cameras, and the Gel Lifter Scan instrument. An analysis and comparison is performed as required for these sub-disciplines. Any footwear images that are suitable are entered and searched through the SICAR database. Tire track images can also be searched in SICAR using the tire tread guide software. In cases where either an “identification” or “could have been made” determination is rendered, a second examiner performs an independent verification. All notes, photos, reports, and case file contents are reviewed through an administrative and technical review process. Examiners complete an annual external proficiency test administered by Collaborative Testing Services.

Casework Statistics

Total Cases Received



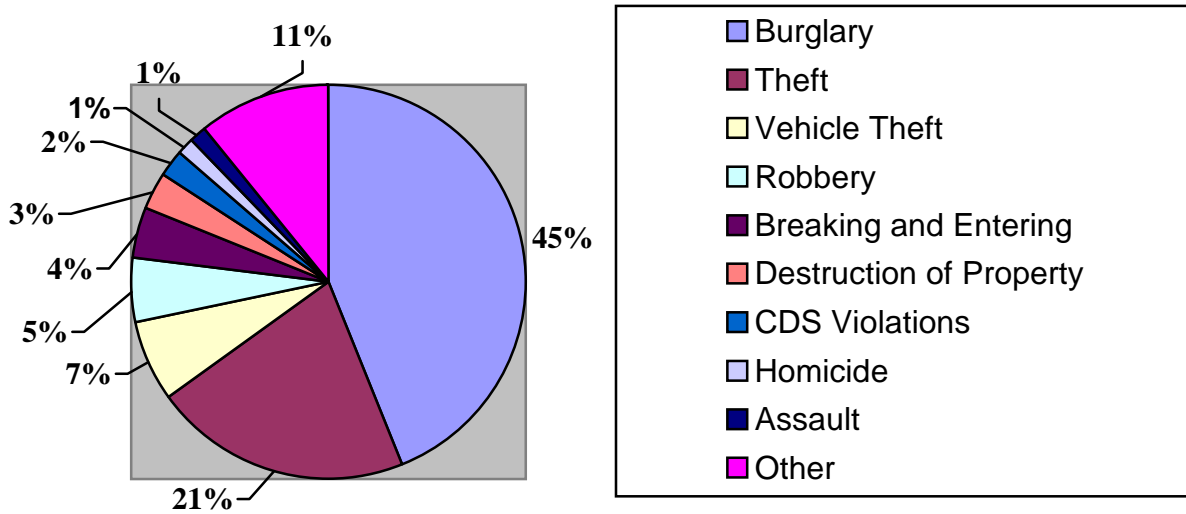
Total MSP Cases Received in 2014 per Installation

MSP Installation	Counties Served	Submissions
MSP-Northeast	Cecil	42
MSP-Westminster	Carroll	24
MSP-Bel Air	Harford	21
MSP-CID	Statewide	20
MSP-Easton	Talbot, Caroline, Dorchester	15
MSP-Frederick	Frederick	14
MSP-McHenry	Garrett	13
MSP-Berlin	Worcester	9
MSP-Centerville	Kent, Queen Anne's	9
MSP-Cumberland	Allegany	9
MSP-Leonardtown	St. Mary's	8
MSP-Prince Frederick	Calvert	8
MSP-Hagerstown	Washington	7
MSP-Homicide	Statewide	6
MSP-Salisbury	Wicomico	6
MSP-Forestville	Prince George's	5
Office of State Fire Marshall	Statewide	5
MSP-College Park	Prince George's	3
MSP-Golden Ring	Baltimore	3
MSP-JFK Highway	Baltimore, Cecil, Harford	3
MSP-Princess Anne	Somerset	3
MSP-Glen Burnie	Anne Arundel	2
MSP-Rockville	Montgomery	1
MSP-LaPlata	Charles	1
MSP-Waterloo	Statewide	1
	TOTAL	238

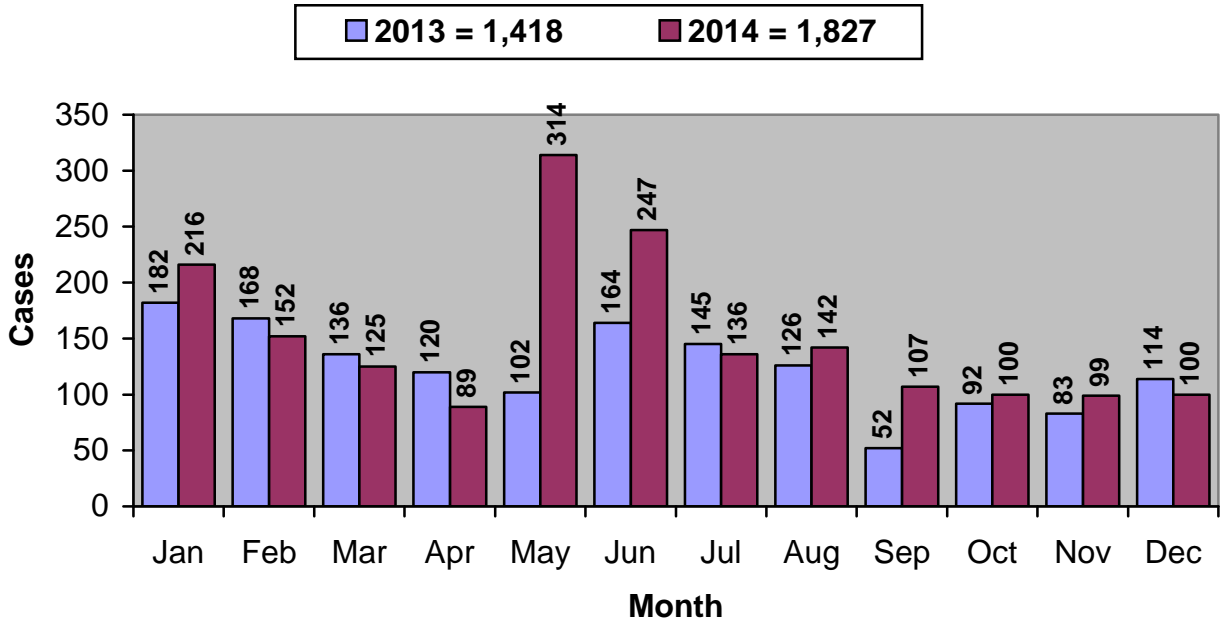
Total Allied Agency Cases Received in 2014 per County

County	Submissions
Worcester	156
Frederick	108
St. Mary's	93
Wicomico	84
Dorchester	70
Carroll	61
Washington	54
Cecil	32
Allegany	31
Queen Anne's	30
Calvert	23
Statewide	21
Caroline	20
Talbot	20
Prince George's	16
Kent	9
Baltimore	7
Somerset	4
Harford	3
Garrett	2
Baltimore City	1
Montgomery	1
Out of State	1
TOTAL	847

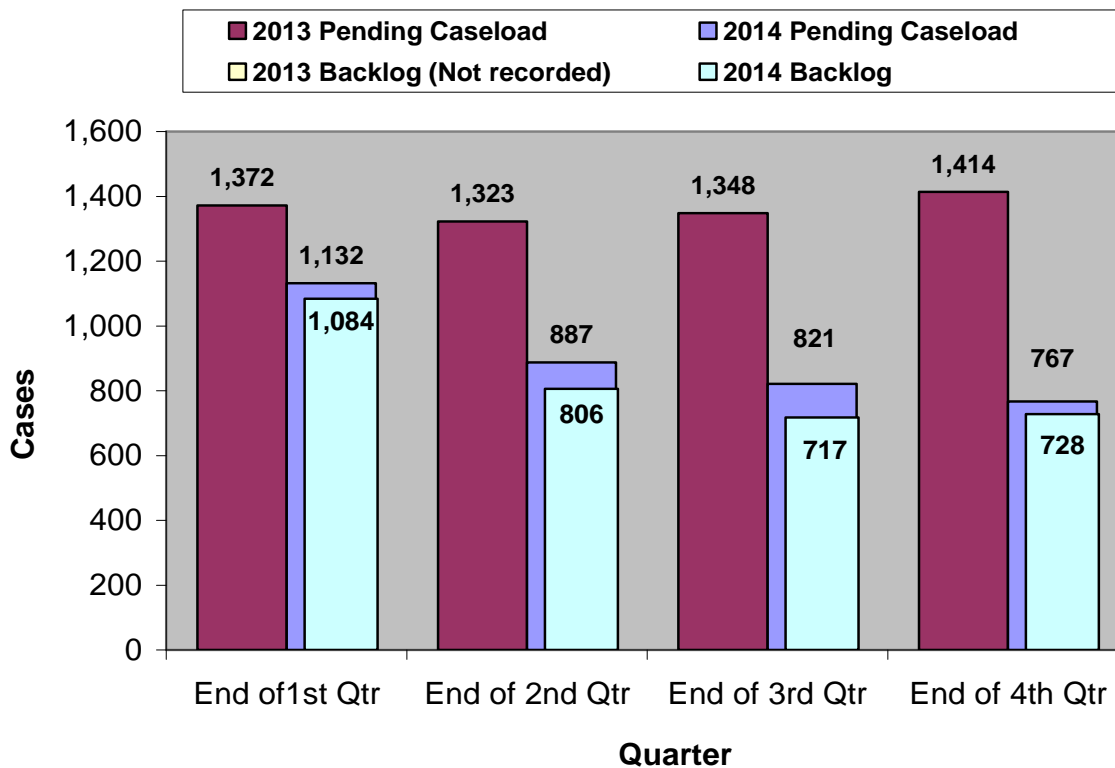
Total Cases Received in 2014 per Crime Type



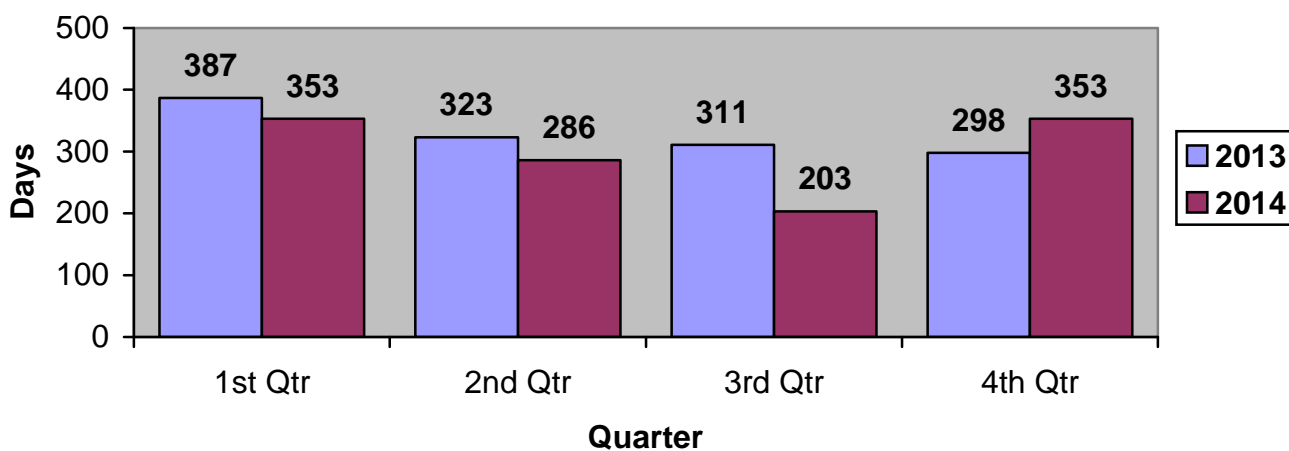
Total Cases Completed per Month



Pending Caseload and Backlog per Quarter

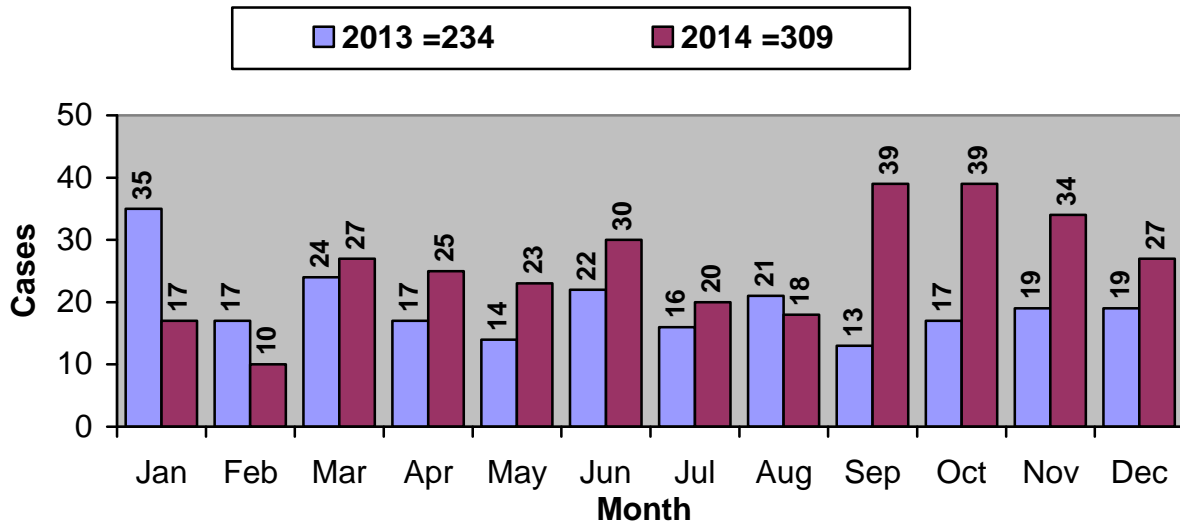


Average Turn Around Time per Quarter

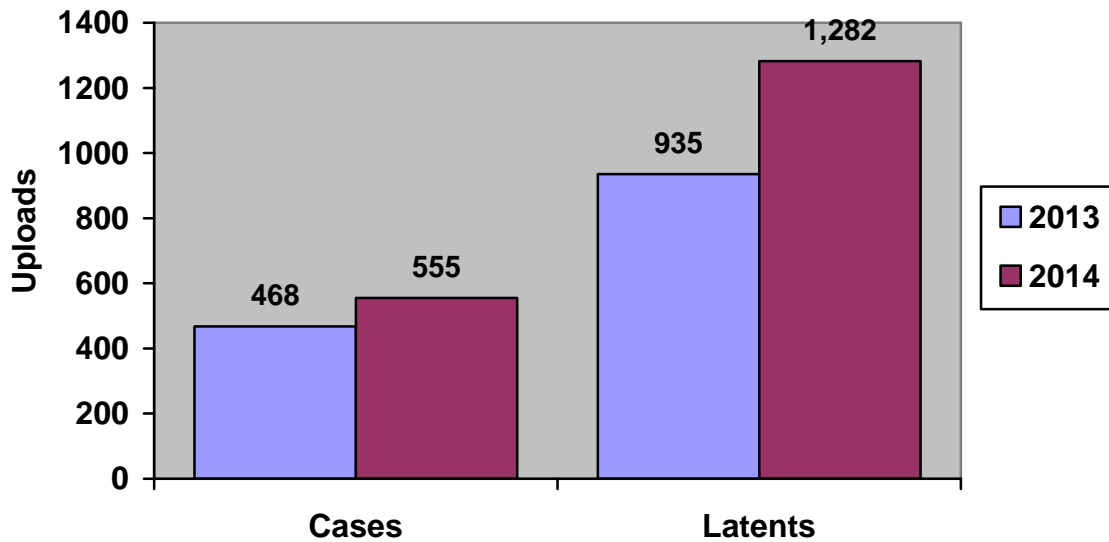


Database Statistics

Total MAFIS Case Hits Reported per Month



Total Uploads to MAFIS per Year



FIREARMS/TOOLMARKS UNIT

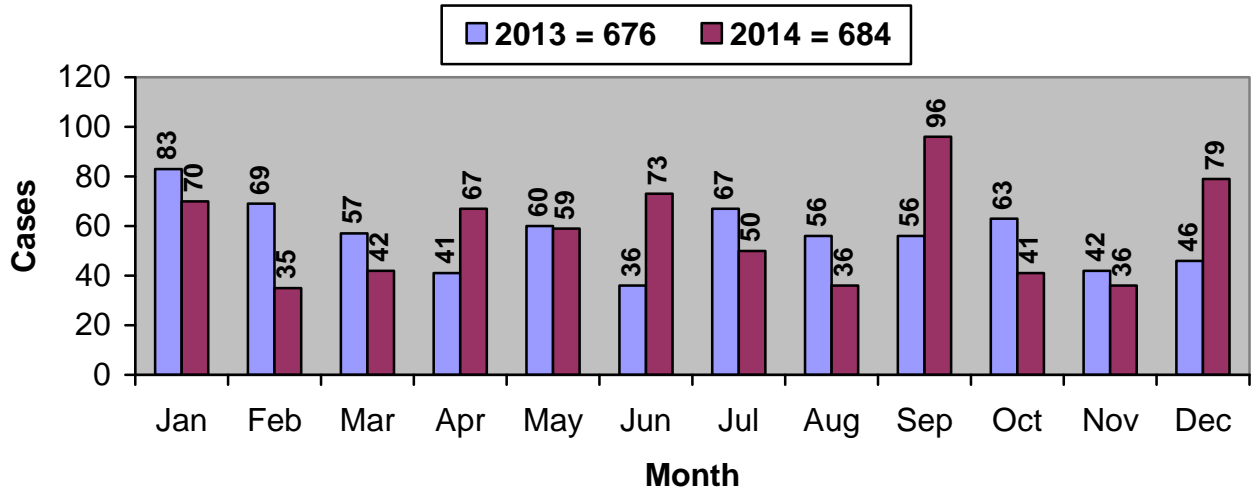
The Firearms/Toolmarks Unit (FATMU) provides microscopic, chemical and functional examination of firearms and firearm related evidence. Examiners in this Unit also perform toolmark examinations, muzzle to distance determination, shot patterns, and serial number restorations. The FATMU follows all lab protocols in place to include having a second examiner verify possible identifications on the comparison microscope. Every case in the FATMU has administrative and technical review before being completed. The unit has implanted two programs to assist with reduction of turn around time for casework. These programs are Operation Test Shot (OTS) and Walk-In Test Fire (WITF). OTS involves supplying the allied law enforcement agencies with Forensic Buddy Systems (portable firearm canisters). The Forensic Buddy System enables the agencies to test fire handguns at their location and send fired bullets/cartridge cases in pristine condition to the FATMU. The fired cartridge cases, if eligible, will be entered into the National Integrated Ballistic Identification Network system (NIBIN). The WITF program involves allied law enforcement agencies bringing the firearms directly to the FATMU for functional examination allowing the representative to visually witness the test fire. This process aids in having that representative testify on behalf of the examiner on functionality.

The FATMU also provides a service to the Maryland Handgun Roster Board (HRB). The Board is responsible for evaluating new firearms for compliance with Maryland regulations and determining if they should be approved for sale in the state.

In accordance to the “Responsible Gun Bill Act of 2000” the FATMU is responsible for the tracking of cartridge case samples submitted from the purchase of new handgun sales in the state of Maryland. The unit verifies the submitter’s information and then enters the data into a database system.

