

North Carolina Department of Justice

ANNUAL REPORT

FISCAL YEAR 2017-2018

North Carolina State Crime Laboratory



Director John A. Byrd



JOSH STEIN
ATTORNEY GENERAL

STATE OF NORTH CAROLINA
DEPARTMENT OF JUSTICE

SETH DEARMIN
CHIEF OF STAFF

October 15, 2018

Senator Shirley B. Randleman
Representative James L. Boles, Jr.
Representative Ted Davis, Jr.
Co-Chairs, Joint Legislative Oversight Committee on Justice and Public Safety
North Carolina General Assembly
Raleigh, NC 27601-2808

RE: Report on work of the NC State Crime Laboratory during FY 2017-2018

Dear Senator Randleman, Representative Boles, and Representative Davis:

Pursuant to Session Law 2013-360, Section 17.2, the Department of Justice is pleased to submit the Fiscal Year 2017-2018 Annual Report for the NC State Crime Laboratory to the Joint Legislative Oversight Committee on Justice and Public Safety. In addition to the data on evidence submissions, case completions, and other workload measures, the report provides updates on significant achievements and internal improvements that focus on quality of analysis, efficiency of analysis, and transparency of analysis.

Thank you for the opportunity to provide this information. We would be happy to respond to any questions you may have regarding this report.

Sincerely,

Seth Dearmin
Chief of Staff

SD/jab

Cc: William Childs, Fiscal Research Division

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Executive Summary

Forensic services provided by the State Crime Laboratory continue to meet the highest quality standards possible. **During 2018, the lab received its first full re-accreditation visit and annual DNA Quality Assurance Standards (QAS) audit since receiving ISO/IEC 17025 accreditation in June of 2013.** After intense review, the State Crime Laboratory was awarded ISO/IEC 17025 reaccreditation by ANAB including the expansion of DNA to the new Western Regional Lab. **Of special note, with the Lab's re-accreditation in May of 2018, the NC State Crime Lab reached a benchmark of thirty consecutive years of forensic laboratory accreditation.**

The SCL has worked over four years to gain continuous process improvements using Lean Six Sigma efficiency methodology, advanced computerized systems, increased robotic instruments, streamlined evidence management processes, strategic redistribution of casework and staff and improved coordination with the courts and our partners in the criminal justice system. The SCL has reached a point, however, in which continued progress can only be gained with additional resources.

Case submissions have increased by 15.25% compared to the FY 16-17 and **increased by 28.57% in the last three years.** That is a strong indicator of confidence by local law enforcement agencies to submit cases to the SCL knowing they will receive cases in shorter amounts of time without compromising quality. **Case completions however have decreased over the last two years.** This is simply due to Drugs and Toxicology making up 80.46% of all Lab submissions and those submissions have included complex opioids such as fentanyl and fentanyl-based analogs. These types of drugs require extensive testing, lengthening the turnaround time resulting in a decrease in the number of cases completed. Sexual Assault Evidence Collection Kit submissions and Latent Evidence submissions have also complicated completion rates. In addition, court testimony continues to increase (5.62% from last year and 12.7% in the last three years) requiring scientists to be away from the lab, aggravating their ability to keep pace.

The Lab is respectfully requesting an expansion of twelve scientist positions to keep pace with demand from the Criminal Justice Community. As a reminder, the hiring and training of new forensic scientists takes approximately one year for Drug Chemistry forensic scientists and between eighteen to twenty-four months for DNA and Latent Evidence forensic scientists.

Session Law 2017-57, Section 17.7 included language directing each local law enforcement agency to conduct an inventory of untested Sexual Assault Evidence Collection Kits (SAECKs) in its custody or control and report its findings to the DOJ and SCL no later than January 1, 2018. The DOJ and the SCL reported to the legislature its findings on March 1, 2018 which indicated there were 15,160 untested SAECKs in NC.

The Sexual Assault Evidence Collection Kit Tracking & Inventory Management System or (S.T.I.M.S.) went live on October 1, 2018. Training videos are available on the NCDOJ.GOV website. **The Lab is respectfully requesting one S.T.I.M.S. Administrator position, FTE (R) and \$2M annually for the next five years (NR) to test previously untested Sexual Assault Evidence Collection Kits (SAECK) in order to clear the 15,160 untested kits.**

Finally, the State Crime Lab continues to face challenges, particularly a recurring funding source for the purchase or lease of scientific equipment, complimentary recurring increases in scientific supply funds, and the requirement that lab scientists provide in-person court testimony. However, with continued support, the State Crime Lab will continue to provide quality and timely forensic analysis and impartial expert testimony.

NORTH CAROLINA STATE CRIME LABORATORY REPORT

FISCAL YEAR 2017-2018¹

This Report is presented to the Chairs of the North Carolina General Assembly Joint Legislative Oversight Committee on Justice and Public Safety and to the North Carolina General Assembly Fiscal Research Division as directed by Section 17.2 of S.L. 2013-360, the Appropriations Act of 2013. Under the Section, DOJ must report annually each year on the work of the North Carolina State Crime Laboratory (State Crime Lab) during the previous fiscal year.

I. Preface

The State Crime Lab saw some changes in the executive management team. Due to retirements, Amanda Thompson, was promoted to Assistant Director for Administrative Operations and Liz Patel was promoted to Assistant Director for Technical Operations. Assistant Attorney General William P. Hart, Jr. was designated as Lab Special Counsel and Sarah Jessica Farber joined the Department of Justice as the new Lab Ombudsman.

II. Quality (Accreditation and Certification)

Forensic services provided by the State Crime Laboratory continue to meet the highest quality standards possible. The State Crime Lab maintains accreditation under strict ISO/IEC 17025 requirements and is accredited by ANAB. ANAB is a signatory to the International Laboratory Accreditation Cooperation (ILAC) as required by Session Law 2011-19 on accreditation for the State Crime Laboratory. During 2018, the lab received its first full re-accreditation visit and annual DNA Quality Assurance Standards (QAS) audit since receiving ISO/IEC 17025 accreditation in June of 2013. After intense review, the State Crime Laboratory was awarded ISO/IEC 17025 reaccreditation by ANAB. In addition, DNA was expanded to the new Western Regional Lab. It should also be noted that all **eligible scientists** at the State Crime Lab **are independently certified or working toward this goal.**² Of special note, with the Lab's re-accreditation in May of 2018, the NC State Crime Lab reached a benchmark of thirty continuous years of forensic laboratory accreditation.