Casework Statistics

Total Cases Received per Month



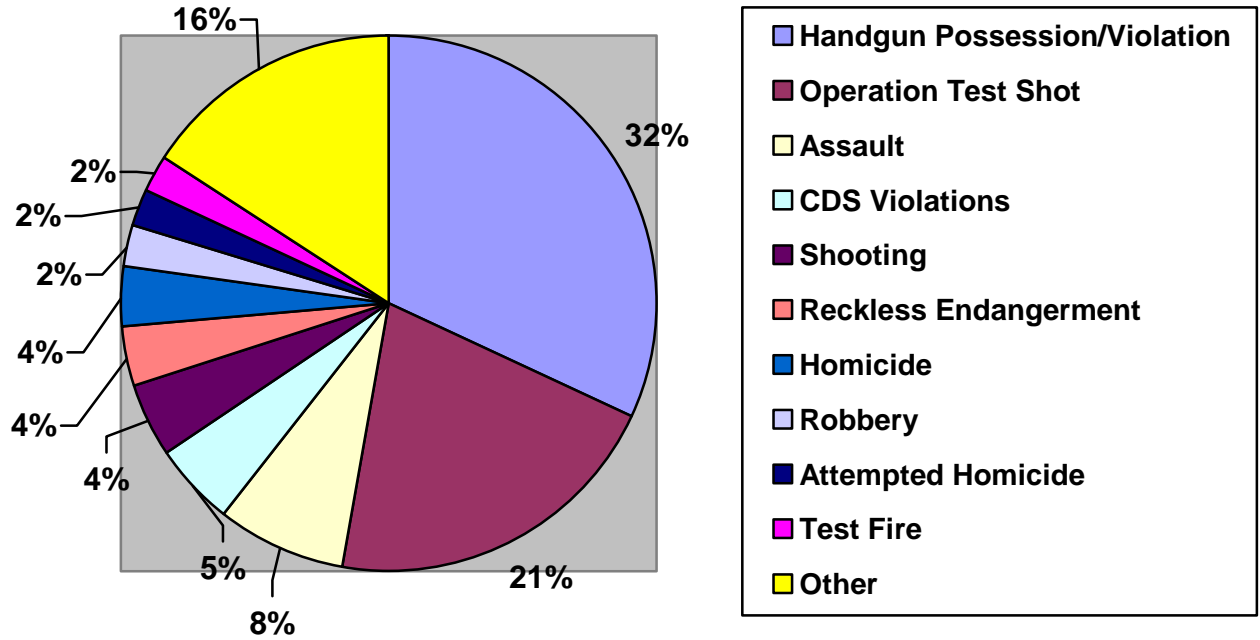
Total MSP Cases Received in 2014 per Installation

Installation	Counties Served	Submissions
MSP-CID	Statewide	42
MSP- North East	Cecil	21
MSP- JFK Highway	Cecil, Harford, Baltimore	14
MSP- Frederick	Frederick	12
MSP- Homicide	Statewide	10
MSP- Easton	Caroline, Dorchester, Talbot	9
MSP- Golden Ring	Baltimore	9
MSP- Forestville	Prince George's	7
MSP- Princess Anne	Somerset	7
MSP- LaPlata	Charles	7
MSP- Westminster	Carroll	7
MSP- Bel Air	Harford	4
MSP- Berlin	Worcester	4
MSP- Centreville	Kent, Queen Anne's	4
MSP- McHenry	Garrett	4
MSP- Cumberland	Allegany	3
MSP- Leonardtown	St. Mary's	3
MSP- Glen Burnie	Anne Arundel	2
MSP- Hagerstown	Washington	1
MSP- Prince Frederick	Calvert	1
	TOTAL	171

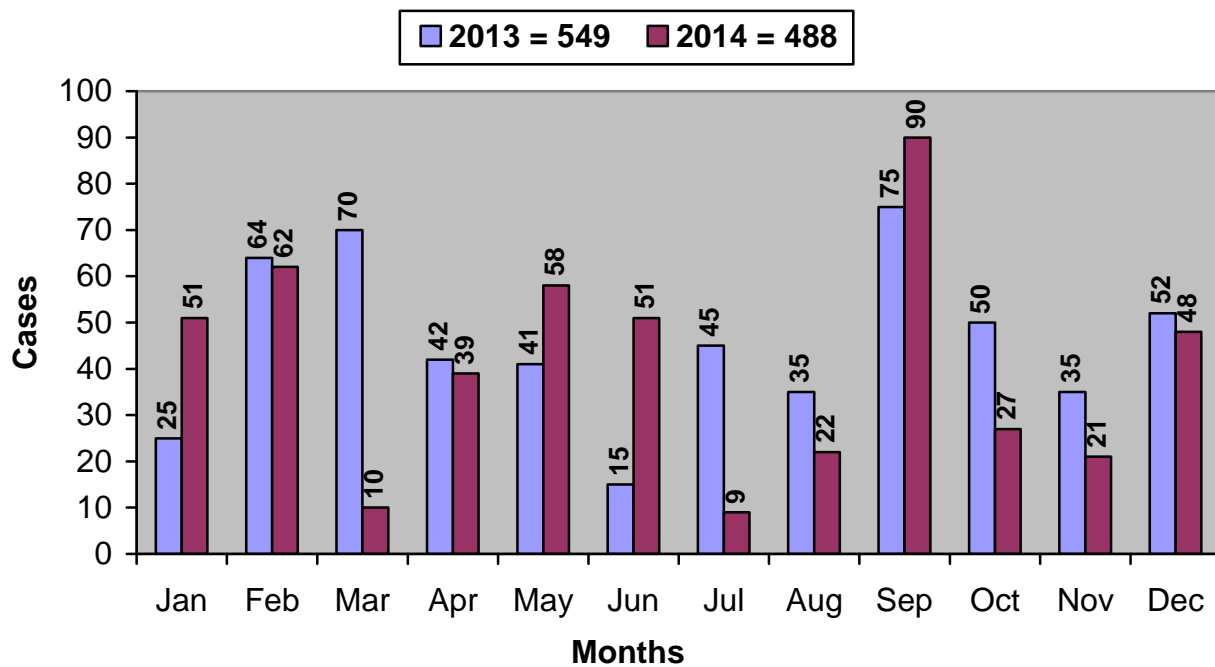
Total Allied Agency Cases Received in 2014 per County

County	Submissions
Anne Arundel	148
Harford	70
Cecil	56
Charles	52
Statewide	36
Frederick	32
Wicomico	22
Worcester	22
Calvert	18
Washington	17
Carroll	10
Howard	6
Dorchester	4
Queen Anne's	4
Kent	3
St. Mary's	3
Caroline	2
Prince George's	2
Somerset	2
Allegany	1
Baltimore	1
Baltimore City	1
Talbot	1
TOTAL	513

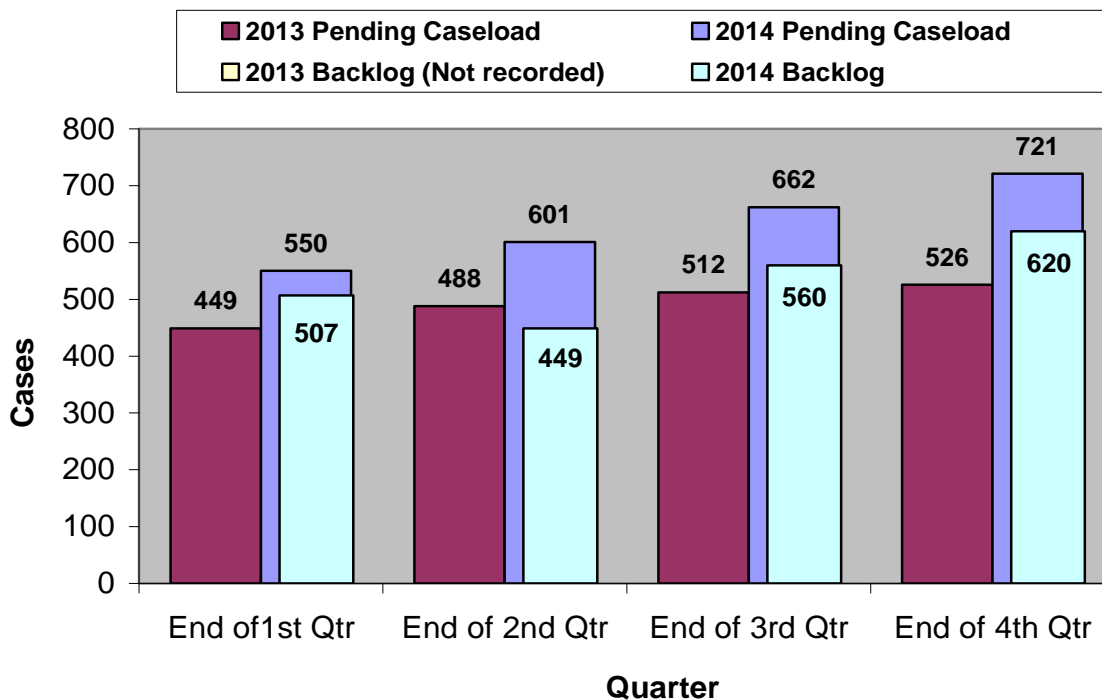
Total Cases Received in 2014 per Crime Type



Total Cases Completed per Month

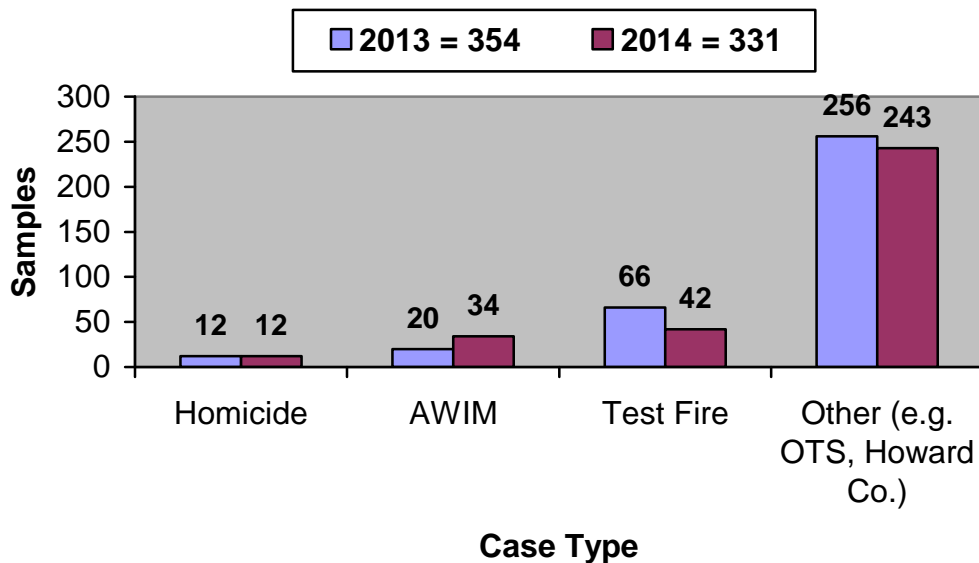


Pending Caseload and Backlog per Quarter

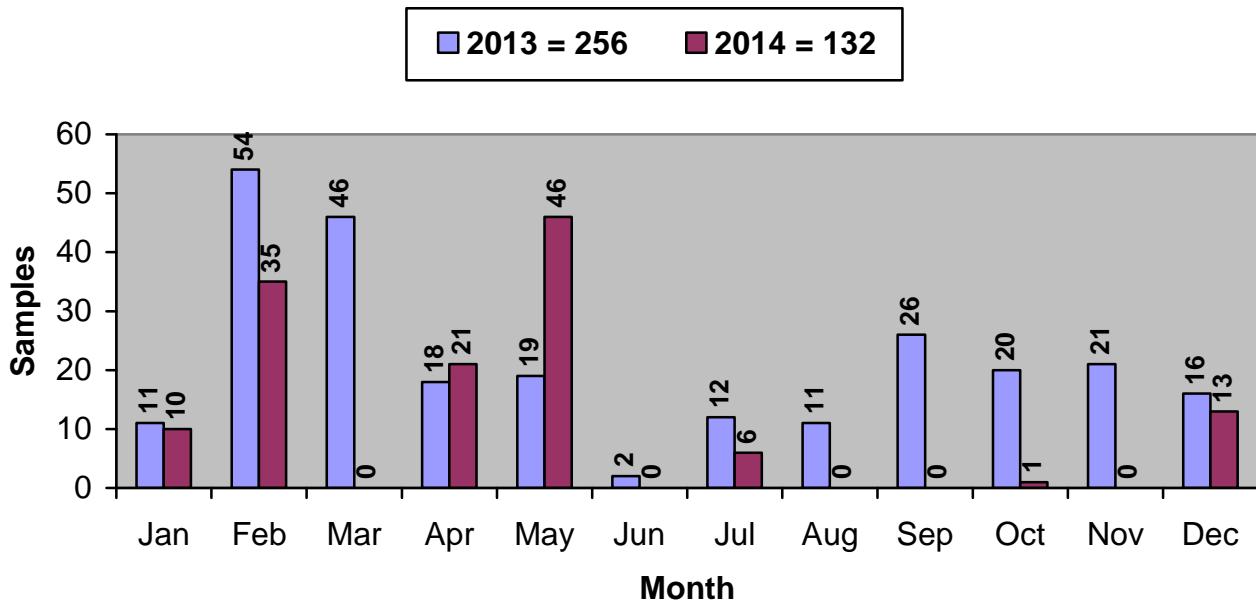


Database Statistics

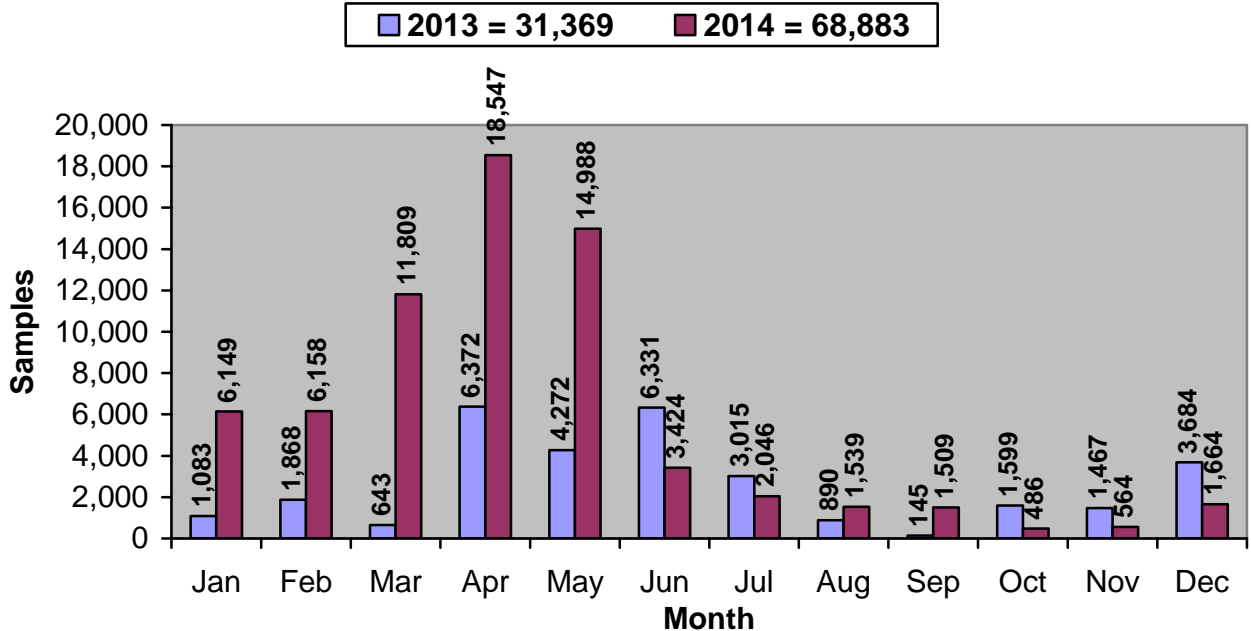
Uploads to NIBIN per Case Type



Operation Test Shot Samples Completed per Month



MSRD Samples Processed per Month



2014 PATTERN EVIDENCE SECTION ACCOMPLISHMENTS

- 1. To promote a healthy work environment.** Members of the FATMU identified by Health Services participated in the annual medical monitoring for audio sensitivity and blood lead levels to assess any potential damaging impact from their work with shooting firearms. All section members successfully completed instruction and testing in a biohazard safety program. Policies regarding safety were reviewed and updated as necessary to specifically address maintaining a healthy work environment. Regularly scheduled cleanings of the work areas were completed.
- 2. To meet the forensic science needs of Maryland and its citizens.** Staffing schedules were maintained to provide support on a regular basis. To meet urgent needs, overtime or compensatory leave was used to facilitate the forensic examinations as necessary. The last of four Laboratory Technician I positions along with four temporary employees provided for by the Handgun Safety Legislation were hired. The vacant Forensic Scientist II position in FATMU was filled; the appointee is performing limited casework, and has started training to become a competent Forensic Scientist III. Contract examiners from a contracted outsourcing company were employed permitting LPIU staff to focus on recent offense submissions.
- 3. To maintain accreditation with ASCLD/LAB and compliance with all oversight requirements.** All PES standard operating procedures were reviewed for compliance with ASCLD/LAB accreditation requirements. Where necessary changes were implemented. A surveillance assessment by an ASCLD/LAB auditor was completed and the PES was found to be in total compliance during the inspection. This included proficiency testing, testimony monitoring, training, policy review, reporting, and other mandated topics.
- 4. To minimize backlogs and turn around time.** A contract was awarded to provide outsourcing of backlogged latent print casework. A part-time contractual Forensic Scientist III has been processing additional latent print cases. A Laboratory Technician took over responsibility for clerical duties previously performed by examiners thus increasing the time available to perform forensic examinations. The FATMU continued the Operation Test Shot and Walk-In Test Fire programs, thus preventing many cases from being added to the existing backlog.
- 5. To operate in a planned, prepared, and proactive manner.** Policies implemented to assure the timely completion of laboratory examinations which required prioritization to meet specific needs of investigators and prosecutors were adhered to. Biweekly meetings between the FSD and the MD Dept. of Public Safety and Correctional Services were held to maximize operation for forensic related use of the Maryland Automated Fingerprint Identification System. This included operational testing of AFIS workstations at the Hagerstown laboratory in 2015.

2015 PATTERN EVIDENCE SECTION GOALS

In order to operate in a planned, prepared, and proactive manner:

- Complete the testing and implementation of AFIS software changes so that the LPIU can take full advantage of all of the offered features of the FBI's Next Generation IAFIS
- Work with DPSCS to schedule AFIS User meetings to promote enhanced operation of and training on the system
- Complete quarterly in progress evidence storage inventories with no discrepancies
- Continue training of Forensic Scientist II to assume duties of a Forensic Scientist III
- Train FATMU Laboratory Technicians to meet prerequisite for ATF training and certification in BrassTrax encoding, and assume the related duties
- Communicate with contributors specifically to increase awareness of and participation in the Walk-In Test Fire program
- To continuously monitor the effectiveness of the Operation Test Shot program, and reallocate equipment and/or train additional operators as deemed to be necessary.

To meet the forensic science needs of Maryland and its citizens:

- Encode and search cartridge case samples submitted for the MSRD associated with firearms reported as having been stolen in BrassTrax to determine if they may be linked to other law enforcement investigations
- To encourage clients (Prosecutors, Defense Attorneys, MSP personnel, Allied Agency Personnel, etc.) to give feed back by completing satisfaction surveys.

To minimize backlogs and turn around time:

- Establish a process to screen backlogged submissions to eliminate those no longer requiring examination from the current backlog
- To use managed comp time sessions to work on backlogged casework
- To continue to employ an FS III contractual position in the Pikesville Lab to assist with addressing LPIU case work
- To work with FSD administration and HRD in an effort to identify, interview and hire two experienced qualified FS III Latent Print examiners, for the purpose of staffing and opening the Hagerstown LPIU Lab
- To work with FSD administration in procuring funding to continue to utilize the current outsourcing agreement with Ron Smith and Associates.

CHEMISTRY SECTION

The Chemistry Section is responsible for performing Controlled Dangerous Substances (CDS) analysis on submitted evidence and Toxicology analysis of blood for alcohol and drugs. The Chemistry Section consists of the following four Units: the CDS-Pikesville Unit, CDS-Berlin Unit, CDS-Hagerstown Unit, and Toxicology Unit. The CDS Units focus on identifying submitted evidence as being a specific type of drug while the Toxicology Unit focuses on identifying alcohol and drugs in blood taken from individuals suspected of driving while intoxicated/impaired. The Chemistry Section Manager oversees the work of all four units.

The CDS-Pikesville Unit consists of one Forensic Scientist Supervisor, one Forensic Scientist Advanced, and five Forensic Scientists III. In addition, two Allied Agency Chemists work in the CDS-Pikesville laboratory. One Allied Agency Chemist is employed by the Howard County Police Department. The Allied Agency Chemist employed by Frederick County transferred to the Hagerstown laboratory to better serve the needs of the State's Attorney's Office. A newly hired chemist is employed by the Cecil County State's Attorney's Office and is currently in training. One Forensic Scientist position is vacant.

The CDS-Berlin Unit consists of one Forensic Scientist Supervisor, three Forensic Scientists III, and one Forensic Inventory Control Officer. The CDS-Berlin Unit operates out of the Berlin Regional Laboratory located at the MSP-Berlin Barrack.

The CDS-Hagerstown Unit consists of one Forensic Scientist Supervisor, three Forensic Scientists III, and one contractual Inventory Control Specialist. In addition, one Allied Agency Chemist is employed by the Frederick County State's Attorney's Office. One Forensic Scientist position is vacant. The CDS-Hagerstown Unit operates out of the Hagerstown Regional Laboratory located at the MSP-Hagerstown Barrack.

The Toxicology Unit consists of one Supervisor and one Forensic Scientist III. One Forensic Scientist position is vacant. The Toxicology Unit operates out of the main laboratory in Pikesville.

CDS UNITS

In order to confirm the presence of Controlled Dangerous Substances (CDS) in a sample, several different types of analysis are performed in the CDS Units, including microscopy, color tests, microcrystalline tests, Gas Chromatography, Gas Chromatography/Mass Spectrometry, and Fourier Transform Infrared Spectrophotometry. Another important component of CDS analysis is obtaining accurate net and gross weights of the suspected CDS material through the use of analytical balances, benchtop balances, and bulk scales. In October of 2014, a law was enacted leading to the decriminalization of marijuana under 10 grams. This has greatly affected the number of submissions to the CDS Units.

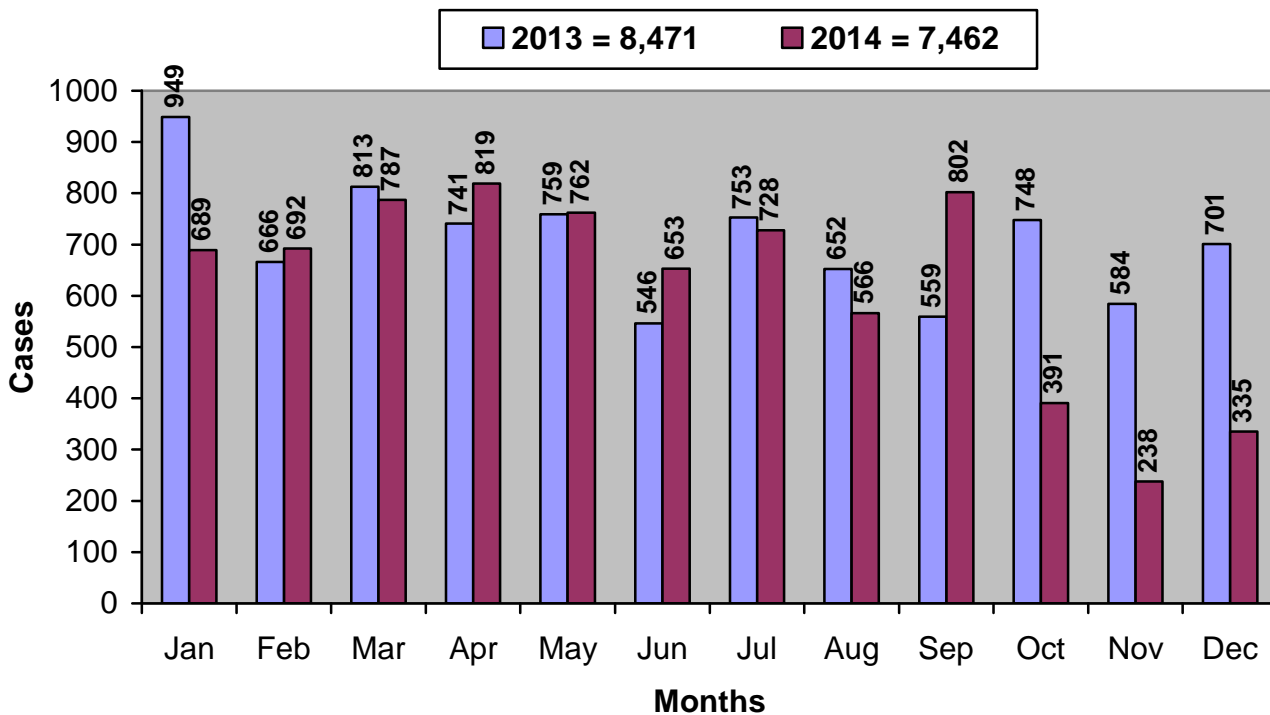
The CDS Units submit monthly reports to the National Forensic Laboratory Information System (NFLIS) that documents the type and number of drugs detected in casework. These reports

provide the DEA with current and accurate trends that can be used by law enforcement and policy makers to address the nation’s drug problem.

CDS-PIKESVILLE UNIT

The Pikesville CDS laboratory services primarily the Central Maryland counties including Baltimore City, Baltimore County, Harford County, Cecil County, Anne Arundel County, Prince George’s County, St. Mary’s County, Calvert County, Charles County, Howard County, and Frederick County.

Total Cases Received per Month



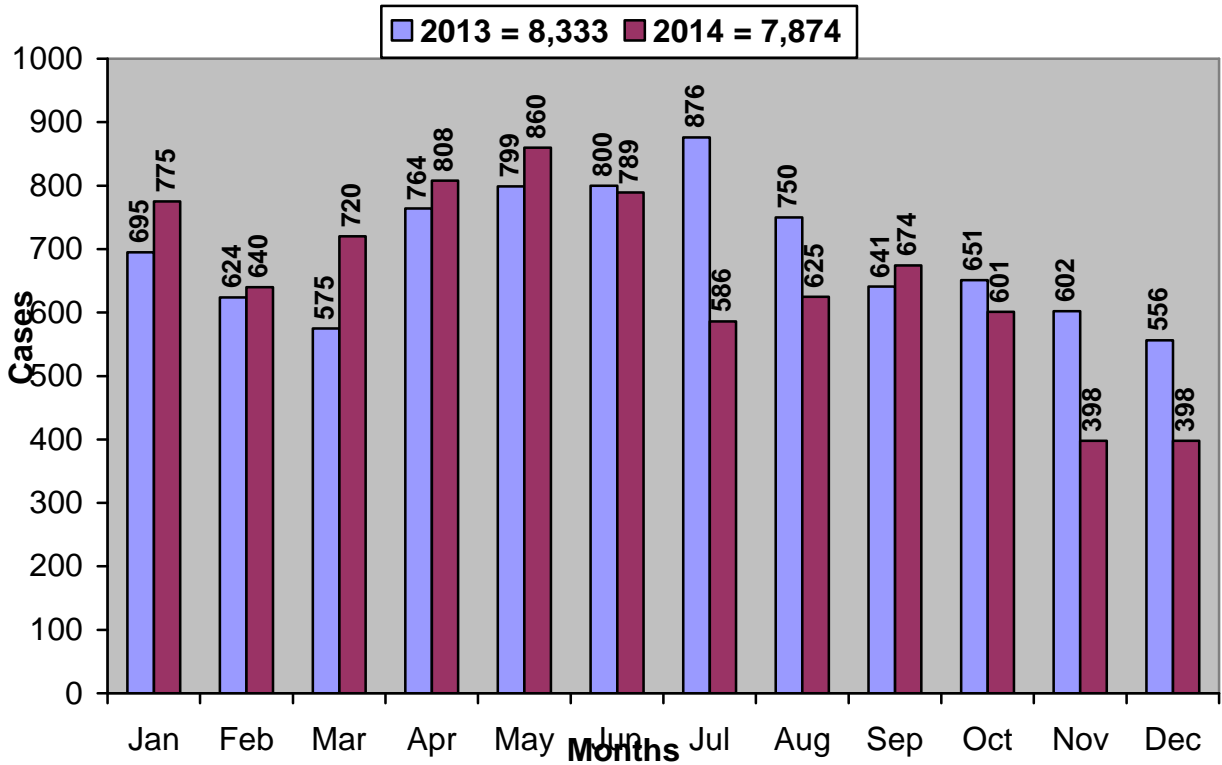
Total MSP Cases Received in 2014 per Installation

MSP Installation	Counties Served	Submissions
MSP-JFK Highway	Cecil, Harford, Baltimore	344
MSP-Prince Frederick	Calvert	239
MSP-CID	Statewide	224
MSP-Golden Ring	Baltimore	195
MSP-North East	Cecil	189
MSP-Glen Burnie	Anne Arundel	164
MSP-LaPlata	Charles	164
MSP-Bel Air	Harford	150
MSP-College Park	Prince George's	133
MSP-Leonardtown	St. Mary's	123
MSP-Forestville	Prince George's	106
MSP-Waterloo	Howard	76
MSP-CVED	Statewide	3
MSP-Homicide	Statewide	1
	TOTAL	2,111

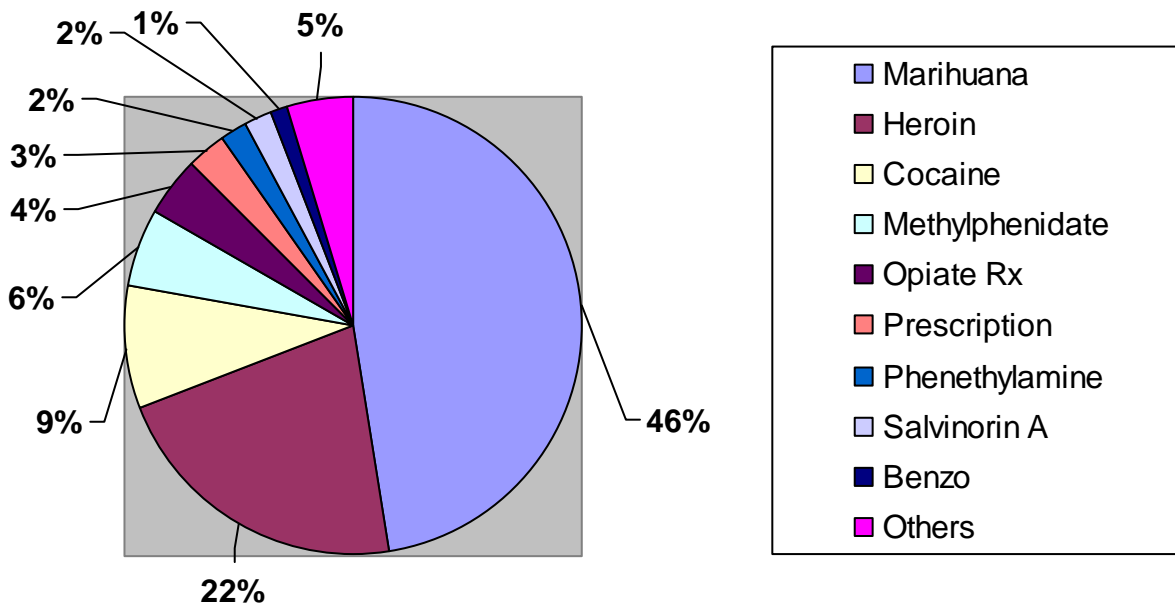
Total Allied Agency Cases Received in 2014 per County

County	Submissions
Charles	1,175
Howard	933
Harford	845
Calvert	644
Statewide	532
Cecil	459
St. Mary's	432
Frederick	134
Prince George's	122
Baltimore	35
Montgomery	20
Baltimore City	9
Anne Arundel	7
Baltimore	3
Montgomery	1
TOTAL	5,351

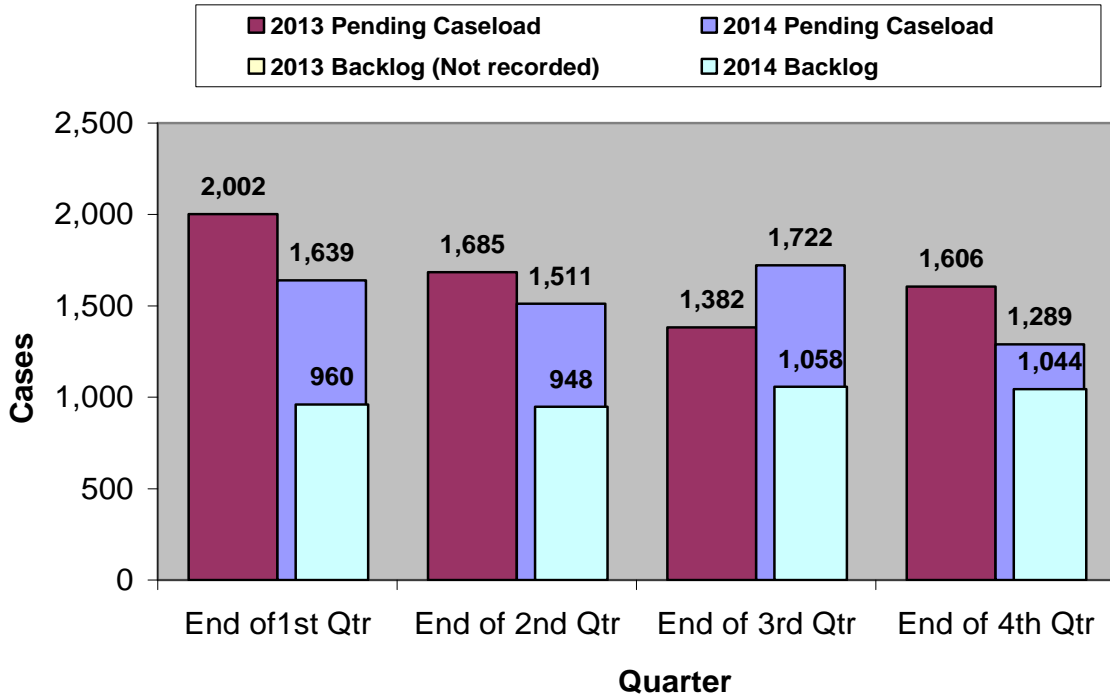
Total Cases Completed per Month



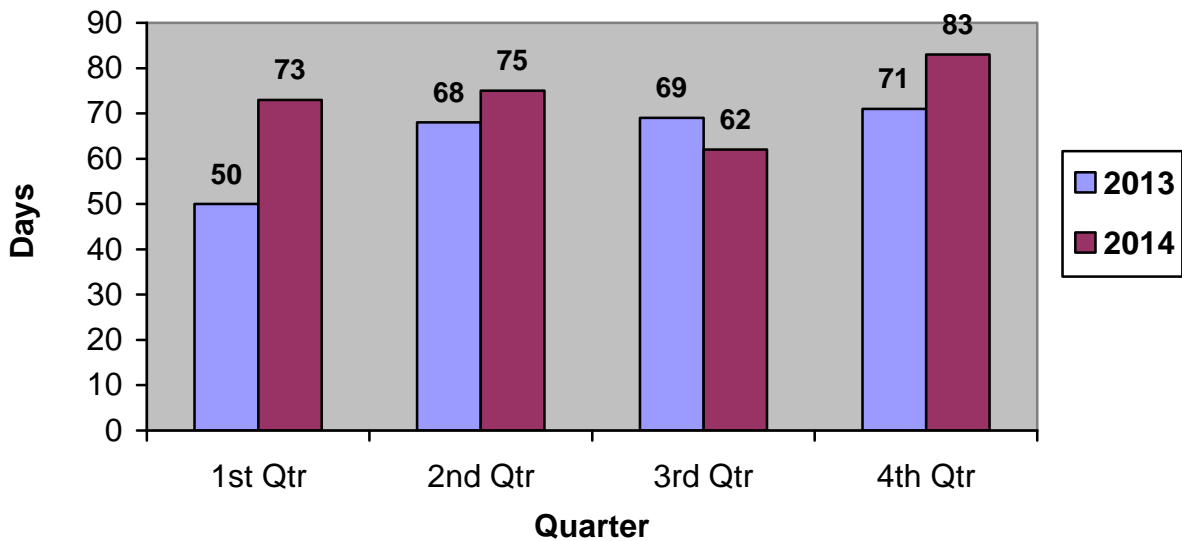
Total Analyses Reported in 2014 per Drug Type



Pending Caseload and Backlog per Quarter



Average Turn Around Time per Quarter

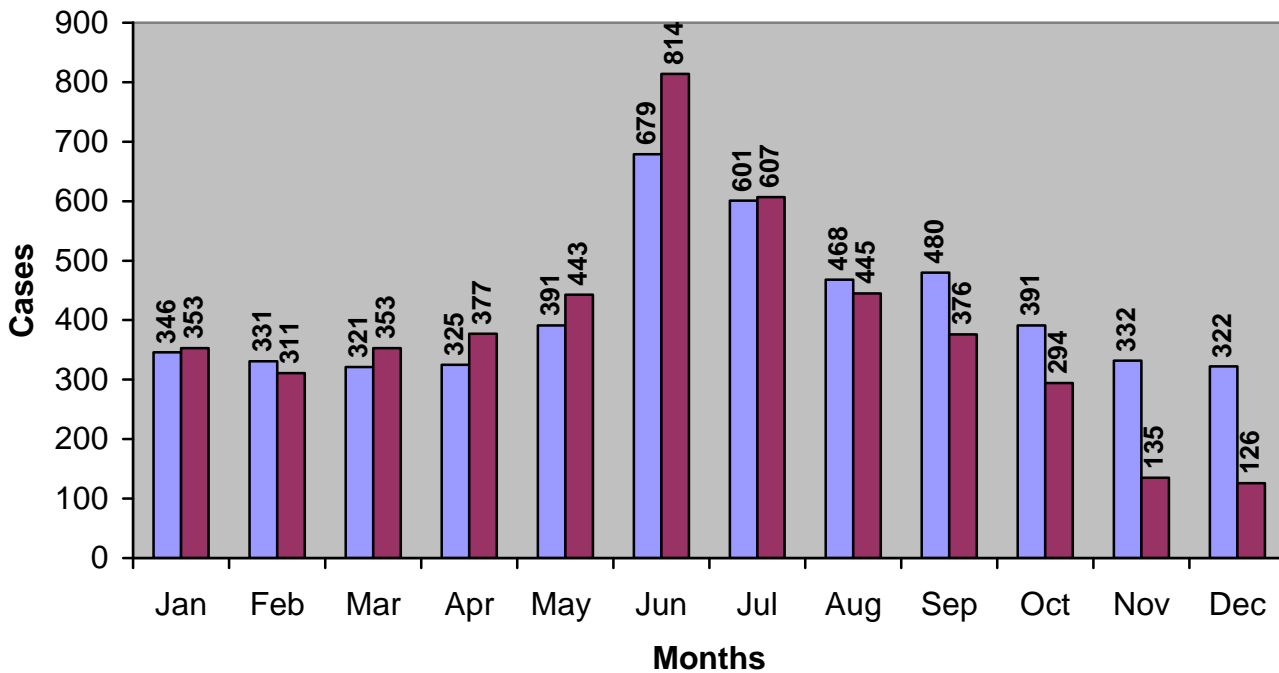


CDS-BERLIN UNIT

The CDS-Berlin laboratory services primarily the Eastern Maryland counties including Caroline County, Dorchester County, Kent County, Queen Anne's County, Somerset County, Talbot County, Wicomico County, and Worcester County. It should be noted that Berlin also took on a significant caseload this year from Cecil County.

Total Cases Received per Month

2013 = 4,987 2014 = 4,634



Total MSP Cases Received in 2014 per Installation

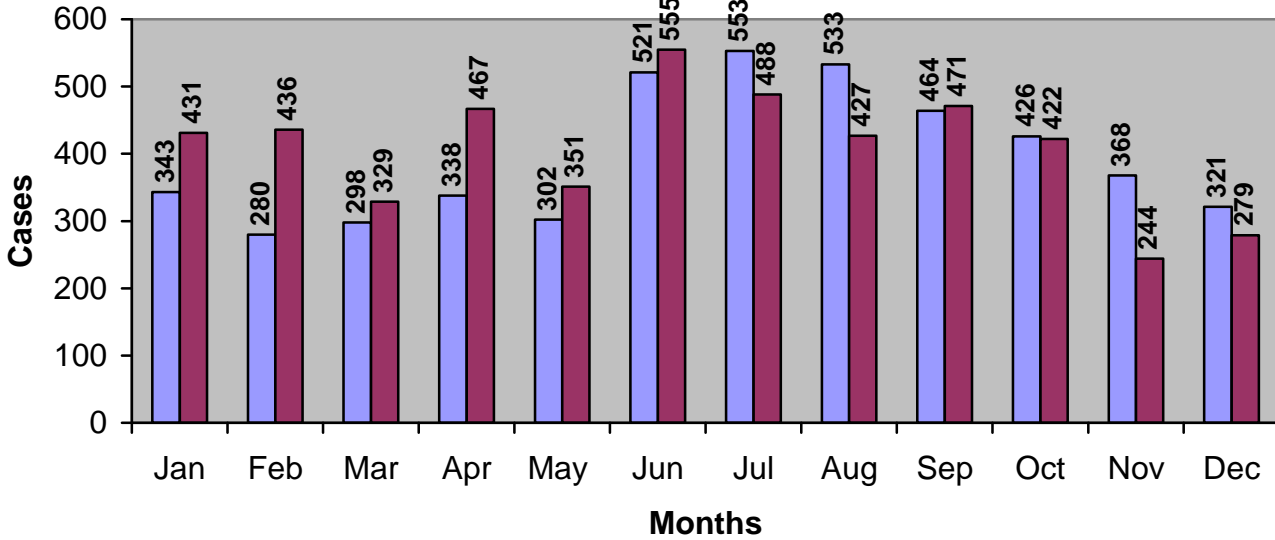
MSP Installation	Counties Served	Submissions
MSP-Salisbury	Wicomico	344
MSP-CID	Statewide	244
MSP-Centerville	Kent, Queen Anne's	201
MSP-Easton	Caroline, Dorchester, Talbot	160
MSP-Berlin	Worcester	147
MSP-Princess Anne	Somerset	74
MSP-DED/CEC	Statewide	14
MSP-Homicide	Statewide	3
	TOTAL	1,187