III. Case Submissions and Completions³

1. Case Submissions

In FY 2017-2018, more than 35,997 cases including over 52,000 items of evidence were accepted at the Crime Lab's three locations. (See Figure 1) This is a **15.25% increase in case submissions** compared to the FY 16-17 and a **28.57% increase in the last three years**. Including DNA Database submissions, the State Crime Lab system received 61,997 submissions in FY 2017-2018.

Case submissions are broken down as follows:

- The **main State Crime Laboratory in Raleigh** received 18,503 casework submissions and 26,000 DNA Database submissions for a total of 44,503 submissions.
- The **Triad Regional Crime Laboratory** received 7,857 casework submissions.
- The **Western Regional Crime Laboratory** received 9,637 casework submissions.

¹This Report addresses the statutorily mandated "previous fiscal year" (July 1, 2017 - June 30, 2018), and thus only briefly mentions, when required by context, important Crime Lab developments occurring on or after July 1, 2018, including, for example, funding in the 2018/2019 Appropriations Act (ratified June 28, 2018, and generally effective July 1, 2018), providing funding for the renovation of the fourth floor of the main lab for the disciplines of Drug Chemistry and Toxicology.

² Eligible forensic scientists are waiting for the appropriate independent certifying body to schedule certification testing.

³ This information is provided in compliance with S.L. 2013-360 (1) and (2) which requires that the Annual Crime Lab Report contain "information about the workload of the Laboratory during the previous fiscal year, including the number of submissions and completions, identified by the forensic discipline, received at each locations of the Laboratory."

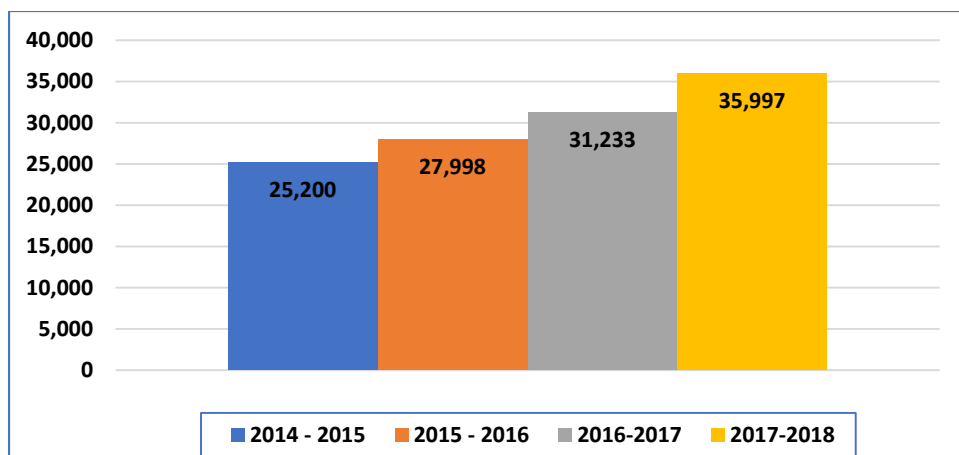


Figure 1 Annual Case Submissions

a. Case Submissions by Forensic Discipline and Lab Location

In FY 2017-2018, the State Crime Lab received the following cases, broken down by forensic discipline and laboratory location:

	<u>Raleigh</u>	<u>Triad</u>	<u>Western</u>	<u>TOTALS</u>
Drug Chemistry	9,692	3,945	6,859	20,496
Toxicology	3,830	2,675	2,029 ⁴	8,534
Forensic Biology	2,286	429* ⁵	325	3,040
DNA Database	26,000	0	0	26,000
Latent	754	468	137	1,359
Digital	61	13*	18*	92
Trace Evidence	435	164*	139*	738
Firearm & Tool Mark	1,445	163*	130	1,738

In FY 2017-2018 approximately 7,200 of the 26,000 DNA database samples received were duplicates. This is an increase of over two-thousand duplicates from FY 2016-2017. Duplicate submission and improper use of kits during collection continues to impact the DNA Database Section. The Laboratory pays approximately \$5.00 per kit for the collection kits, which are provided to law enforcement agencies at no cost. The duplicates submitted in FY 2017-2018 cost \$36,000. To maximize taxpayer resources, the Lab encourages ongoing training in efficient collection procedures for submitting law enforcement agencies. Training to reduce duplicate sample submissions is available on the North Carolina Justice Academy website. In addition, the Lab notified all agencies submitting duplicates in February of 2018 and worked

⁴ The Western Regional Laboratory provides drug chemistry analysis, forensic biology analyses, as well as latent evidence and firearm & tool mark examinations. The Western Lab currently does not conduct trace evidence, digital evidence and convicted offender or DNA upon arrest samples.

The Triad Regional Laboratory provides drug chemistry and toxicology analyses as well as latent evidence examinations. The Triad Lab does not perform examinations of firearm and tool mark, digital or trace evidence, forensic biology analyses, or convicted offender or DNA upon arrest samples.

⁵ Case submissions to a Regional Laboratory for a forensic discipline not offered at that Lab (identified by the * symbol) are transferred to the appropriate Lab location for analysis. The chart reflects all cases received at each Lab location, regardless of whether the requested analysis was offered at that Lab.

with IT programmers to changes CJLEADS so it would display DNA sample in CODIS. This program enhancement did not go live until June of 2018. It is anticipated that these two proactive measures by the Lab will reduce duplicates in FY18-19.

b. Case Submissions by County⁶

Case work and evidence item submissions over the past five fiscal years per North Carolina County may be found in Appendix A.

2. Case Completions

For FY 2017-2018, scientists in the State Crime Lab system worked 52,032 submissions, broken down as follows:

- The **main State Crime Lab in Raleigh** worked 18,891 case submissions and 19,016 profiles processed for the DNA Database.
- The **Triad Regional Crime Lab** worked 5,951 case submissions.
- The **Western Regional Crime Lab** worked 8,174 case submissions.