Total Allied Agency Cases Received in 2014 per County

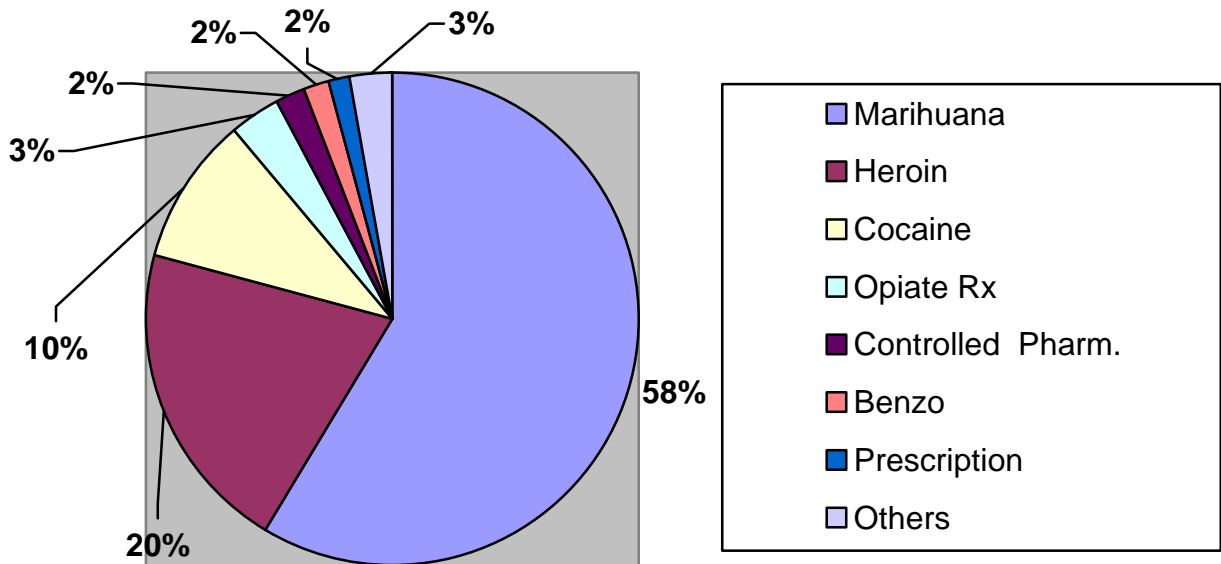
County	Submissions
Worcester	1,457
Wicomico	729
Dorchester	327
Talbot	267
Cecil	160
Caroline	135
Kent	134
Queen Anne's	115
Somerset	114
Statewide	9
TOTAL	3,447

Total Cases Completed per Month

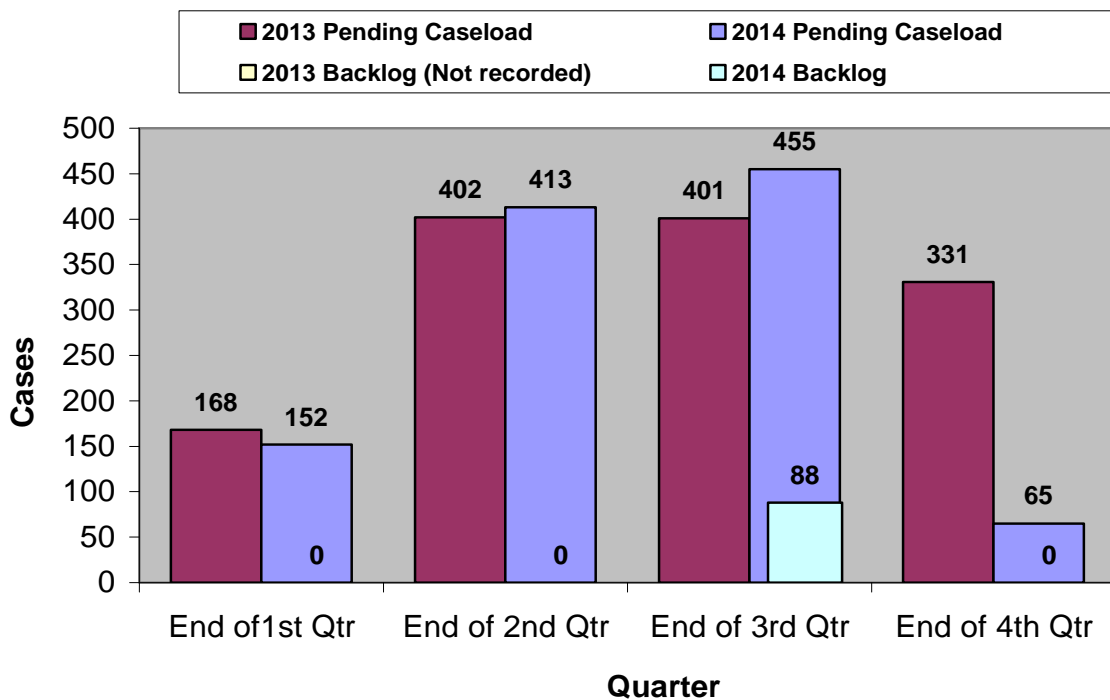
■ 2013 = 4,747 ■ 2014 = 4,900



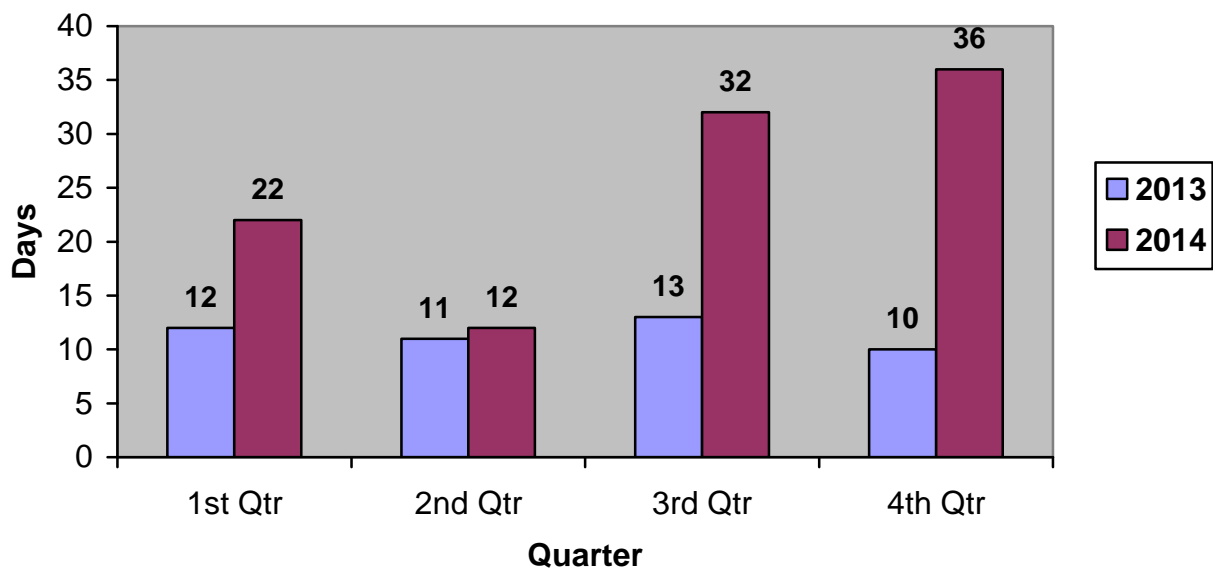
Total Analyses Reported in 2014 per Drug Type



Pending Caseload and Backlog per Quarter



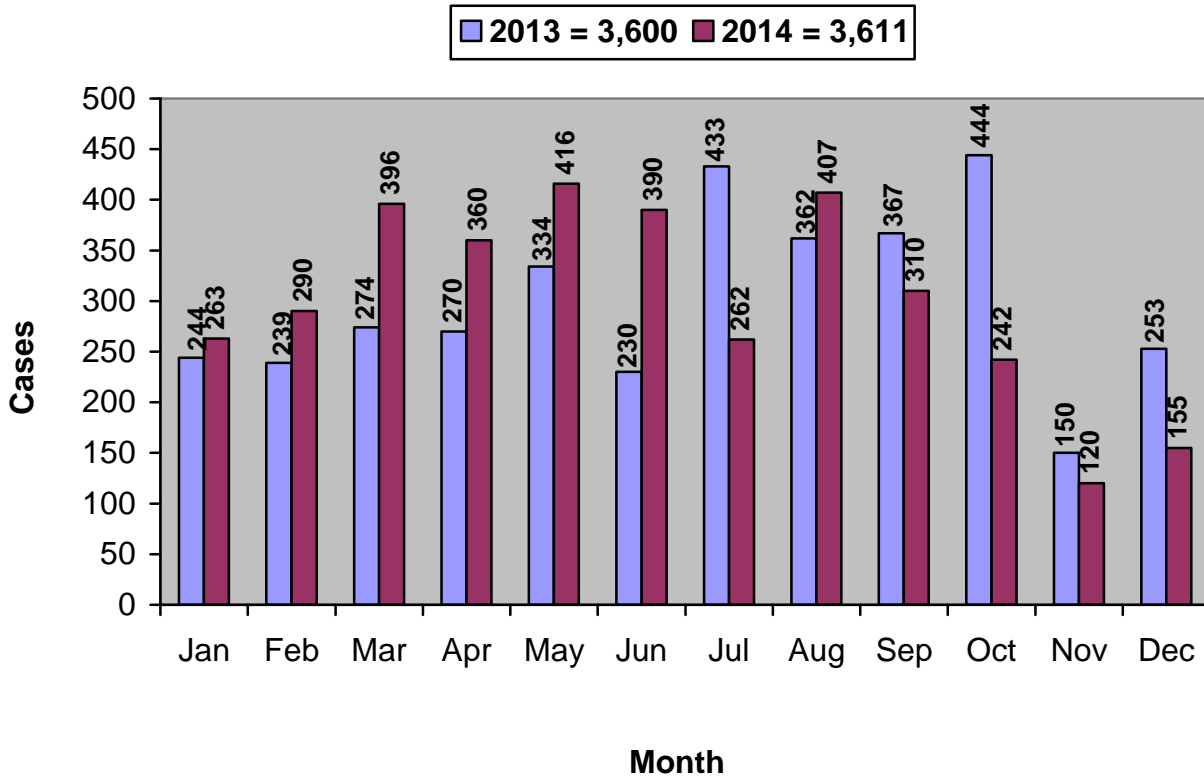
Average Turn Around Time per Quarter



CDS-HAGERSTOWN UNIT

The Hagerstown CDS laboratory services primarily the Western Maryland counties including Washington County, Carroll County, Allegany County, Garrett County, Montgomery County, and Frederick County. It should be noted that Hagerstown also took on a significant caseload from Harford County this year.

Total Cases Received per Month



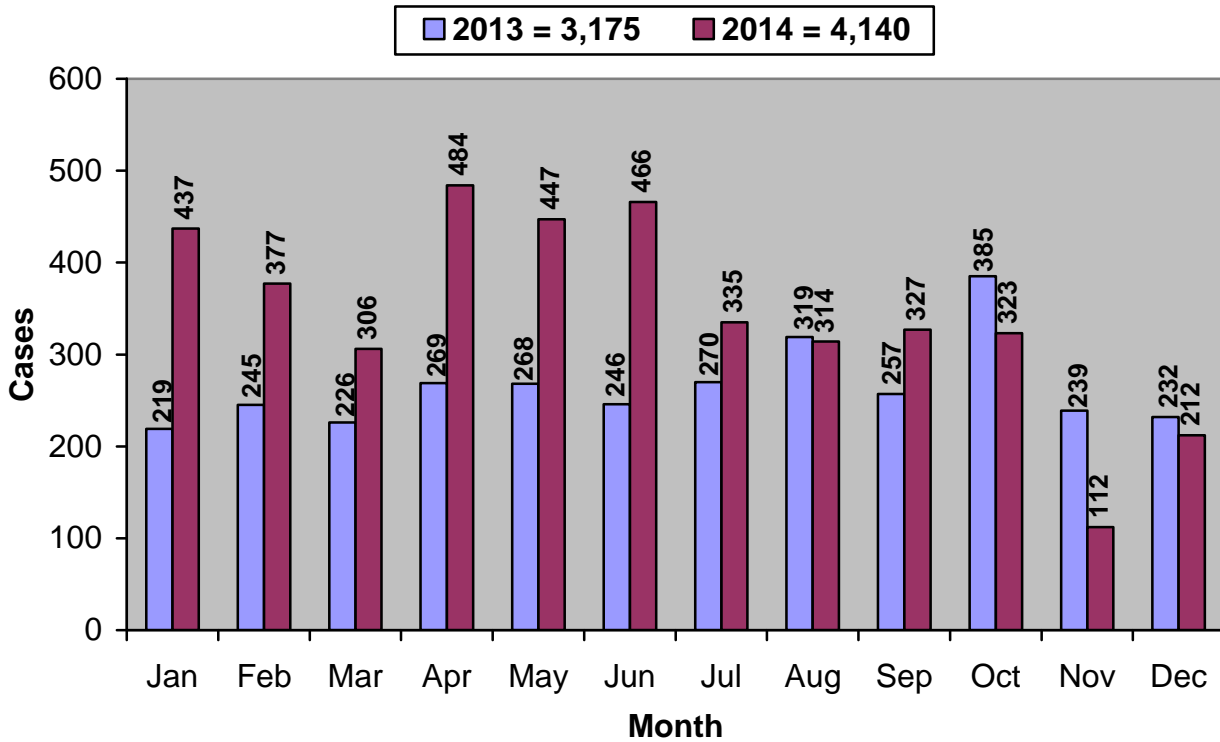
Total MSP Cases Received in 2014 per Installation

MSP Installation	Counties Served	Submissions
MSP-Westminster	Carroll	324
MSP-McHenry	Garrett	276
MSP-Frederick	Frederick	177
MSP-Hagerstown	Washington	145
MSP-Rockville	Montgomery	129
MSP-Cumberland	Allegany	84
MSP-CID	Statewide	18
	TOTAL	1,153

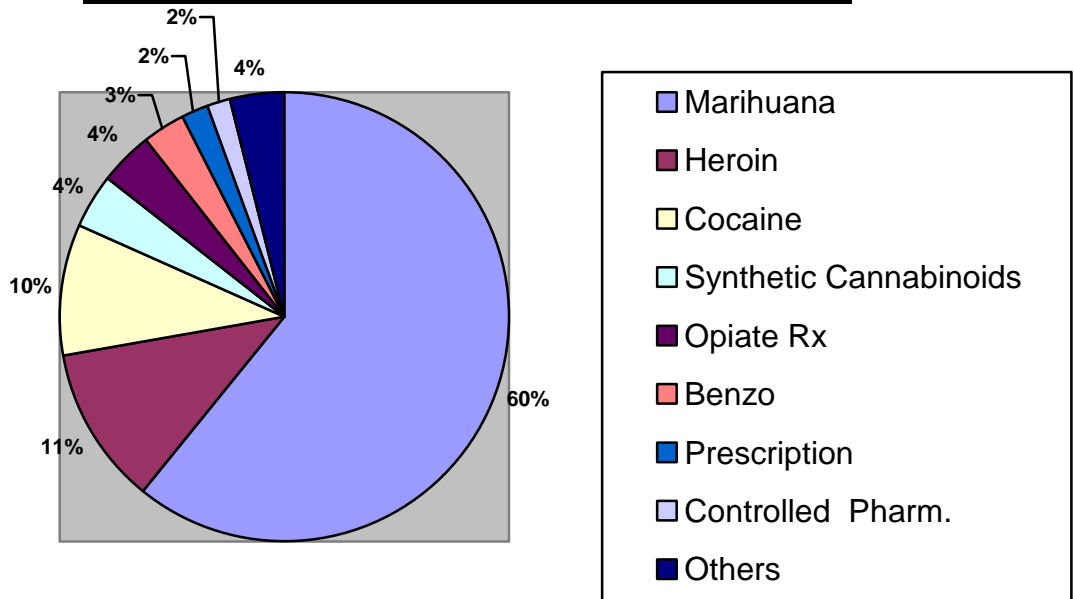
Total Allied Agency Cases Received in 2014 per County

County	Submissions
Frederick	1,122
Allegany	558
Carroll	515
Harford	94
Garrett	88
Washington	44
Statewide	37
TOTAL	2,458

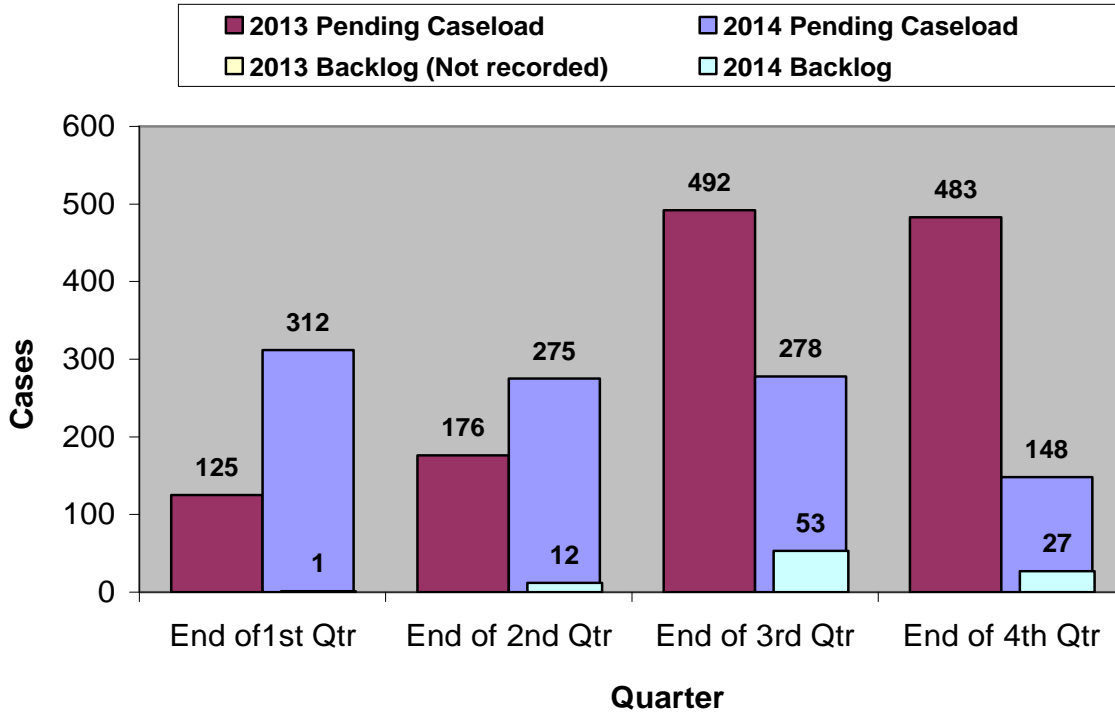
Total Cases Completed per Month



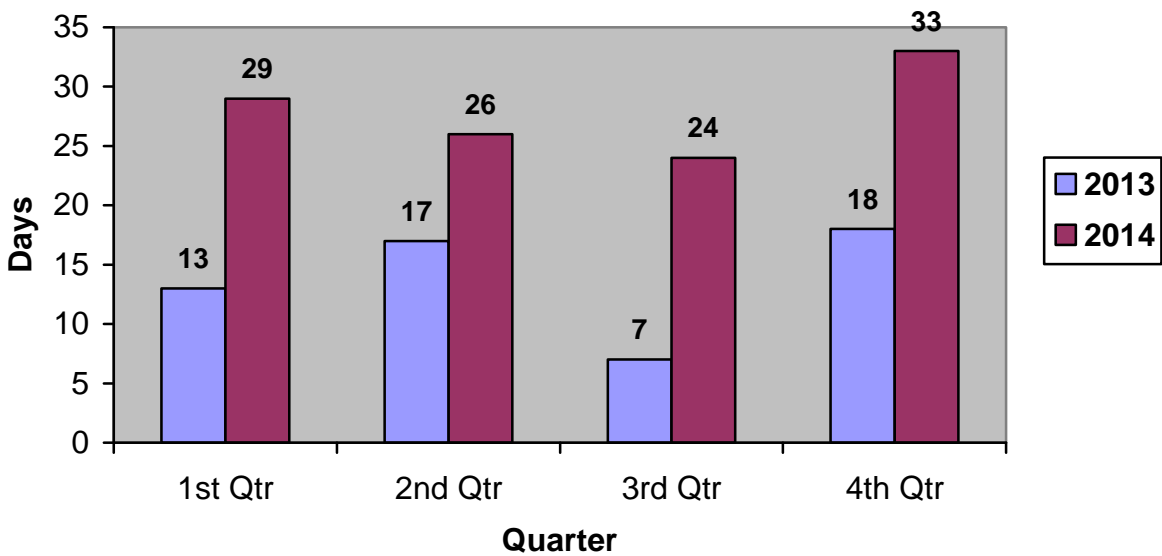
Total Analyses Reported in 2014 per Drug Type



Pending Caseload and Backlog per Quarter



Average Turn Around Time per Quarter



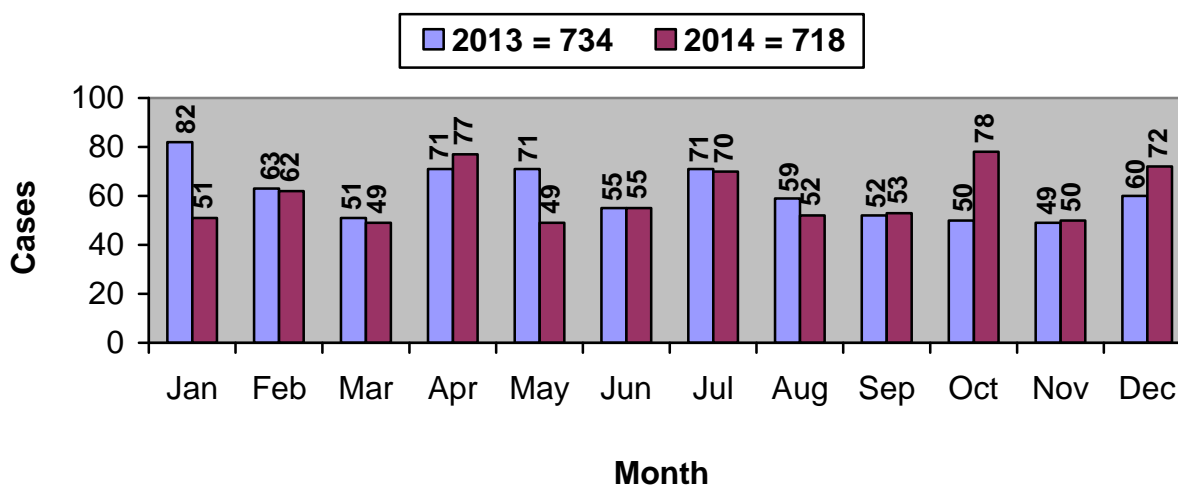
TOXICOLOGY UNIT

The Toxicology Unit is responsible for the analysis of alcohol and drugs contained in blood specimens submitted to the Maryland State Police Forensic Sciences Division. Testing is performed in conjunction with the Driving While Impaired (DWI) program of the Maryland State Police and the State Toxicologist's Office. Testing for alcohol and drugs is performed for both the Maryland State Police and allied state law enforcement agencies requiring laboratory support for impaired driving programs. These important services assist police and prosecutors in obtaining the forensic evidence needed to prosecute impaired drivers in court.

The Toxicology Unit is the only laboratory within the state approved by the State of Maryland, Office of the Chief Medical Examiner to analyze blood samples for alcohol and drugs in cases related to DWI arrests. Specimens submitted for testing are collected by certified medical personnel at the direction of authorized police personnel. Blood is collected when a person is injured or hospitalized, a fatality has occurred, or when alcohol is suspected and a breath test operator is not available. Many cases, therefore, involve serious personal injury and manslaughter charges that require the Forensic Scientist's expert testimony at trial.

Blood Alcohol Casework

Total Blood Alcohol Cases Received per Month



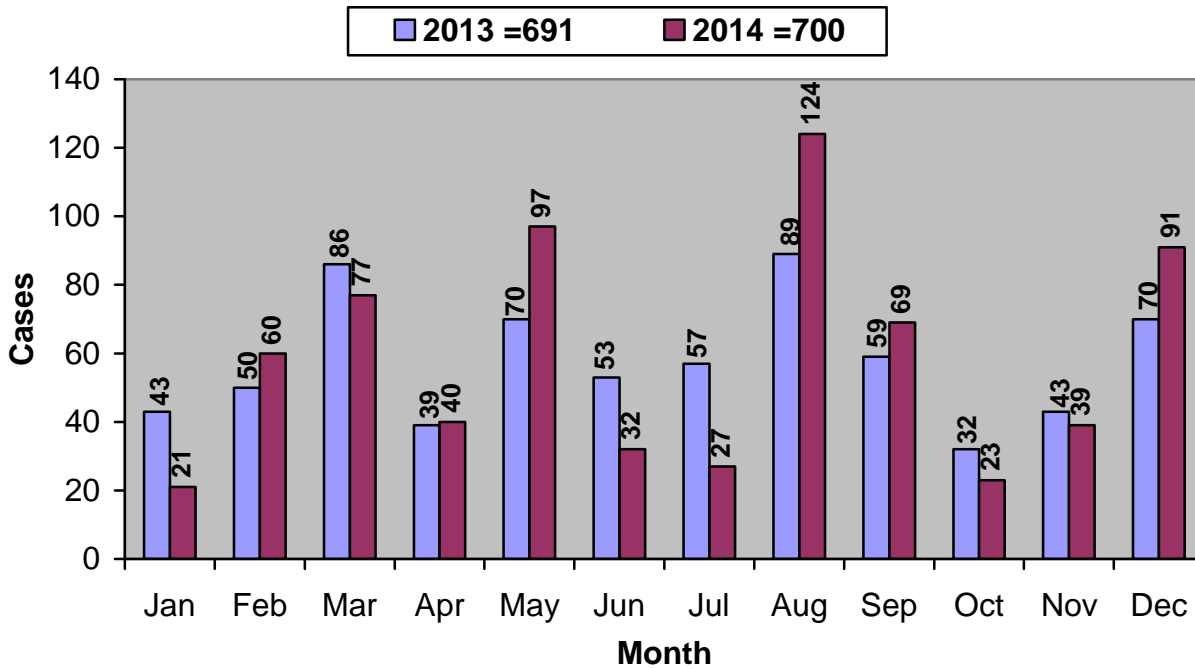
Total MSP Blood Alcohol Cases Received in 2014 per Installation

MSP Installation	Counties Served	Submissions
MSP-Golden Ring	Baltimore	27
MSP-Frederick	Frederick	24
MSP-Forestville	Prince George's	22
MSP-Bel Air	Harford	21
MSP-Rockville	Montgomery	17
MSP-Easton	Caroline, Dorchester, Talbot	16
MSP-Hagerstown	Washington	16
MSP-LaPlata	Charles	12
MSP-Centerville	Kent, Queen Anne's	11
MSP-College Park	Prince George's	11
MSP-Westminster	Carroll	10
MSP-Glen Burnie	Anne Arundel	9
MSP-Prince Frederick	Calvert	9
MSP-JFK Highway	Cecil, Harford, Baltimore	8
MSP-Leonardtown	St. Mary's	7
MSP-Salisbury	Wicomico	7
MSP-Berlin	Worcester	4
MSP-North East	Cecil	4
MSP-McHenry	Garrett	3
MSP-Cumberland	Allegany	2
MSP-Waterloo	Howard	2
MSP-Princess Anne	Somerset	1
	TOTAL	243

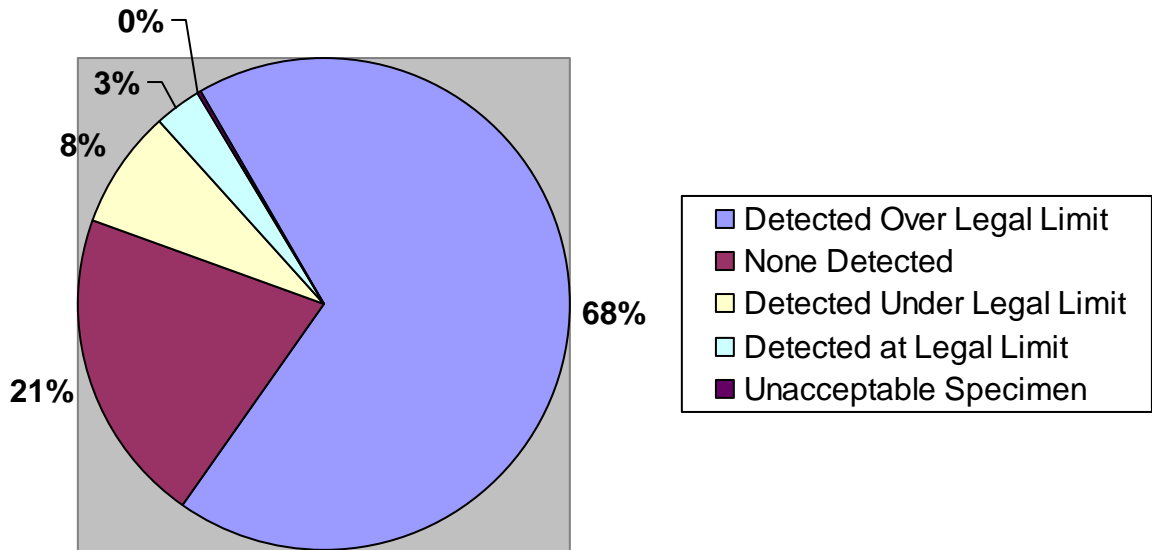
Total Allied Agency Blood Alcohol Cases Received in 2014 by County

County	Submissions
Baltimore	78
Anne Arundel	76
Montgomery	71
Prince George's	43
Frederick	29
Washington	25
Baltimore City	21
Howard	21
Calvert	16
Harford	16
St. Mary's	15
Charles	12
Carroll	11
Statewide	9
Wicomico	7
Allegany	5
Cecil	5
Talbot	4
Dorchester	3
Worcester	3
Garrett	2
Kent	1
Montgomery	1
Queen Anne's	1
TOTAL	475

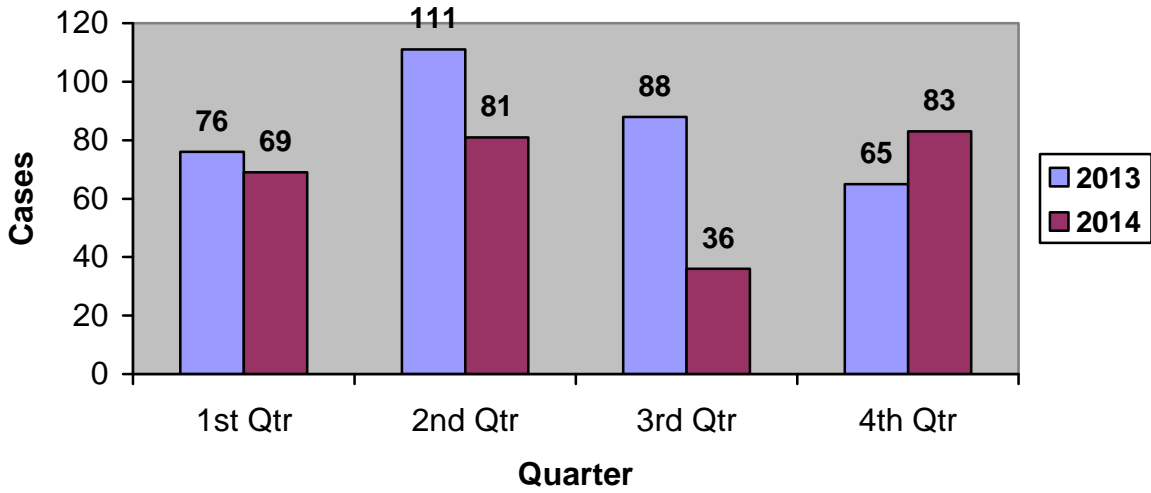
Total Blood Alcohol Cases Completed per Month



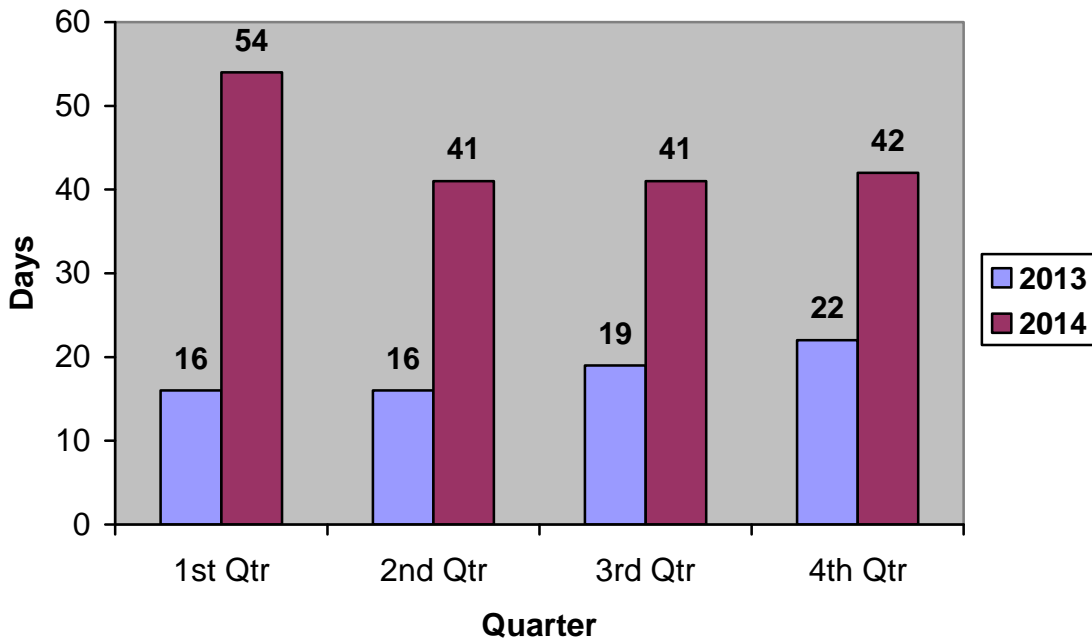
Blood Alcohol Cases Reported in 2014 per Detection Level



Blood Alcohol Cases - Pending Caseload per Quarter

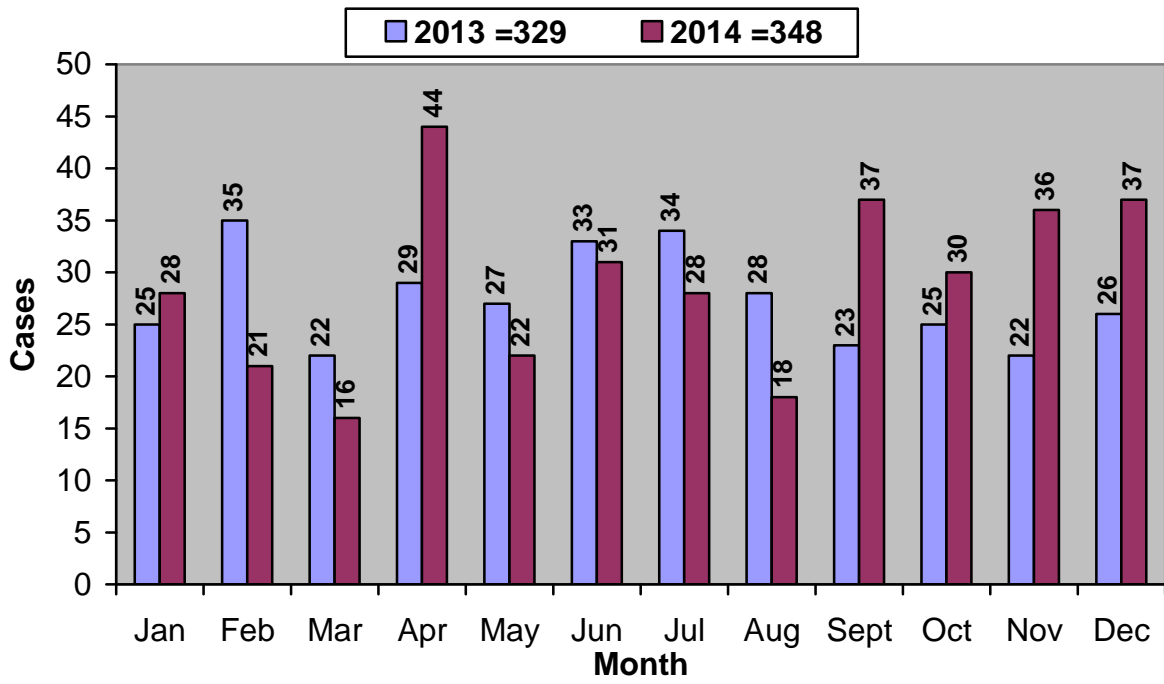


Blood Alcohol Cases - Average Turn Around Time



Blood Drug Casework

Blood Drug Cases Received



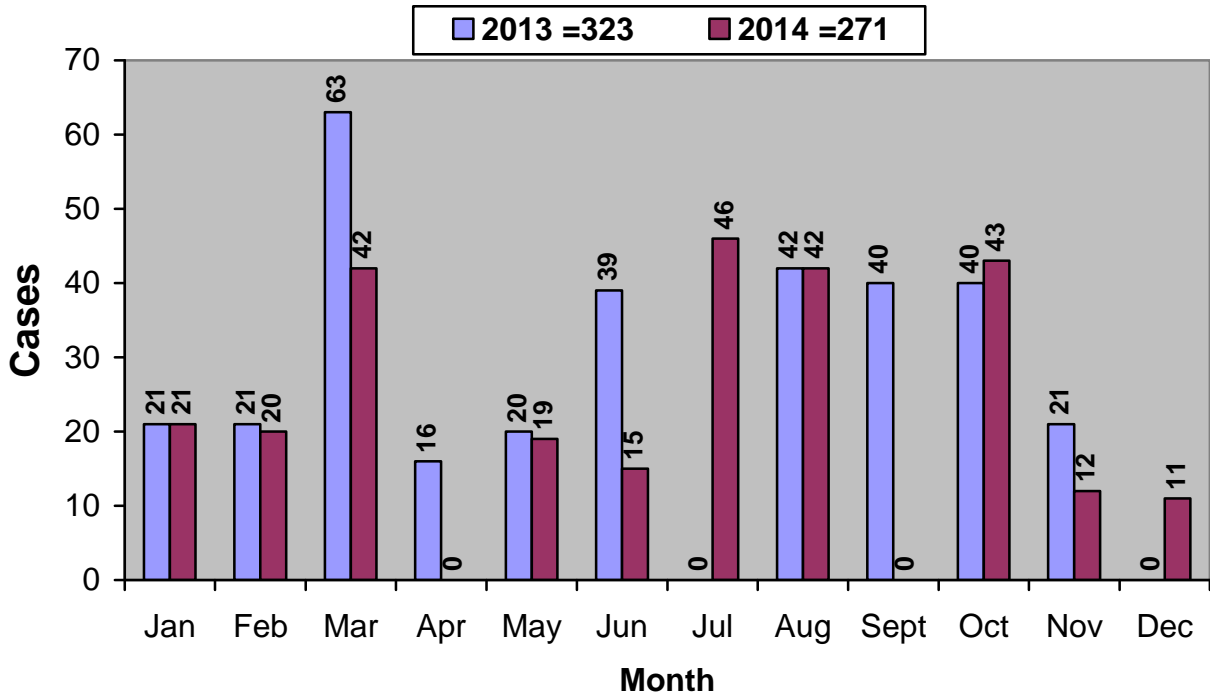
Total MSP Blood Drug Cases Received in 2014 per Installation

MSP Installation	Counties Served	Submissions
MSP-Golden Ring	Baltimore	13
MSP-Rockville	Montgomery	13
MSP-Bel Air	Harford	7
MSP-College Park	Prince George's	7
MSP-Glen Burnie	Anne Arundel	7
MSP-Prince Frederick	Calvert	7
MSP-Centerville	Kent, Queen Anne's	6
MSP-Forestville	Prince George's	6
MSP-Frederick	Frederick	5
MSP-Hagerstown	Washington	5
MSP-Westminster	Carroll	4
MSP-Berlin	Worcester	3
MSP-LaPlata	Charles	3
MSP-Easton	Caroline, Dorchester, Talbot	2
MSP-North East	Cecil	2
MSP-Princess Anne	Somerset	2
MSP-Waterloo	Howard	2
MSP-JFK Highway	Cecil, Harford, Baltimore	1
MSP-McHenry	Garrett	1
MSP-Salisbury	Wicomico	1
	TOTAL	97

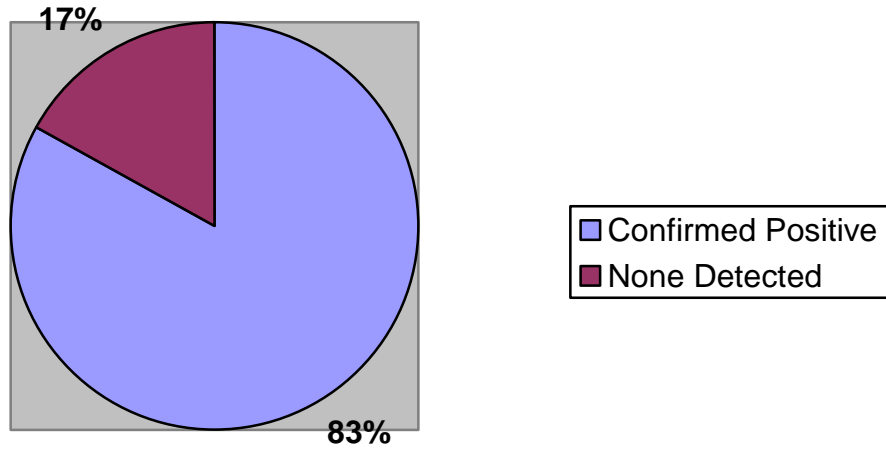
Total Allied Agency Blood Drug Cases Received in 2014 by County

County	Submissions
Montgomery	55
Baltimore	47
Anne Arundel	31
Harford	20
Frederick	18
Statewide	18
Howard	16
Calvert	13
Prince George's	10
Charles	8
Washington	6
Baltimore City	3
Allegany	1
Carroll	1
Garrett	1
Kent	1
St. Mary's	1
Worcester	1
TOTAL	251