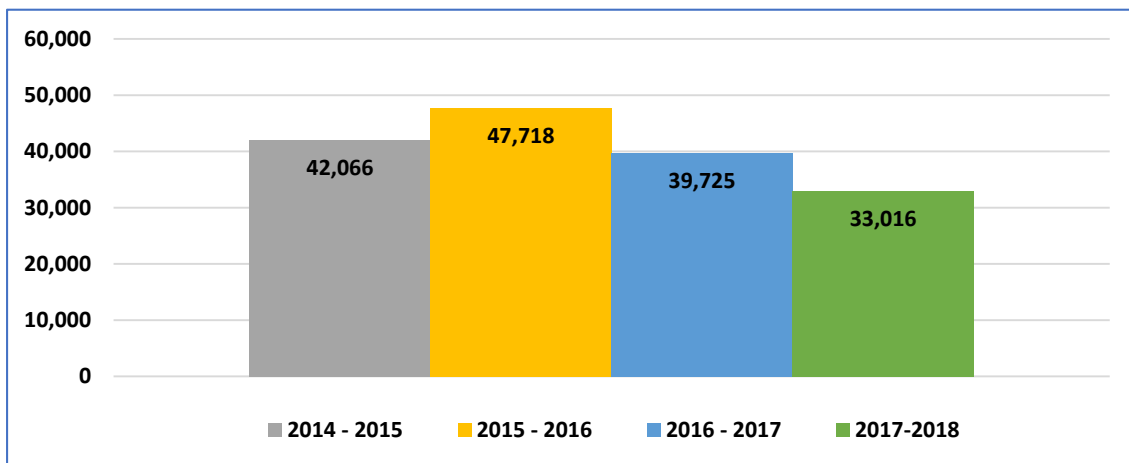


Figure 2 Annual Case Record Completions

a. Case Completions by Forensic Discipline and Lab Location

In FY 2017-2018, the State Crime Lab completed the following cases, broken down by discipline and lab location:

	<u>Raleigh</u>	<u>Triad</u>	<u>Western</u>	<u>TOTALS</u>
Drug Chemistry	8,452	2,818	5,428	16,698
Toxicology	3,671	2,884	2,327	8,882
Forensic Biology	3,384	6	5	3,395
DNA Database	19,016	0	0	19,016
Latent	890	238	339	1,467
Digital	108	2	1	111
Trace Evidence	853	1	9	863
Firearm & Tool Mark	1,533	2	65	1,600

⁶This information is provided in compliance with S.L. 2013-360 (3) which requires that the Annual Crime Lab Report contain "A breakdown by county of the number of submissions received by the Laboratory in the previous fiscal year." The numbers in these tables do not include Convicted Offender or DNA upon Arrest submissions.

Case completions have decreased over the last two years. This is simply due to Drugs and Toxicology making up 80.46% of all Lab submissions and those submissions have included complex opioids such as fentanyl and fentanyl based analogs. **These types of drugs require extensive testing lengthening the turnaround time resulting in a decrease in the number of cases completed; however, improvements in efficiency and methodology have led to decreased turnaround times throughout the Lab.** Sexual Assault Evidence Collection Kit submissions and Latent Evidence submissions will further impact completion rates in the future – a more detailed explanation is provided in Section VII. The NC Conference of District Attorneys and all forty-four Elected District Attorneys continue to work very closely with the Lab to reduce stop works (cases that the DA’s office has determined no longer require analysis). (See Figure 2.)

Notable successes of the DNA Database Section include a **record 591 hits to the DNA database**, which now contains more than **340,000 DNA profiles**. New technology now allows faster input of DNA samples into the database where it can be used to identify suspects in unsolved cases.⁷

b. Lead Times⁸

Lead times at the State Crime Lab continue to improve as additional scientists complete their required training and begin to work on active cases. **Average lead time for the lab (the time the customer feels) is 183 days.** Lead times for individual cases vary depending on the amount of evidence submitted and the type or types of analysis requested, and certain **cases can be worked in as little as days with a rush request from a District Attorney.** For example, a DWI case submission may include a single vial of blood to be tested for alcohol while homicide case submissions may include 75 to 150 pieces of evidence. Even a single piece of evidence can require multiple types of analysis; for example, a firearm may be submitted for ballistics, fingerprint and DNA analyses.

c. Rush Case Program

The State Crime Lab continues to operate a successful rush case program to give District Attorneys the option to expedite cases when appropriate. Upon the request of a District Attorney, **the Lab can rush or expedite a case for public safety or court purposes.** Depending on the evidence submitted and the type(s) of analysis requested, rush cases can be worked in a matter of days. Lab management welcomes inquiries from District Attorneys about cases where a rush request may be needed.

d. Court Testimony and Judicial Efficiencies

During FY 2017-2018, the State Crime Lab continued to feel the effects of the 2009 U.S. Supreme Court ruling in *Melendez-Diaz v. Massachusetts* that requires forensic scientists to provide live, in-court testimony rather than testifying by sworn affidavit. More time spent by scientists in court or traveling to court means less time in the lab working on cases.

In FY 2017-2018, Crime Lab scientists spent a total of **3,697** hours traveling to court, waiting to testify or testifying. This is an **increase of 197 hours or 5.62%** from FY 2016-2017 and a 12.71% increase from FY 2015-2016. Of those hours, Crime Lab scientists spent 1,928.63 hours traveling to court, **1,434.07 hours waiting to testify** (an increase of over 246.53 hours from the previous year), and 334.95 hours testifying. (See Figure 3.) **Assistance is still needed from our criminal justice stakeholders to minimize time forensic scientists spend in court and away from the lab.** The seventeen

⁷ At the writing of this report, the average time to receive convicted offender (CO) or arrestee (AR) samples and input into the database is approximately 14 days.

⁸ **Lead Time** is defined as the time from when the evidence is submitted to the State Crime Lab to when the report is published. This includes time the evidence sits in the Lab evidence vault waiting to be assigned to an analyst. **Turnaround time** is defined as the time from when the analyst receives the evidence until the time they publish a report at the completion of their analysis.

recommendations from the *UNC School of Government's Report of the Crime Laboratory Working Group: Administrative Solutions to Alleviate Lab Backlog* specifically outlines recommendations to minimize wait time for our analysts.