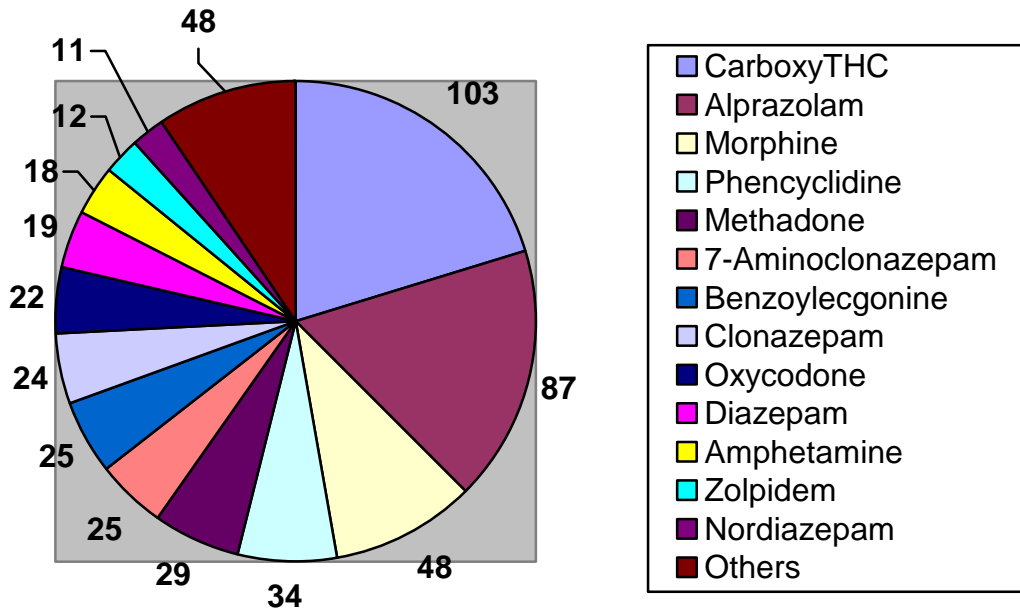
Blood Drug Cases Completed



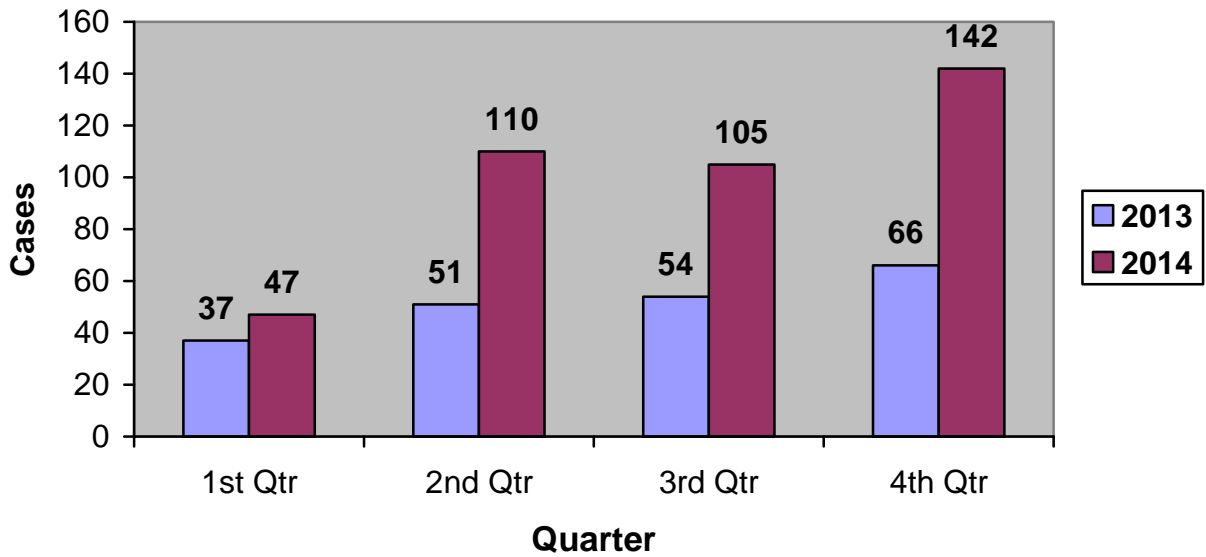
Percentage of Blood Drug Cases Reported in 2014
Yielding Positive Results



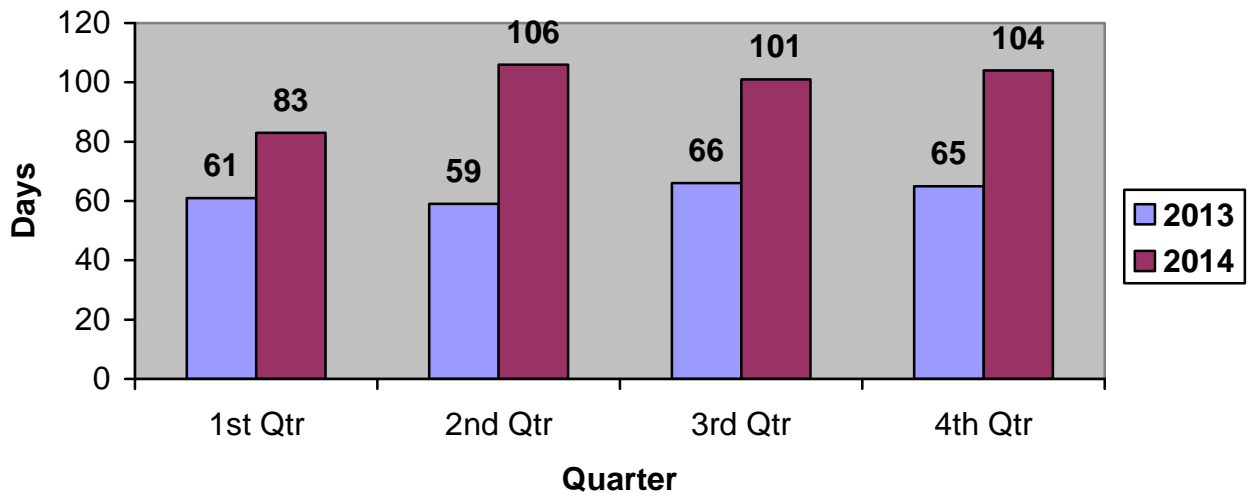
Percentage of Blood Drug Cases Reported in 2014
Yielding Positive Results per Drug Type



Blood Drug Cases - Pending Caseload per Quarter



Blood Drug Cases - Average Turn Around Time



2014 CHEMISTRY SECTION ACCOMPLISHMENTS

- 1. To promote a healthy work environment.** The CDS Units are working together to decrease the overall backlog of CDS cases. The three labs are working to achieve a consistent turn-around time by redistributing cases. New All-In-One computers have been purchased for each scientist to utilize the full capabilities of Starlims by entering results into the CDS Worksheet. The Toxicology Unit is in the process of hiring a new chemist to help alleviate the caseload for blood drug cases.
- 2. To meet the forensic science needs of Maryland and its citizens.** The CDS Units have continued to develop testing procedures for the new generation of synthetic cannabinoids (K2, Spice) and synthetic cathinones (Bath Salts). When a new synthetic drug is detected, every effort is made to obtain the standard of that drug to confirm its presence in a case sample. This helps provide information to track the synthetics that are most commonly abused. A hopeful outcome of the marijuana decriminalization law was that the use of synthetic marijuana (K2 and the like) would be reduced. That is yet to be seen, as the DEA will schedule three more synthetic cannabinoids in mid January 2015. An unforeseen aside to the marijuana decriminalization law comes in the regulation of edibles and concentrates of marijuana, which can have vastly different effects and consequences than the use of the plant material. A legislative committee was established late last year to address this, proposing regulations to exclude such items from the original law. In 2014, the CDS Units have seen an increase in the submission of heroin which corresponds with an increase in heroin overdose deaths in Maryland. The labs have also identified fentanyl in powder form and fentanyl/heroin mixtures, which is a dangerous combination of depressants that is contributing to the overdose problem. The lab provides statistics on heroin and fentanyl submissions to law enforcement and public health officials to reduce heroin overdose deaths. The Toxicology Unit has been making every effort to prioritize casework to meet the needs of the State's Attorneys.
- 3. To maintain accreditation with ASCLD/LAB and compliance with all oversight requirements.** In Toxicology, blood alcohol uncertainty was integrated into case reporting per ISO and ASCLD/LAB requirements
- 4. To minimize backlogs and turn around time.** The CDS Units primarily use the GC/MS instrument to confirm the presence of a drug in a sample, and efforts were made this year to increase the efficiency of this instrument. With the decrease in marijuana submissions due to the decriminalization of less than 10 grams of marijuana, more samples are requiring instrumental analysis. The CDS Units are researching new technologies to improve efficiency, and decrease turn-around times lab-wide. Thanks to grant funding, the Toxicology Unit acquired both an LC/MS instrument and a positive pressure extraction system. When implemented, these technologies will enable the Unit to test for more drugs in a shorter period of time.
- 5. To operate in a planned, prepared, and proactive manner.** The CDS Units and Central Receiving Unit have worked with law enforcement and State's Attorneys to prepare for the decriminalization of less than 10 grams of marijuana. This coordinated effort has helped reduce the number of marijuana submissions to the lab greatly, which has allowed the CDS Units to focus on reducing the backlog and decreasing the turn-around time for CDS submissions. Case

turnaround time, particularly for blood drug cases, continues to increase during this transition period. However, teamwork between the Unit members and an emphasis on client communication have aided case prioritization.

2015 CHEMISTRY SECTION GOALS

- 1. To promote morale through a respectful and unified work environment.**
 - The Starlims worksheet is currently being customized to meet the specific needs of the CDS units. Once the worksheet is finalized, the CDS units will be able to generate reports and collect statistics using Starlims.
 - The Toxicology Unit will fill the vacant Forensic Scientist position offsetting the manpower loss associated with the retirement of the Chemistry Manager.

- 2. To meet the forensic science needs of Maryland and its citizens.**
 - The CDS Units will continue to develop additional detection methods for newly introduced synthetic cannabinoids and cathinones.
 - The LC/MS will be received and validated by the Toxicology Unit resulting in efficiency improvements as well as the expansion of testing capabilities.

- 3. To maintain accreditation with ASCLD/LAB and compliance with all oversight requirements.**
 - A scientist from each of the CDS Units and the Toxicology Unit will be attending the ASCLD/LAB Assessor's Course. This will provide a better understanding of the accreditation process and allow scientists to travel to other testing laboratories to perform audits.

- 4. To minimize backlogs and turn around time.**
 - The action plans already developed to address backlogs and turn around time in the CDS Units will be carried out and monitored.
 - Additional backlog reduction initiatives will be pursued by the CDS Units including the application of improved chromatographic methods to reduce testing time, the use of the full CDS StarLIMS module eliminating double recording of findings and streamlining the use of the review and reporting processes.
 - The Toxicology Unit will install and validate the LC/MS and the positive pressure extraction system.

- 5. To operate in a planned, prepared, and proactive manner.**
 - The CDS Units plan to take advantage of the decrease in submissions by investing time into researching new technologies to improve efficiency and testing capabilities. The Chemistry Manager plans to redistribute resources to the Toxicology unit while it is understaffed to help with validation of the LC/MS and positive pressure extraction system.

BIOLOGY SECTION

The Forensic Biology Section is responsible for performing Serological and DNA analysis associated with criminal casework as well as maintaining and operating the State's DNA database. In order to efficiently address these functions, the Biology Section is structured on a four unit basis overseen by one Forensic Scientist Manager.

There are two casework units: the Investigative Casework Unit and the Trial Casework Unit. The Investigative Casework Unit is staffed by four scientists, including one Forensic Scientist Supervisor, one Forensic Scientist Advanced, and two Forensic Scientists III. The Trial Casework Unit is staffed by five scientists, including one Forensic Scientist Supervisor, one Forensic Scientist Advanced, and three Forensic Scientists III.

The Database Unit is staffed by eight scientists, including one Forensic Scientist Supervisor (CODIS Administrator), two Forensic Scientists Advanced, four Forensic Scientists III, and one Forensic Scientist I.

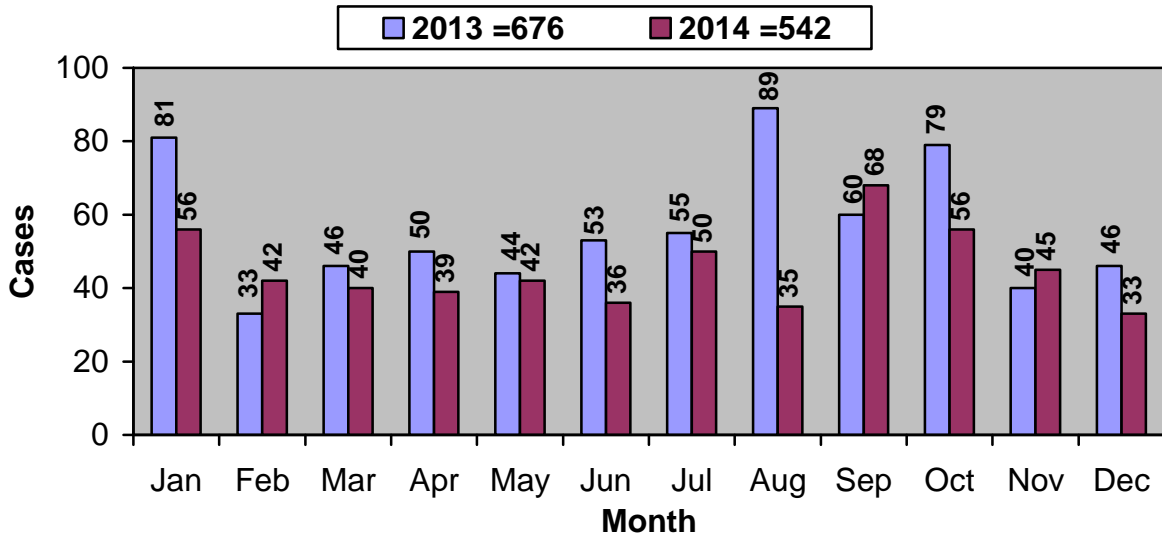
The Technical/Validation Unit is staffed by five individuals; four scientists including one Forensic Scientist Supervisor (Technical Leader), one Forensic Scientist Advanced, and two Forensic Scientists III (one of which is currently a vacant position). The fifth position is a Forensic Laboratory Technician I.

BIOLOGY CASEWORK UNITS

The Trial Casework Unit performs serology and/or DNA testing on cases that have resulted in an arrest and are being tested in support of the adjudication of the arrestee. This unit has the main responsibility of assigning, analyzing, and reviewing these cases for those agencies serviced by the MSP-FSD Biology Section. While the primary responsibility of this unit is cases with pending trial dates, it also does assist with the analysis of investigative and cold cases, the preparation and review of outsourced casework, and training of new analysts as necessary.

The Investigative Casework Unit performs serology and/or DNA testing on cases without pending court dates, which have not resulted in an arrest but are being tested in support of making an arrest. This unit is responsible for handling high-priority/high-profile investigative cases, routine investigative cases, and cold cases. The Investigative Casework Unit is also responsible for the management and processing of outsourced casework to the contract vendor laboratory and training of new analysts as necessary.

Total Cases Received per Month



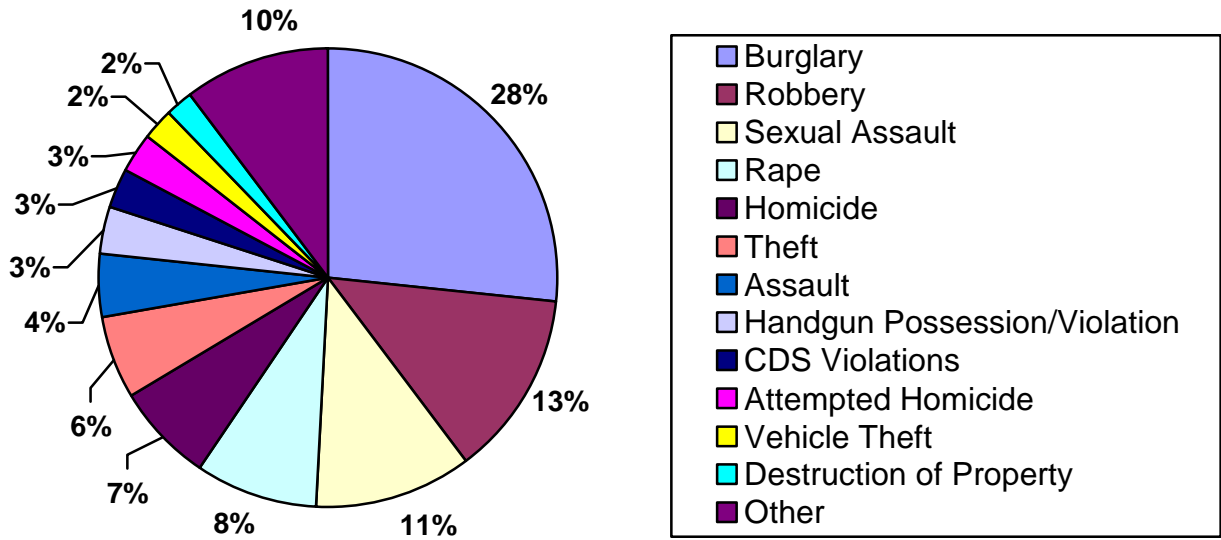
Total MSP Cases Received in 2014 per Installation

MSP Installation	Counties Served	Submission
MSP-CID	Statewide	23
MSP-Easton	Caroline, Dorchester, Talbot	14
MSP-Homicide	Statewide	13
MSP-North East	Cecil	8
MSP-Bel Air	Harford	7
MSP-Princess Anne	Somerset	7
MSP-Frederick	Frederick	4
MSP-McHenry	Garrett	4
MSP-Salisbury	Wicomico	4
MSP-Centerville	Kent, Queen Anne's	2
MSP-Leonardtown	St. Mary's	2
MSP-Prince Frederick	Calvert	2
Office of State Fire Marshall	Statewide	2
MSP-Cumberland	Allegany	1
MSP-Glen Burnie	Anne Arundel	1
MSP-Golden Ring	Baltimore	1
MSP-Hagerstown	Washington	1
MSP-LaPlata	Charles	1
MSP-Westminster	Carroll	1
	TOTAL	98

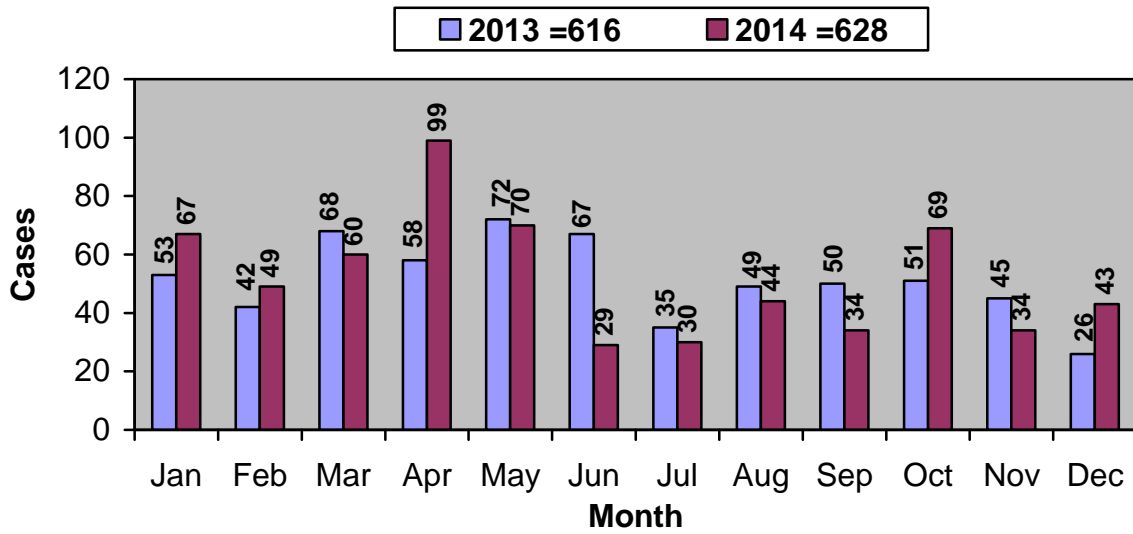
Total Allied Agency Cases Received in 2014 per County

County	Submissions
Frederick	74
Charles	63
Cecil	40
Wicomico	38
Anne Arundel	30
Harford	25
Washington	22
Worcester	22
Prince George's	18
Carroll	15
Dorchester	15
St. Mary's	13
Queen Anne's	12
Allegany	11
Talbot	11
Caroline	9
Calvert	8
Statewide	7
Kent	4
Garrett	3
Somerset	3
Montgomery	1
TOTAL	444

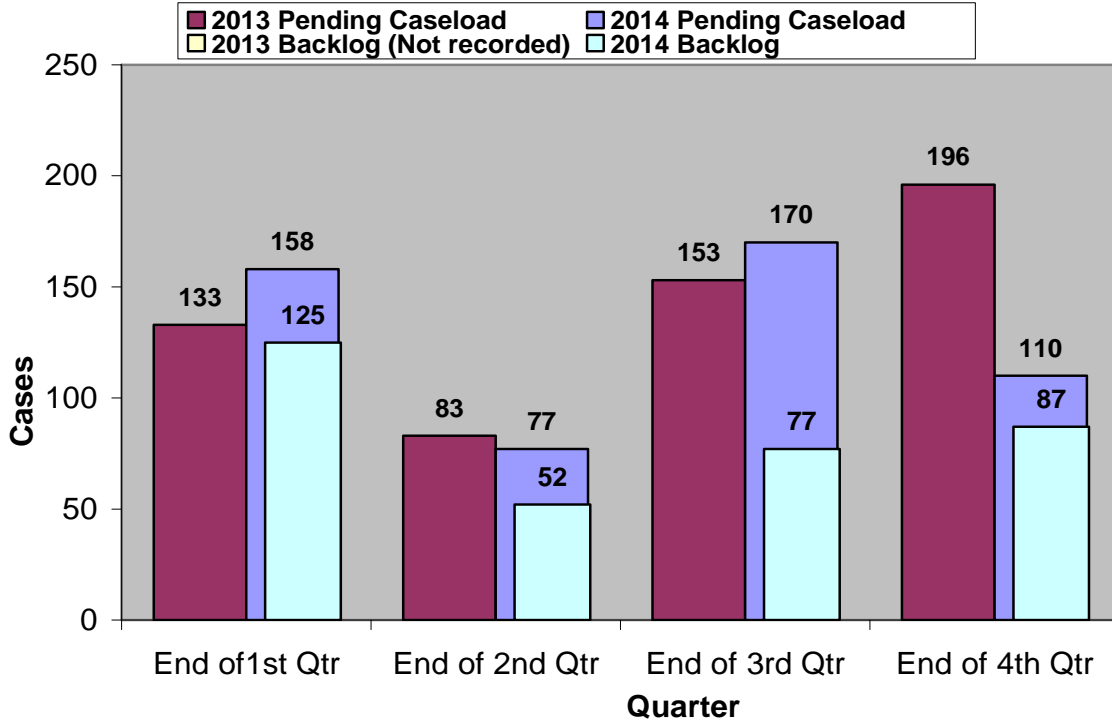
Total Cases Received in 2014 per Crime Type



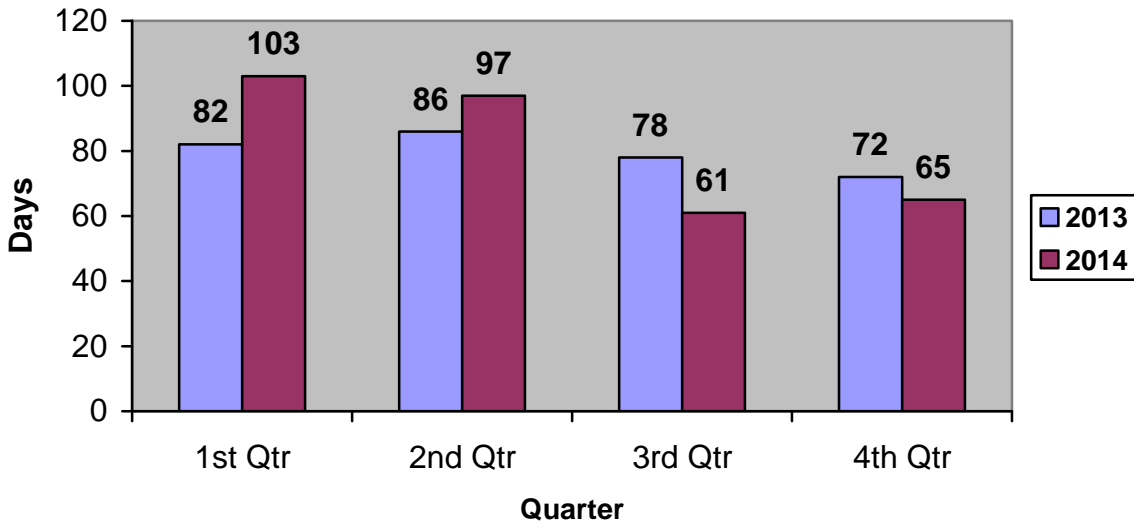
Total Cases Completed per Month



Pending Caseload and Backlog per Quarter



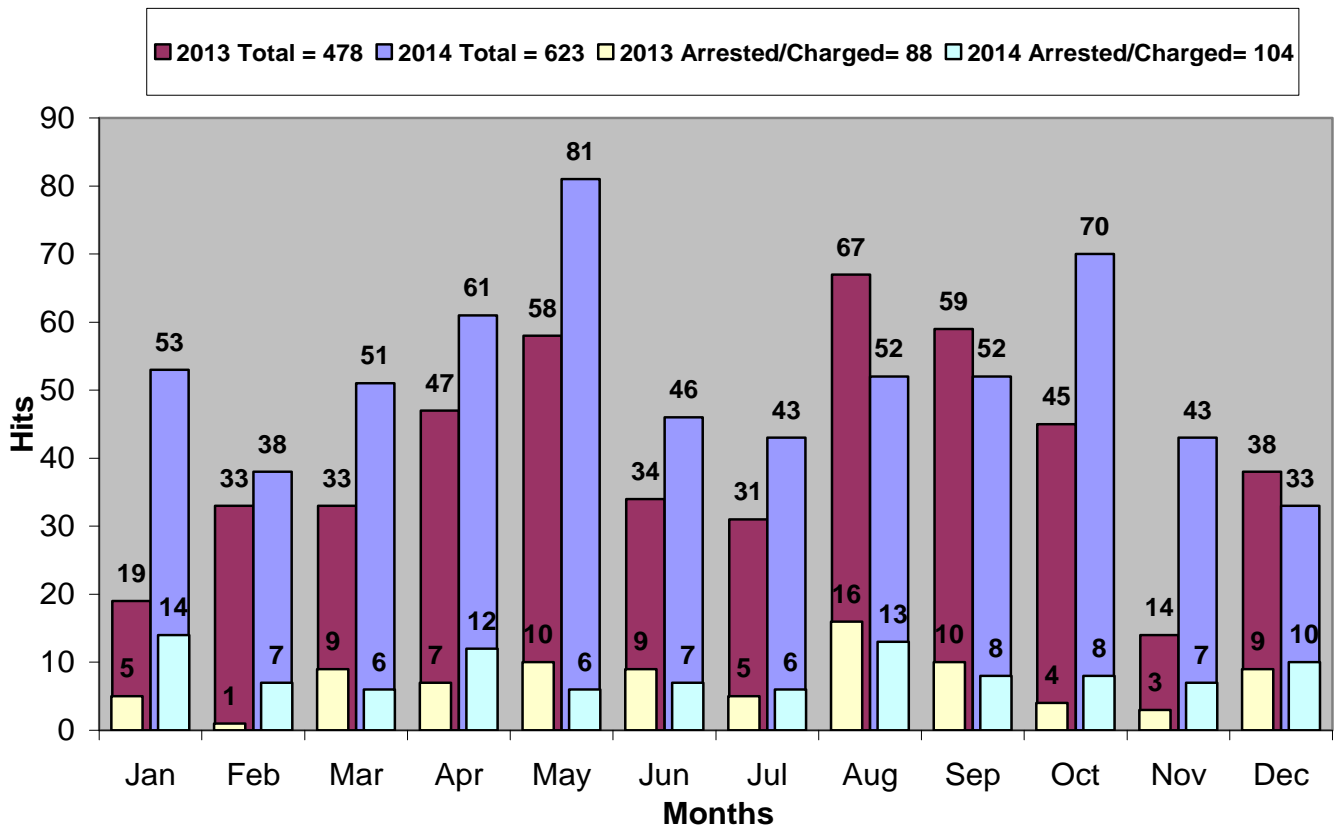
Average Turn Around Time per Quarter



BIOLOGY DATABASE UNIT

The DNA Database Unit is responsible for collecting DNA database samples from individuals required under Maryland law to provide a sample. The law was expanded in 2009 to include individuals arrested and charged with crimes of violence, burglary, and attempts of these crimes. While the majority of samples are collected by Allied Agencies, the DNA Database Unit is responsible for ensuring that all samples that were collected are received. The DNA Database Unit is also responsible for processing the DNA database samples received (as per Maryland law), entering DNA profiles from DNA database samples into the database, searching the database for hits, and reporting database hits. The DNA Database Unit also oversees the entry of DNA profiles from casework evidence into the database.

Total Hits Reported by Month



Total Hits in 2014

Hits Reported	
Maryland Offender/Arrestee Hits	335
Maryland Case Hits	623

Note - Maryland case hits include a Maryland case hitting to a Maryland offender/arrestee, a Maryland case hitting a National offender/arrestee, a Maryland case hitting a Maryland case, and a Maryland case hitting a National case. A Maryland case hitting a Maryland case is considered as two Maryland case hits (this is not consistent with how hits are reported for NDIS). A Maryland case hitting to a Maryland offender/arrestee is counted as both a Maryland offender/arrestee hit and a Maryland case hit.

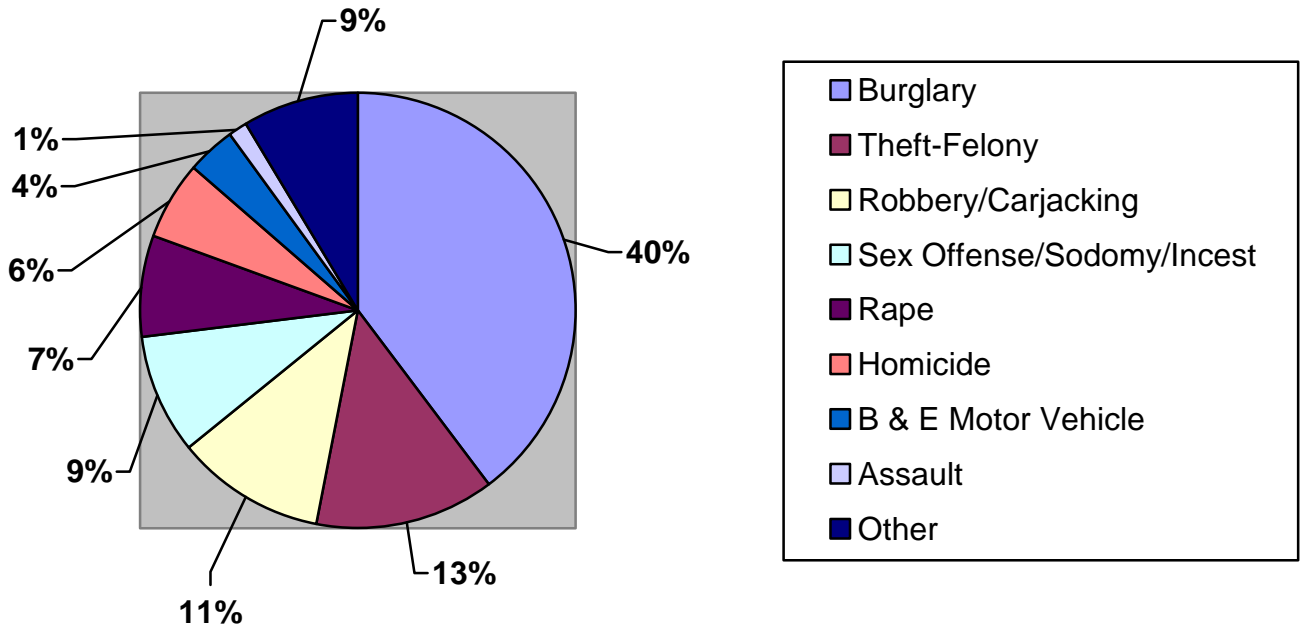
Total Maryland Case Hits in 2014 by County

Maryland County	Hits
Baltimore City	173
Anne Arundel	144
Montgomery	70
Baltimore	56
Prince George's	43
Charles	25
Wicomico	18
Cecil	13
Howard	13
Frederick	10
Worcester	9
Harford	8
Talbot	8
St. Mary's	7
Washington	5
Queen Anne's	4
Dorchester	4
Kent	4
Calvert	3
Carroll	3
Allegany	2
Garrett	1
TOTAL	623

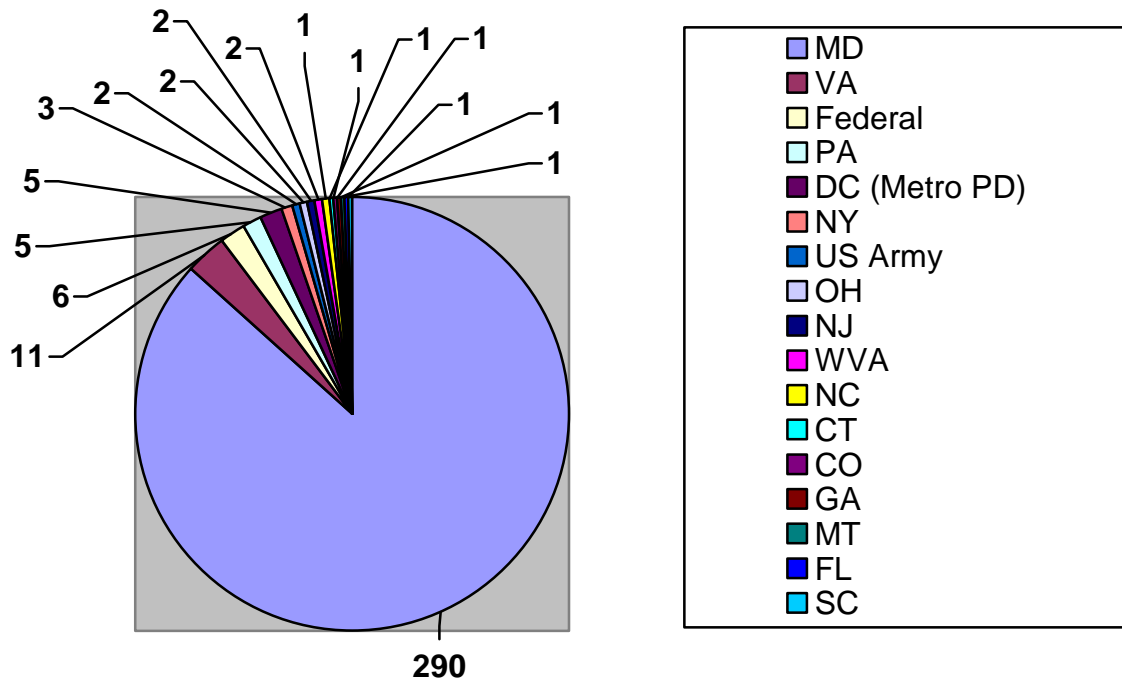
Total Maryland Case Hits in 2014 by Crime Year

Crime Year	Hits
1975	1
1976	1
1987	3
1988	3
1989	1
1991	2
1996	1
1997	1
1998	4
1999	1
2000	3
2001	3
2002	7
2003	5
2004	7
2005	5
2006	4
2007	12
2008	20
2009	18
2010	48
2011	50
2012	79
2013	176
2014	144
Unknown	24
Total	623

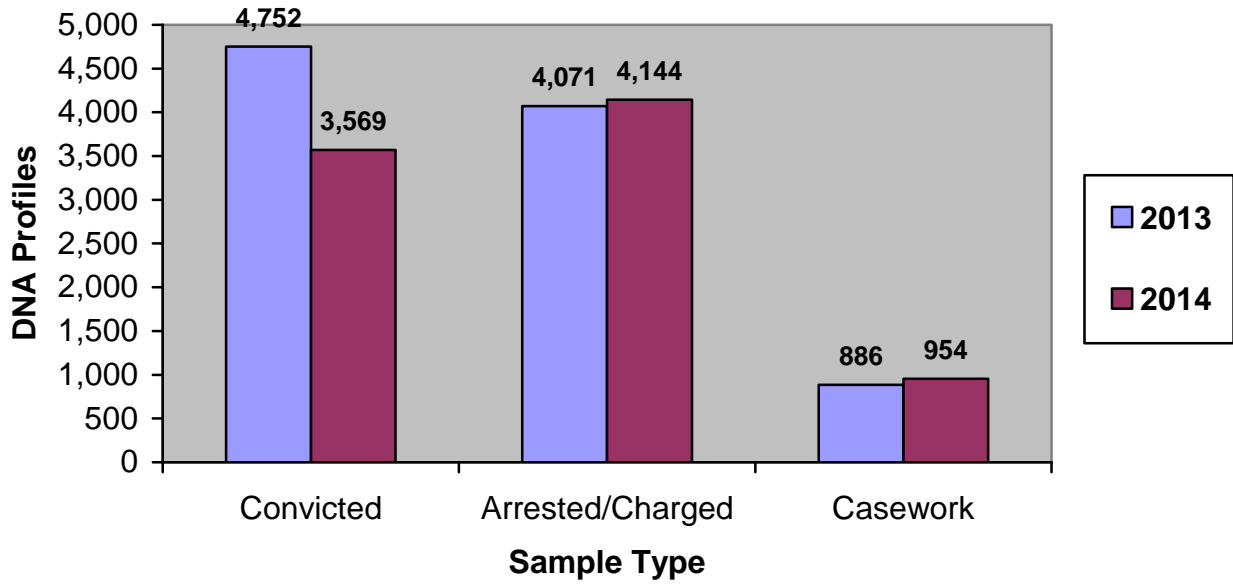
Total Maryland Case Hits in 2014 per Crime Type



Total Maryland Offender/Arrestee Hits in 2014 per Jurisdiction of Crime



Total DNA Profiles Uploaded to CODIS per Sample Type



BIOLOGY TECHNICAL UNIT

Summary

The Technical Unit of the Biology Section is responsible for the evaluation of new technologies to determine if they are appropriate to implement into the Section, validation of new technologies, training of personnel on new and current technologies, and quality assurance / quality control aspects of the Biology Section.

New Technologies Implemented in 2014

Technology	Benefit
Y-STR	In some sexual assaults with low levels of sperm identified, sexual assaults committed by azoospermic or vasectomized males, or body fluid mixtures lacking semen, autosomal STR analysis may result in a sample in which a male contributor cannot be identified or distinguished due to low sensitivity or preferential amplification of the abundant female contribution. Y-STR analysis specifically targets DNA on the male-specific Y chromosome even in the presence of an overwhelming amount of female DNA, thereby allowing such types of evidence to be analyzed. Additionally, samples with more than one male contributor may be suitable for Y-STR testing to assist in the possibility of exclusions when autosomal results are complex.
Complex mixture interpretation	A new tool was created to assist analysts in determining a minimum or finite number of contributors to complex mixtures. Such information is critical in further analyzing the complex mixture for making conclusions of inclusion or exclusion. A new tool was created to model the possible genotypes, and to provide weight to a statement of inclusion, of the significant contributor to complex mixtures. Prior to the implementation of this tool some complex mixtures have been declared inconclusive due to lack of an applicable model and statistical calculation.

Training Completed in 2014

Training included the use of the PowerPlex Y23 amplification kit, the use of the new complex mixture interpretation tools, and competency training of new DNA Database staff.

Analyst	New Field of Competency
Jason Befus Kathryn Busch Jessi Brown Bruce Heidebrecht Debra Heller Jennifer Kassing Tiffany Keener Amy Kelly Julie Kempton Leslie Mounkes Molly Rollo Teri Zerbe	Y-STR using the PowerPlex Y23 amplification kit Complex mixture interpretation tools
Tiffany Smith	DNA database

2014 BIOLOGY SECTION ACCOMPLISHMENTS

Casework Units: The casework backlog was reduced approximately 44% in 2014 ending the year with a backlog of only 110 cases! The casework unit surpassed its goals and has continued to make the backlog reduction a tremendous success. There was a 20% reduction in cases received for in-house testing which did aid the section in achieving this 2014 backlog reduction. Even though there was a decrease in cases submitted for in-house testing, the overall number of cases completed in-house increased by 2%. There was a 156% increase in the number of cases which were directly outsourced in 2014. Even though these cases were directly outsourced from the agency to the contract lab, they were still monitored and followed by Biology Section staff. Upon completion of such cases, the data is reviewed and suitable profiles are uploaded to the CODIS database. When considering both in-house cases and directly outsourced cases, the total number of cases completed within the Biology section increased by 9% in 2014. This great success could not have been accomplished without the continued application of direct outsourcing, in-house outsourcing, and in-house casework. By utilizing a combination of these three processes, the casework units have been able to continue to monitor and maintain the backlog at manageable levels. In addition, the average monthly in-house DNA casework turn around-time has been maintained at ~42 days per in-house case in 2014. All but one case which had been received into the Biology Section prior to 2014, had been closed by the end of

December 2014. Since the implementation of Y-STR analysis in October of 2014, 10 in-house Y-STR cases were completed between November and December of 2014. The success of the Biology Casework Units is evident in the fact that the casework backlog continues to be fully assigned.