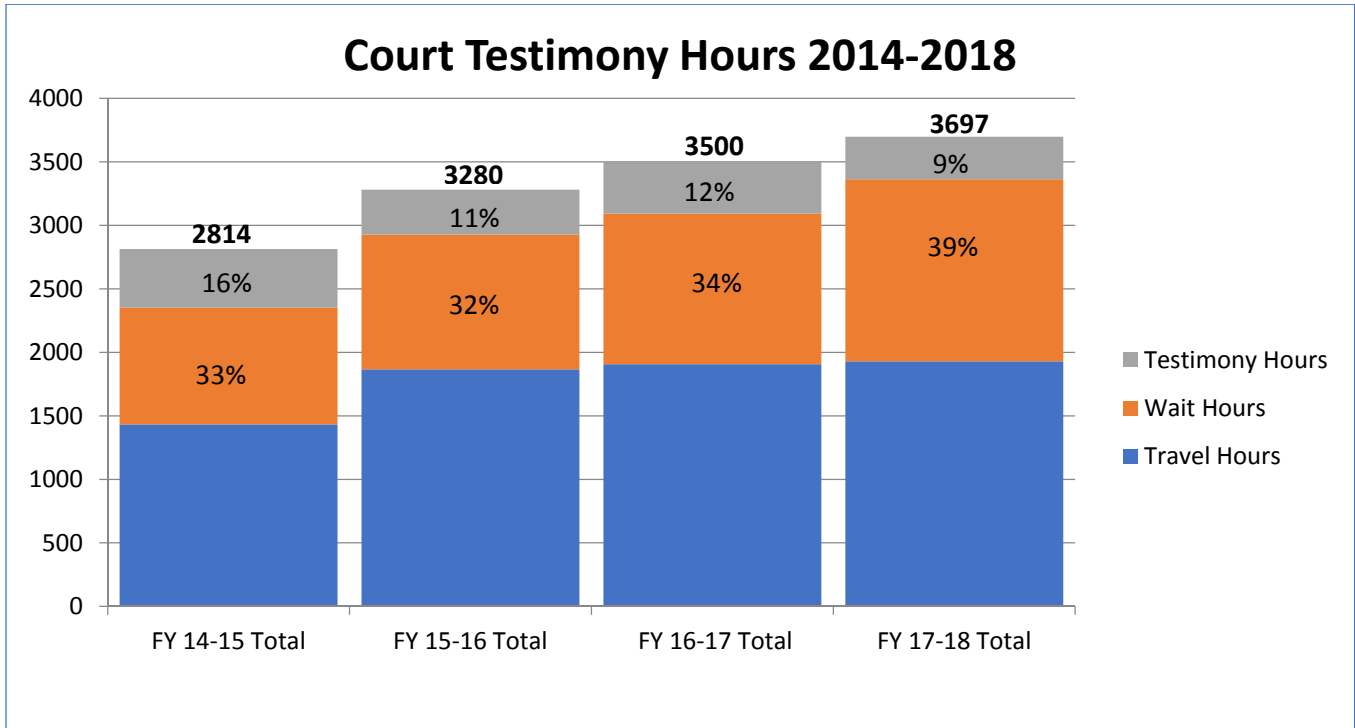


Figure 3 Court Testimony Hours 2014-2018

Nearly half of all Judicial Districts in North Carolina agreed to adopt the recommendations from the School of Government report. **The State Crime Lab acknowledges the positive attention given to this important matter and continues to request assistance from our criminal justice stakeholders to minimize time forensic scientists spend in court and away from the lab.**

e. Outsourcing and Untested Sexual Assault Evidence Collection Kits (SAECK)

The North Carolina State Crime Laboratory (SCL) and the North Carolina Attorney General continue to take proactive steps to address **Sexual Assault Evidence Collection Kits (SAECK) that remain untested in local jurisdictions.** The SCL secured two private vendor laboratories to assist in testing viable, untested SAECKs. Both vendor laboratories are accredited to ISO/IEC 17025 standards and FBI Quality Assurance Standards for DNA Testing Laboratories. This proactive approach has begun to identify viable, untested SAECKs that are being tested, at no cost to the local agency, while allowing the SCL to continue working current cases. As of the date of this report, 587 SAECKs have been approved for testing.

Session Law 2017-57, Section 17.7 included language directing each local law enforcement agency to conduct an inventory of untested Sexual Assault Evidence Collection Kits (SAECKs) in its custody or control and report its finding to the DOJ, SCL no later than January 1, 2018. The DOJ and the SCL reported to the legislature its findings on March 1, 2018. This one time legislatively mandated inventory indicated there were 15,160 untested SAECKs in NC. It is expected that the Department of Public Safety Working Group on Sexual Assault Kits will recommend that all kits be tested, in keeping with legislative intent. **The Sexual Assault Evidence Collection Kit Tracking & Inventory Management System (S.T.I.M.S) went live on October 1, 2018. Training videos for all types of users to include survivors, law enforcement agencies, medical providers and forensic crime laboratories are available on the NCDOJ.GOV website. S.T.I.M.S. will provide real**

time tracking of all SAECKs throughout the investigative process. S.T.I.M.S. needs a full time administrator to manage the system and the hundreds of agencies using the system.

Testing of these kits is dependent on funding. The legislature has already appropriated \$250,000 (R) for outsourcing which the SCL has been judiciously using to assist law enforcement agencies who voluntarily submit their kits for testing. **The estimated total cost for outsourcing the 15,160 kits at an average cost of \$700 per kit is approximately \$10.6 M. The vendor labs can only handle about 3,000 kits per year total or approximately \$2.1M annually which means the project will take approximately five and a half years, assuming that all 15,160 kits are tested. The Lab is respectfully requesting one S.T.I.M.S. Administrator FTE (R) and \$2M annually for the next five years to test previously untested Sexual Assault Evidence Collection Kits (SAECK) in order to clear the 15,160 untested kits.**

The DOJ and the SCL were recently notified on September 21 by the USDOJ, Office of Justice Assistance of a \$2M grant award of which 50% can be used for testing; however, the release of this funding is dependent on further certification of the untested SAECKs reported in the March 1, 2018 inventory report. Based on other jurisdictions who have received this grant, the release of the funding may take up to a year from the award date.

IV. Process Improvements

The State Crime Lab continues its concerted effort to identify cases that have been disposed of in court (“stop-work cases”) and no longer need forensic analysis. The **State Crime Lab routinely provides prosecutors with lists of cases** which appear to have cleared the court system but for which the Lab has not received a disposition notice, requesting confirmation that the case is completed and that no further Lab work is required. The NC Conference of District Attorneys has facilitated prosecutorial review of these notices and **all forty-four District Attorneys are participating**. As a result, the Lab is able to focus on the cases where forensic analysis is still needed.

The State Crime Lab has partnered with the NC Department of Justice (DOJ) Information Technology Division (ITD), NC Government Data Analytics Center (GDAC), NC Conference of District Attorneys, NC Administrative Office of the Courts (AOC), and the Statistical Analysis System (SAS) Institute, Inc. to develop a software solution to **automate the stop work process within the laboratory information management system**. The group is in testing phase now with an anticipated solution sometime in FY 2017-2018. **District Attorneys will be able to access and update case dispositions through the State Crime Lab’s web-based laboratory information management system without the Lab providing lists.**

V. Human Capital

The State Crime Lab saw a slightly higher turnover with employees compared to the last four years (see previous Annual Reports). In FY 2017-2018, there were thirteen resignations, one termination and two retirements. **Of special note, on July 1, 2015 OSHR established a Special Minimum Rate (SMR) for Forensic Scientist Is to assist with hiring and retention. This SMR ended with the implementation of the new class and comp system which took effect on June 1, 2017; thereby, creating inequity for our new hires.** The State Crime Lab had an 8.71% attrition rate, and a 14.69% vacancy rate at the end of the fiscal year. Based on a 2015 national survey data from the US Bureau of Labor and Statistics, the NC attrition rate is less than the attrition rate in state crime labs across the nation (16%)⁹

Additional demographics indicate the State Crime Lab work force is composed of 53% Millennials and 77% females. To assist the State Crime Lab in retention, a concerted effort has been made to create promotional opportunities through career advancement. **Twenty-eight promotions were conducted during FY 2017-2018.**

⁹ <https://www.bls.gov/oes/2015/may/oes194092.htm>

Diversity within the State Crime Lab work force remains an area of continued emphasis. At the end of the fiscal year, the racial/ethnic breakdown is 86% Caucasian (down 1% from FY 16-17), 8% African-American, 2% Hispanic, 1% Indian, 2% Asian (up 1% from FY 16-17), and 1% Other.

VI. Fiscal Resources¹⁰

At the beginning of calendar year 2014, the State Crime Lab began participating in **Project Foresight** through the West Virginia University, College of Business & Economics. The purpose of the collaboration was to begin building a detailed picture of the fiscal resources required to operate a forensic laboratory to include determining the cost of each test.

As newly hired scientists completed their training and began work on active criminal cases and as submissions have increased for the last three years, the State Crime Lab’s **supply costs have also increased.** During FY 2017-2018, the State Crime Lab expended over \$1.8 M (up from \$1.4 M in FY 16-17) on scientific supplies of which 80% (up from 75% in FY 16-17) was DNA. (See Figure 4.) Of that amount, **24% or \$432,890 (decreased from 31% or \$455,943 in FY 16-17) was from General Appropriations** and the remaining **76% or \$1,349,907 (increased from 69% or \$1,029,158 in FY 16-17) was from DNA Grant funding.** (See Figure 5.)

The FORESIGHT Project Report indicates that the NC State Crime Lab is comparable to other like size, publically funded state forensic laboratories servicing like size state populations. **Thirteen of the fourteen investigative areas noted were less in cost per case compared to the FORESIGHT 75th National Percentile.** Note that one item may be investigated and counted in several investigation areas. The cost includes allocations for capital, wages & salary, benefits, overtime & temporary hires, chemicals, reagents, consumables, gases, travel, quality assurance and accreditation, service of instruments, non-instrument repairs and maintenance, equipment leasing, utilities, telecommunications, overhead, and other expenses. (See Figure 6.)

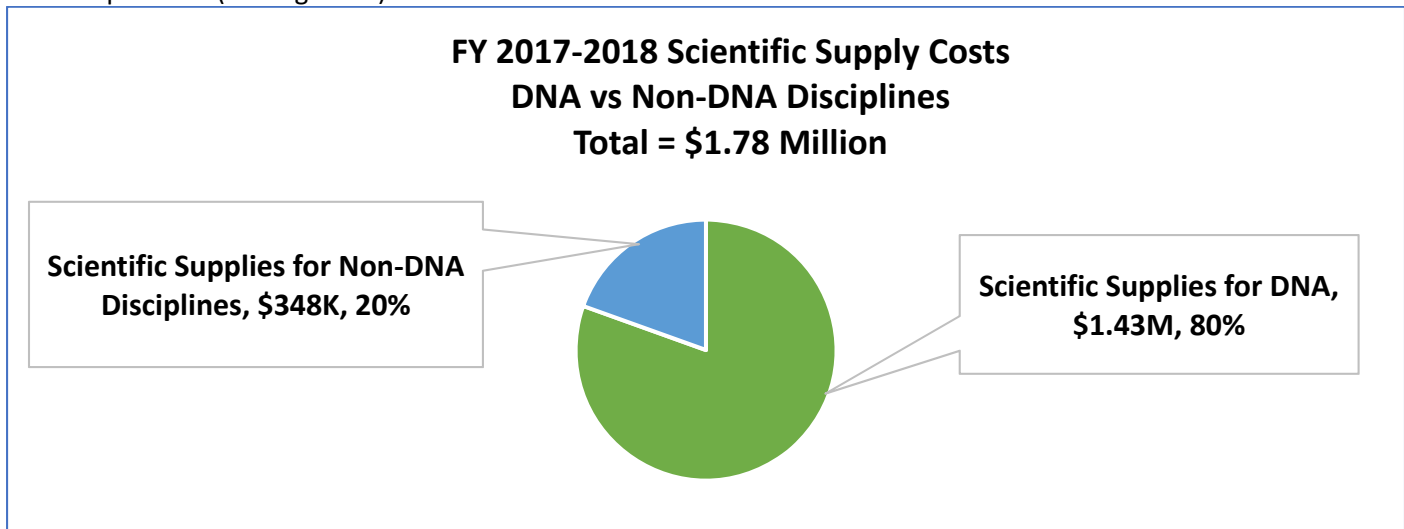


Figure 4 FY 2017-2018 Scientific Supply Costs

¹⁰S.L. 2013-360 (4) also provides that the Annual Crime Lab Report contain “[a]n average estimate of the dollar and time cost to perform each type of procedure and analysis performed by the Laboratory.” The Crime Lab initiated participation in “Project Foresight,” operating out of West Virginia University, which compiles such information for forensic laboratories. The data collection deadline for the Project Foresight Annual Report published the next May is Dec.1. The FY 2017-2018 State Crime Laboratory Annual Report is the second year in which a full year of data reflecting a comparative breakdown of analysis costs is being addressed.