Database Unit: The Database Unit received approximately 9,400 arrestee samples and expunged over 4,600 of those samples in 2014. Approximately 4,400 arrestee samples were imported into CODIS. Approximately 4,500 offender samples were received and more than 3,800 offender samples were imported into CODIS. The database staff continues to maintain a zero to minimal backlog of offender and arrestee samples needing to be reviewed and analyzed, while continuing to face the many challenges that accompany the arrestee collection law. The collections subunit is in the final stages of shifting all collections over to each corresponding external collection agency. The 2014 DNA collectors training audit was successful. To date over 3,700 hits have been released and over 114,000 Convicted Offender samples and 26,000 arrestee samples reside in CODIS.

Technical Unit: In 2014 new mixture analysis tools were created and effectively used in several cases that previously would have been determined inconclusive. The PowerPlex Y23 DNA testing kit was implemented and effectively used in several cases that otherwise would have been determined inconclusive using autosomal STR testing. The validations of both the new mixture tools and the PowerPlex Y23 kit were memorialized during an external FBI QAS audit. As of January 1, 2017 all CODIS participating labs must utilize an amplification kit that includes the new CODIS core 20 loci. Towards this end, a review of the currently commercially available amplification kits was conducted and a decision was made to initiate validation on the Globalfiler amplification kit.

2015 BIOLOGY SECTION GOALS

Casework Unit: The Biology Section will continue to strive for success in 2015. All casework processes to include submissions, assignment, analysis and review will continue to be monitored to assess the need for any areas in which efficiency can be increased. All current casework processes will be maintained to ensure that every attempt is made to increase casework processing efficiency and to ensure control over any fluctuations in the casework backlog while maintaining a low in-house turn-around-time. Towards that end, the requirement for direct and in-house outsourcing of cases to our vendor lab will be continued and necessary. If all factors that have allowed the current success in backlog reduction remain, we anticipate the ability to maintain a fully assigned casework backlog throughout 2015.

Database Unit: The goal for 2015 is to begin the process of acquiring the necessary instrumentation for in house database analysis and start validation on that instrumentation for the transition to the new CODIS core loci. A plan to maintain a zero to minimal backlogs of offender and arrestee samples needing to be reviewed and analyzed while this transition is occurring will be addressed

Technical Unit: The goal for year 2015 will be the validation of the Quant Trio quantification kit and the Globalfiler amplification kit (initially for casework to be followed by database as instrumentation is acquired), along with the accompanying hardware and software. New instrumentation is necessary since current instruments are becoming outdated and the new amplification kits are not compatible with the current platform. Instrument acquisition may be staggered starting in 2015, or possibly all materialize within 2015. This is dependant on a financial agreement that is being proposed by the Biology Section and is pending approval. Training of personnel will follow the validation of new instruments/kits/software.

TRACE EVIDENCE SECTION

The Trace Evidence Section (TES) consists of two units, the Trace Evidence Unit and the Questioned Documents Unit. The Trace Evidence Unit is sub-divided into three sub-units, Trace Pattern, Trace Chemistry and Trace Biology. The Trace Evidence Section consists of one Forensic Scientist Supervisor, one Forensic Scientist Advanced and two Forensic Scientist III's.

TRACE EVIDENCE UNIT

The Trace Pattern Sub-Unit performs analyses on evidence that either contains or produces a unique pattern that provides beneficial information to the investigators of the case. These analyses include Fracture Matches; Lamp Examinations; Nature of Damage (including Direction of Force, Fabric Separation, and general sustained damage); and Plastic Bag comparisons.

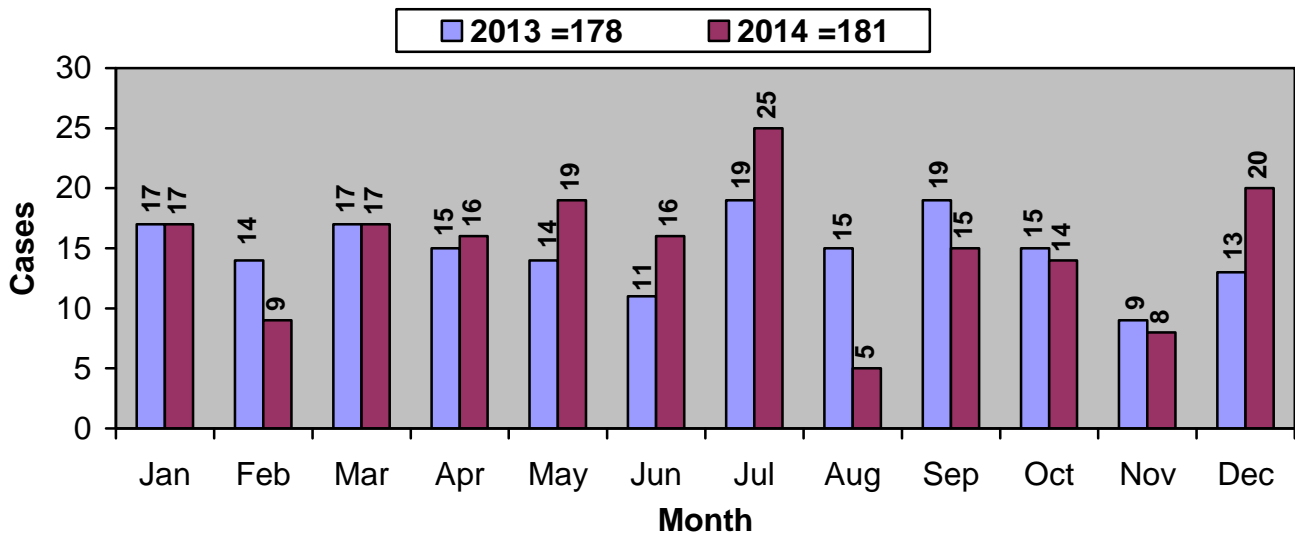
The Trace Chemistry Sub-Unit receives the bulk of the Trace Section evidence and is responsible for the analyses of any evidence submitted to the section that requires chemical or instrumental testing to determine physical and chemical properties. These include analyses in the areas of Fire Debris; Paint; Bank Dye Packs; Fibers; Tapes and Adhesives; Soil Anomalies; and miscellaneous liquids, powders and solids.

The Trace Biology Sub-Unit examines biological evidence in support of the operations of the Biology Section. The main area of analyses is with hair examinations to determine species (animal or human) and growth phase for further DNA profiling. This sub-unit is developing advanced biological screening protocols in an effort to analyze biological material (both animal and plant) that is not currently possible.

QUESTIONED DOCUMENTS UNIT

The Questioned Documents Unit performs analyses and comparisons on handwriting as well as on hand printed and machine printed materials. This unit also performs examinations of torn, charred, and obliterated paper; indented writing cases; and comparisons of fractured items.

Total Cases Received per Month



MSP Cases Received in 2014 per Installation

Installation	Counties Served	Submissions
MSP-North East	Cecil	4
MSP-CID	Statewide	2
MSP-Easton	Caroline, Dorchester, Talbot	2
MSP-Leonardtown	St. Mary's	2
MSP-Bel Air	Harford	1
MSP-Centerville	Kent, Queen Anne's	1
MSP-Frederick	Frederick	1
MSP-Hagerstown	Washington	1
MSP-Homicide	Statewide	1
MSP-JFK Highway	Cecil, Harford, Baltimore	1
MSP-Westminster	Carroll	1
	TOTAL	17

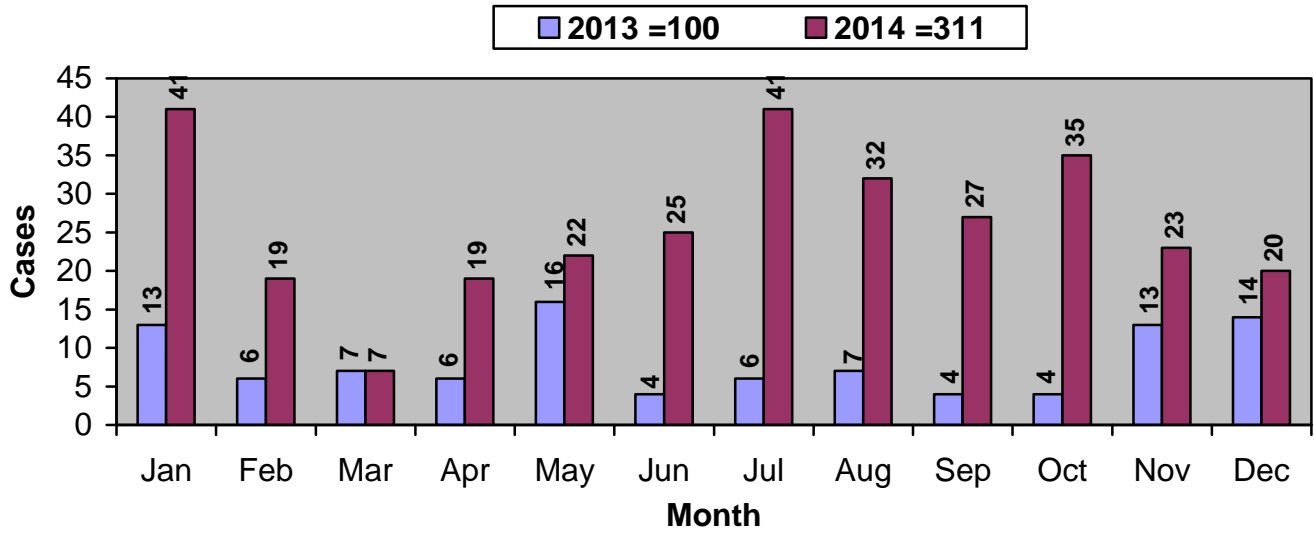
OSFM Cases Received in 2014 per OSFM Region

Region	Counties Served	Submissions
OSFM - Statewide	Statewide	29
OSFM - Anne Arundel Co	Anne Arundel	19
OSFM - Lower Shore	Dorchester, Somerset, Wicomico, Worcester	9
OSFM - Metro	Carroll, Frederick, Howard	9
OSFM - Southern	Calvert, Charles, St. Mary's	8
OSFM - Baltimore Co	Baltimore	5
OSFM - North East	Harford, Cecil	4
OSFM - Bomb Squad	Statewide	3
OSFM - Western	Allegany, Garrett, Washington	3
OSFM - Upper Shore	Caroline, Kent, Queen Anne's, Talbot	2
	TOTAL	91

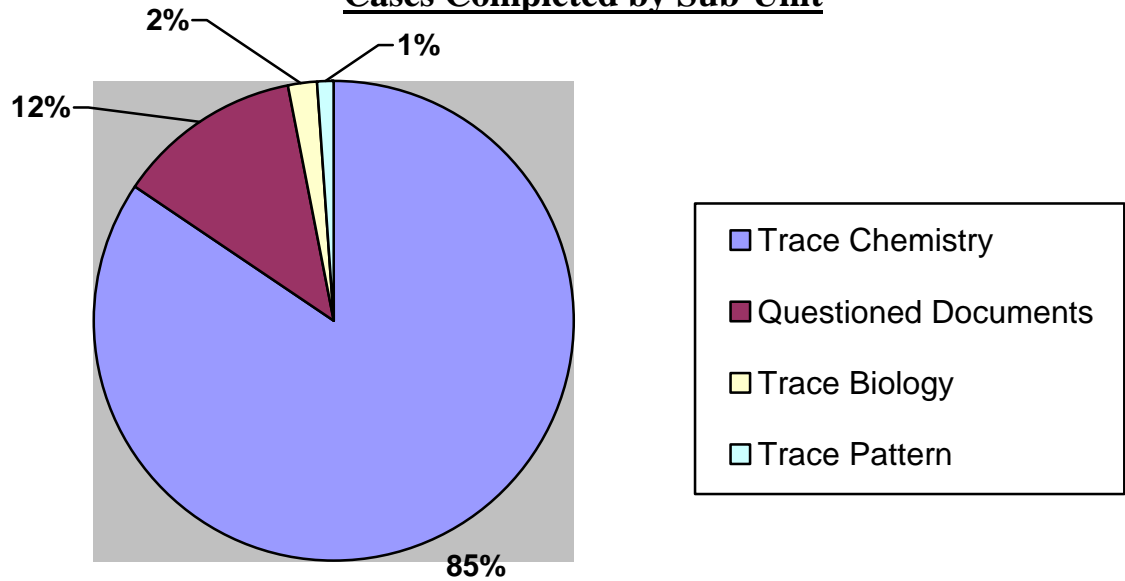
Allied Agency Cases Received in 2014 per County

County	Submissions
Howard	9
Montgomery	9
Frederick	8
Baltimore	7
Prince George's	4
Statewide	4
Worcester	4
Charles	3
Harford	3
Anne Arundel	2
Baltimore City	2
Calvert	2
Carroll	2
Cecil	2
Dorchester	2
Out of State	2
Washington	2
Wicomico	2
Garrett	1
Somerset	1
St. Mary's	1
Talbot	1
TOTAL	73

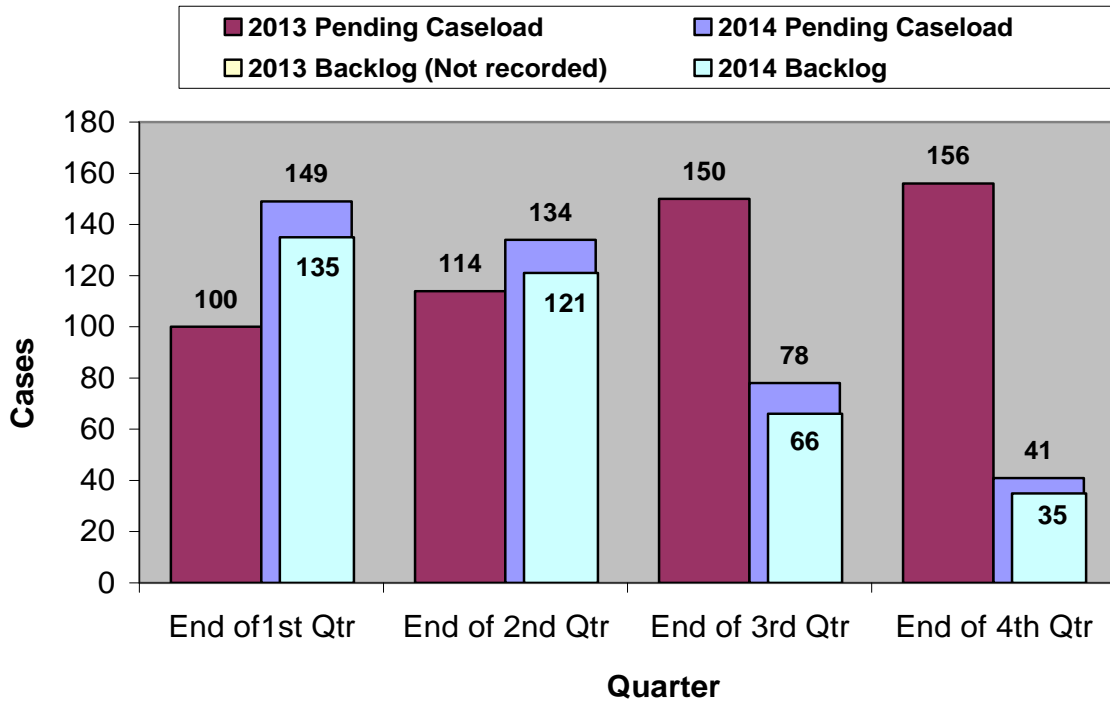
Total Cases Completed per Month



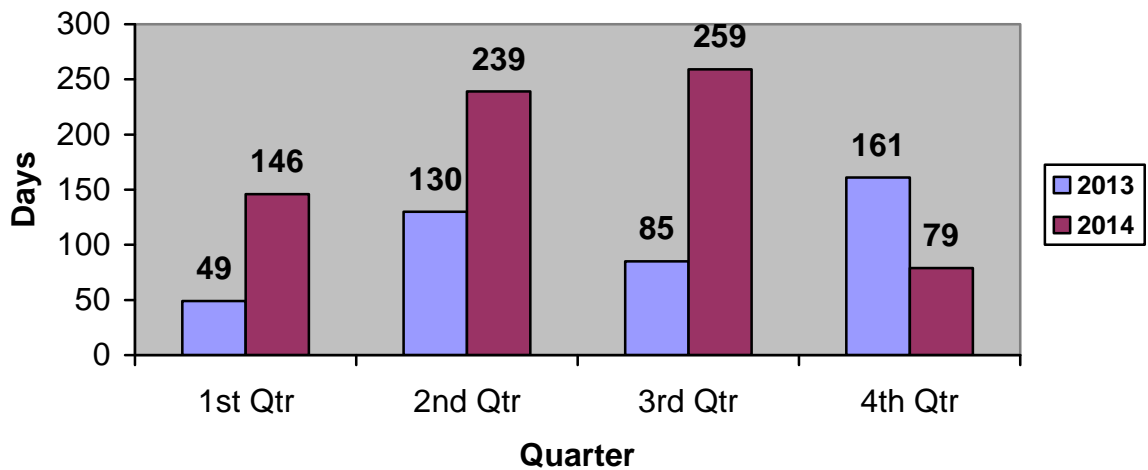
Cases Completed by Sub-Unit



Pending Caseload and Backlog per Quarter



Average Turn Around Time per Quarter



2014 TRACE EVIDENCE SECTION ACCOMPLISHMENTS

- The Trace Evidence Section is the laboratory's smallest section consisting of two of the FSD's smallest units. Since it is such a small group of people there has been constant communication between its members concerning work conditions and health/leave concerns providing an excellent support network for one another. In 2014, the Trace Evidence Section took on 6 interns to lessen the non-case workload on its employees.
- A Forensic Scientist III completed training and has achieved competency in Fire Debris Analysis. The FSD now has three Forensic Scientists competent to analyze approximately 75% of the Trace caseload.
- A draft of a new Questioned Documents training manual has been produced which will more thoroughly document the ongoing training for a new Questioned Document Examiner. Similarly, the Trace Evidence Unit took the opportunity to revise the Fire Debris Analysis SOP to more thoroughly maintain quality control. The Trace Evidence Section continued to use trace examiners from Baltimore City and Baltimore County to technically review casework in which FSD only has one qualified examiner. All necessary quality assurance documentation required of those reviews was obtained. Forensic scientists from the Trace Evidence Section are also reviewing casework from the above outside agencies when they are needed.
- The Trace Evidence Section was able to strategically manage the Fire Debris Analysis caseload and by the end of the year there was no backlog. Despite an increased caseload and several rush requests, the Questioned document Unit was able to keep its backlog from climbing.
- Since the FSD has only one Questioned Documents examiner, the Trace Evidence Section is in the process of training a Forensic Scientist III in Questioned Document analysis. This training is anticipated to take approximately one more year. The Trace Evidence Section also completed drafts of Validation/ Performance Checks on donated used equipment (Microspectrophotometer, and FTIR/Microscope) from the Baltimore County lab. This equipment will be used as backups for current FSD instrumentation.

2015 TRACE EVIDENCE SECTION GOALS

- The Trace Evidence Section will continue to maintain close communication amongst its personnel and seek ways to improve the working atmosphere in the laboratory. The Trace Biology Sub-Unit will continue to work together with the Biology Section to assess new Trace Evidence procedures that may prove beneficial to supporting Biology casework. Interns will continue to be used in non-casework duties.
- A long-term plan will be continued to ensure that at least one forensic scientist is trained and competent in each of the trace evidence sub-disciplines offered by FSD. Training in Fiber and Textile analysis will conclude in the first half of 2015. Training in General Chemical unknowns will commence after the competencies have been achieved in Fibers and Textiles. Also Questioned Document training will progress.
- The Trace Evidence Section will continue to use SWGMAT, ASTM, and ASCLD/LAB publications as references and guidelines in its analyses. Prior to implementing the new equipment received from the Baltimore County lab, the necessary SOP revisions, and training will be performed.
- The Trace Evidence Section will continue to evaluate casework requests and assign a priority status in order to minimize backlogs and turn around time. The Fire Debris casework backlog will continue to be at a minimal level.
- The Trace Evidence Section will work with outside agency Trace analysts to ensure that the Trace analysis needs of the State are met.

EMPLOYEE RECOGNITION

2014 Employee of the Month Recipients

Month	Award Recipient
January	Kathy Busch
February	Joe Chambers and Gary Moore
March	Amy Kelly and Heather Johnson
April	Stephanie Roberg
May	FATMU
June	Jen Kassing
July	Shawn Miller
August	Aabhas Garg
September	Wayne Shu
October	Brooke Welsh
November	Jason Befus
December	Rita Woolery

2014 Commander's Award Recipient

Captain Chris Finn