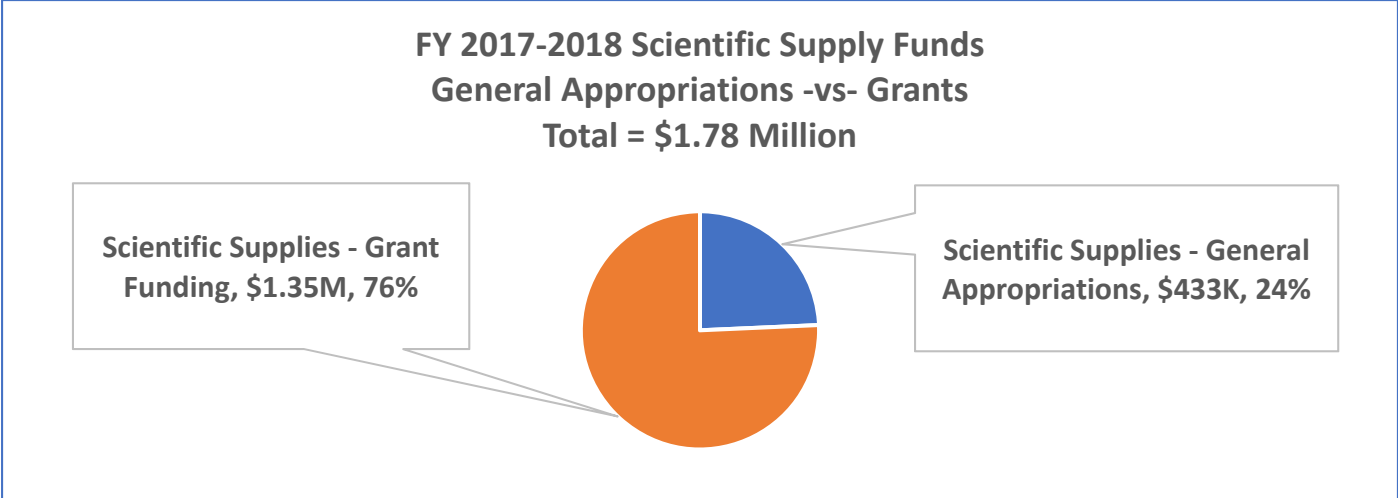


Figure 5 Scientific Supply Funds from General Appropriations vs Grants

**Project FORESIGHT Annual Report, 2016-2017
National Percentile for Cost per Case by Investigative Area**

Area of Investigation	25th percentile	Median	75th percentile	NC State Crime Lab
Toxicology ante mortem (excluding BAC)	\$583	\$736	\$1,209	\$902
Blood Alcohol	\$110	\$177	\$444	\$71
Digital evidence -Audio & Video	\$896	\$11,978	\$32,934	\$19,417
DNA Casework	\$1,306	\$1,885	\$3,295	\$1,566
DNA Database	\$42	\$103	\$178	\$100
Drugs -Controlled Substances	\$301	\$492	\$671	\$261
Explosives	\$8,378	\$16,064	\$32,736	\$10,553
Fingerprints	\$521	\$884	\$1,468	\$1,907
Fire analysis	\$1,328	\$2,717	\$4,047	\$695
Firearms and Ballistics	\$1,050	\$1,880	\$3,702	\$1,538
Gun Shot Residue (GSR)	\$2,530	\$3,535	\$4,945	\$640
Marks and Impressions	\$4,674	\$7,786	\$13,743	\$2,207
Serology/Biology	\$997	\$1,956	\$3,458	\$1,235
Trace Evidence	\$3,198	\$4,832	\$8,507	\$4,478

Figure 6 Project FORESIGHT Annual Report, 2016-2017 National Percentile for Cost per Item by Investigative Area

During FY 2017/2018, the State Crime Lab utilized available grants to refresh scientific equipment, purchase supplies and pay for training to meet mandated certification and accreditation requirements. The Lab received three grants for FY 2017-2018 through various federal programs. The grant awards included: \$231,145 for scientific instrumentation and equipment for Drug Chemistry; \$479,498 for scientific instrumentation, equipment and training for Toxicology; and \$1,597,337 for software, equipment and training for Forensic Biology and DNA Database.

The North Carolina Forensic Science Advisory Board, composed of 15 renowned national forensic experts, reported in a letter to the North Carolina General Assembly the “tremendous progress by the State Crime Laboratory over the past 36 months...” as well as “...an urgent need for more Laboratory resources.” The Board unanimously supported and strongly

recommended that the General Assembly establish a **special revenue reserve fund to finance non-recurring expenses** such as scientific equipment and to **increase funding for scientific supplies to offset decreasing federal grants**. To remain a state-of-the-art forensic laboratory, scientific instrumentation and equipment must be replaced and updated based on current industry standards. Realistically, \$1.5 M recurring would allow a ten year replacement schedule and combined with the nearly \$3.5 M received over the last two years, the State Crime Lab would be very close to industry standards. A special revenue reserve fund would provide contingency funding to offset periodic reductions in crime lab court fees authorized pursuant to NCGS 7A-304 (a) (7).

VII. Expansion

The State Crime Lab has conducted significant analysis to determine the future needs within each of the disciplines. **The SCL has worked over four years to gain continuous process improvements using Lean Six Sigma efficiency methodology, advanced computerized systems, increased robotic instruments, streamlined evidence management processes, strategic redistribution of casework and staff and improved coordination with the courts and our partners in the criminal justice system. The SCL has reached a point, however in which continued progress can only be gained with additional resources.**

There are three major factors that are influencing increased submissions and decreased case completions. The first factor is tied to Sexual Assault Evidence Collection Kits and the recently completed audit of untested sexual assault kits (over 15,000). It is expected that the Department of Public Safety Working Group on Sexual Assault Kits will recommend that all kits be tested, in keeping with legislative intent, for both the previously untested kits and for all kits going forward of the audit. If approved, the recommendations will require additional forensic scientists to complete the anticipated increase in submissions. As a result, **six DNA forensic scientists** are requested.

The second factor is the opioid crisis which has had a significant impact on the SCL for Drug Chemistry analysis. As stated previously, the complexity of these types of cases which lengthen the turnaround time and the sheer volume (80% of all lab submissions) requires that we expand Drug Chemistry. **Four Drug Chemists** are needed to address this increasing problem.

The final factor is a threefold issue involving an increase in Latent Evidence (fingerprint) submissions. First, over the last two years, local law enforcement agencies have begun to shut down their latent evidence labs for mostly economic reasons which has resulted in a 9% increase in submissions. Second, a recent software upgrade to the NC State Automated Fingerprint Identification System (SAFIS) generated 446 SAFIS hits (hits made to unknown latent prints entered into SAFIS from a current case) and Reverse hits (hits made to previously entered latent prints). This upgrade created an unprecedented 54% increase in SAFIS hits compared to FY 16-17 resulting in additional work which lengthened turnaround time and decreased case completions. Finally, in FY 18-19, the NC State Bureau of Investigation (custodian of NC SAFIS) will upgrade the NC SAFIS system with new terminals and software. The cost of this upgrade is being passed to each agency user. Note: the SCL has applied for a grant to pay for three upgrades (total of approximately \$500K), one in each Lab location. Due to the cost of this upgrade, several local agencies have indicated to the SCL that they will not upgrade or renew their SAFIS terminal. As these agencies turn off their SAFIS equipment, their cases will be submitted to the SCL. Therefore, the SCL is requesting **two Latent Evidence forensic scientists**.

In summary, the SCL is respectfully requesting twelve new scientist positions. With the addition of these scientists, it is anticipated that the SCL will be able to sustain its current level of service for the criminal justice community as well as continue to improve turnaround time as submissions continue to increase.

VIII. Conclusion

Forensic services provided by the State Crime Laboratory continue to meet the highest quality standards possible. **During 2018, the lab received its first full re-accreditation visit and annual DNA Quality Assurance Standards (QAS) audit since receiving ISO/IEC 17025 accreditation in June of 2013.** After intense review, the State Crime Laboratory was awarded ISO/IEC 17025 reaccreditation by ANAB including the expansion of DNA to the new Western Regional Lab. **Of special note, with the Lab's re-accreditation in May of 2018, the NC State Crime Lab reached a benchmark of thirty consecutive years of forensic accreditation.**

The SCL has worked over four and a half years to gain continuous process improvements using Lean Six Sigma efficiency methodology, advanced computerized systems, increased robotic instruments, streamlined evidence management processes, strategic redistribution of casework and staff and improved coordination with the courts and our partners in the criminal justice system. **The SCL has reached a point, however in which continued progress can only be gained with additional resources.**

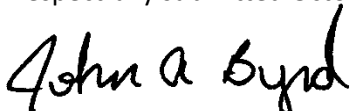
Case submissions have increased by 15.25% compared to the FY 16-17 and increased by 28.57% in the last three years. That is a strong indicator of confidence in local law enforcement agencies to submit cases to the SCL knowing they will receive cases in shorter amounts of time without compromising quality. **Case completions however have decreased over the last two years.** This is simply due to **Drugs and Toxicology making up 80.46% of all Lab submissions** and those submissions have included complex opioids such as fentanyl and fentanyl based analogs. **These types of drugs require extensive testing lengthening the turnaround time resulting in a decrease in the number of cases completed.** Sexual Assault Evidence Collection Kit submissions and Latent Evidence submissions will further impact completion rates in the future. As court testimony continues to increase (5.62% from last year and 12.7% in the last three years) scientists are away from the lab and aggravates their ability to keep pace.

The Lab is respectfully requesting an expansion of twelve scientists to keep pace with demand from the Criminal Justice Community. As a reminder, the hiring and training of new forensic scientists takes approximately one year for Drug Chemistry forensic scientists and between eighteen to twenty-four months for DNA and Latent Evidence forensic scientists.

The Sexual Assault Evidence Collection Kit Tracking & Inventory Management System or (S.T.I.M.S.) went live on October 1, 2018. Training videos are available on the NCDOJ.GOV website. **The Lab is respectfully requesting one S.T.I.M.S. Administrator, FTE (R) and \$2M annually for the next five years (NR) to test previously untested Sexual Assault Evidence Collection Kits (SAECK) in order to clear the 15,160 untested kits.**

Finally, the State Crime Lab continues to face challenges, particularly a recurring funding source for the purchase or lease of scientific equipment, complimentary recurring increases in scientific supply funds, and the requirement that lab scientists provide in-person court testimony. However, with continued support, the State Crime Lab will continue to provide quality and timely forensic analysis and impartial expert testimony.

Respectfully submitted October 15, 2018,



John A. Byrd

Director, North Carolina State Crime Laboratory

Appendix A - Submissions by County

County	7/1/2013 to 6/30/2014		7/1/2014 to 6/30/2015		7/1/2015 to 6/30/2016		7/1/2016 to 6/30/2017		7/1/2017 to 6/30/2018	
	Submissions	Items Submitted	Submissions	Items Submitted	Submissions	Items Submitted	Submissions	Items Submitted	Submissions	Items Submitted
Alamance	420	689	267	445	278	446	359	689	318	546
Alexander	66	108	46	93	72	142	89	259	89	142
Alleghany	21	22	34	42	30	55	13	19	29	62
Anson	89	326	63	153	65	129	55	235	56	99
Ashe	61	115	29	69	42	70	27	61	27	35
Avery	83	136	76	113	53	78	56	99	121	144
Beaufort	432	616	371	507	372	508	446	710	383	487
Bertie	61	86	33	51	24	70	56	137	83	105
Bladen	67	118	110	149	84	185	98	157	54	115
Brunswick	521	660	437	614	550	785	428	683	584	788
Buncombe	985	1745	897	1416	1046	1839	1051	1890	1358	1990
Burke	327	547	258	459	335	519	455	861	466	668
Cabarrus	615	1113	571	789	609	841	600	1009	718	960
Caldwell	376	638	325	529	325	650	324	542	302	442
Camden	26	53	21	29	17	25	13	13	7	11
Carteret	397	544	320	464	447	623	412	600	426	569
Caswell	127	146	47	62	68	151	78	139	41	64
Catawba	573	1066	652	1133	988	1430	885	1612	1041	1600
Chatham	135	235	133	233	126	212	118	219	128	253
Cherokee	66	106	55	113	81	133	102	175	116	144
Chowan	27	49	53	81	32	56	57	80	33	51
Clay	25	50	40	72	50	75	34	56	24	46
Cleveland	322	607	330	477	468	744	543	772	624	806
Columbus	247	388	203	336	204	391	142	292	109	155
Craven	316	511	268	590	347	675	351	599	384	726

County	7/1/2013 to 6/30/2014		7/1/2014 to 6/30/2015		7/1/2015 to 6/30/2016		7/1/2016 to 6/30/2017		7/1/2017 to 6/30/2018	
	Submissions	Items Submitted	Submissions	Items Submitted	Submissions	Items Submitted	Submissions	Items Submitted	Submissions	Items Submitted
Cumberland	916	1532	497	1023	247	1155	274	1186	431	841
Currituck	80	133	50	99	80	102	69	109	103	127
Dare	220	339	240	385	223	309	256	415	236	329
Davidson	650	972	326	441	330	486	435	709	551	718
Davie	58	77	99	135	85	117	88	162	108	153
Duplin	262	408	180	338	222	399	410	677	394	545
Durham	1706	3822	1299	3806	1376	4624	1066	3969	1001	3753
Edgecombe	358	492	328	442	253	377	206	331	280	399
Forsyth	471	852	501	980	925	604	282	799	758	847
Franklin	141	313	144	364	203	569	285	751	352	621
Gaston	859	1170	751	1151	857	1287	1120	1675	1211	1710
Gates	7	9	14	15	10	16	9	21	21	59
Graham	95	236	36	107	41	71	32	60	44	79
Granville	322	449	267	408	257	334	246	490	306	439
Greene	75	162	73	139	76	122	44	87	47	76
Guilford	1494	2197	1301	1993	1294	1965	1375	2635	1413	2168
Halifax	220	590	222	405	181	313	242	454	163	300
Harnett	349	500	339	514	204	402	226	480	261	399
Haywood	203	299	292	404	250	384	357	515	391	619
Henderson	353	536	275	443	350	526	397	612	483	773
Hertford	71	124	73	97	54	98	52	114	125	169
Hoke	212	574	195	652	234	635	203	553	197	361
Hyde	22	54	5	9	10	20	20	28	15	19
Iredell	382	503	302	507	341	560	262	571	306	632
Jackson	164	333	145	332	152	381	188	302	242	437
Johnston	672	1048	647	1110	706	1098	590	952	805	1068
Jones	62	95	56	73	52	66	70	109	45	52
Lee	265	409	218	462	217	405	211	417	257	394

County	7/1/2013 to 6/30/2014		7/1/2014 to 6/30/2015		7/1/2015 to 6/30/2016		7/1/2016 to 6/30/2017		7/1/2017 to 6/30/2018	
	Submissions	Items Submitted	Submissions	Items Submitted	Submissions	Items Submitted	Submissions	Items Submitted	Submissions	Items Submitted
Lenoir	392	613	394	661	413	783	480	1027	393	725
Lincoln	76	137	221	367	566	745	501	651	443	606
Macon	124	168	127	196	128	205	172	288	166	238
Madison	71	141	48	80	38	67	116	222	122	242
Martin	67	88	172	294	188	276	213	454	152	241
McDowell	141	200	124	213	137	182	177	314	201	334
Mecklenburg	406	573	354	499	444	754	375	715	358	515
Mitchell	46	84	31	53	86	132	41	90	29	53
Montgomery	89	150	38	76	38	98	95	205	55	83
Moore	466	672	228	340	264	421	233	469	230	372
Nash	367	561	420	616	455	669	392	653	487	668
New Hanover	437	827	537	1247	666	1689	829	2153	944	1762
Northampton	45	106	38	101	121	235	41	118	63	178
Onslow	603	958	449	698	513	835	576	959	768	1212
Orange	520	811	384	755	322	593	462	986	441	647
Pamlico	25	49	79	108	126	183	117	184	231	290
Pasquotank	175	249	113	192	122	216	210	359	205	292
Pender	110	149	70	105	76	115	144	270	80	124
Perquimans	38	78	43	74	15	20	27	46	34	85
Person	173	229	162	218	130	166	173	246	188	231
Pitt	346	525	237	394	211	456	479	883	1032	1348
Polk	48	60	79	125	87	163	117	179	89	103
Randolph	567	798	338	546	442	691	609	935	846	1258
Richmond	384	648	214	354	241	447	378	701	352	591
Robeson	371	908	281	588	311	592	327	672	394	967
Rockingham	340	691	254	392	247	369	247	609	295	465
Rowan	220	396	385	616	578	823	587	1067	720	1159
Rutherford	120	173	121	204	169	290	209	373	207	276

County	7/1/2013 to 6/30/2014		7/1/2014 to 6/30/2015		7/1/2015 to 6/30/2016		7/1/2016 to 6/30/2017		7/1/2017 to 6/30/2018	
	Submissions	Items Submitted	Submissions	Items Submitted	Submissions	Items Submitted	Submissions	Items Submitted	Submissions	Items Submitted
Sampson	359	567	272	424	302	463	175	326	316	509
Scotland	167	382	119	270	179	444	156	377	154	308
Stanly	135	253	192	319	187	322	261	492	362	447
Stokes	142	248	108	166	139	228	170	328	206	269
Surry	327	504	312	462	289	486	287	590	321	411
Swain	83	142	60	110	105	156	99	186	146	209
Transylvania	69	110	76	144	128	248	114	280	120	213
Tyrrell	44	45	31	34	15	18	4	4	51	57
Union	436	684	349	498	455	702	464	835	578	743
Vance	163	291	147	279	189	340	244	518	310	539
Wake	228	802	263	921	485	1954	589	1631	560	1316
Warren	32	73	37	98	22	34	31	57	75	120
Washington	32	57	21	55	30	40	15	26	23	25
Watauga	200	290	148	243	133	207	160	263	169	234
Wayne	404	837	377	675	488	908	601	1132	750	1301
Wilkes	282	508	257	381	320	525	305	532	332	472
Wilson	488	835	413	807	435	702	516	820	471	694
Yadkin	152	237	88	138	207	307	202	378	149	209
Yancey	58	111	60	101	99	148	79	136	70	101
TOTAL	27642	46920	23785	42090	27284	48704	28606	55830	32755	52337