North Carolina Department of Justice

ANNUAL REPORT

FISCAL YEAR 2023-2024

North Carolina State Crime Laboratory

December 20, 2024

Senator Danny Britt, Jr.
Representative Ted Davis, Jr.
Representative Carson Smith
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 2023-2024

Dear Members:

Pursuant to Session Law 2013-360, Section 17.2, the Department of Justice is pleased to submit the Fiscal Year 2023-2024 Annual Report for the North Carolina 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, efficiency, and transparency.

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

Sincerely,

Seth Dearmin
Chief of Staff

cc: Mark White, Fiscal Research Division
Morgan Weiss, Fiscal Research Division
Meredith Randolph, Fiscal Research Division

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Executive Summary

The State Crime Laboratory (SCL) continues to provide forensic services that meet the highest quality standards possible. The SCL has successfully maintained ISO/IEC 17025 (2017) accreditation and compliance with DNA Quality Assurance Standards (QAS). The laboratory's accreditation was continued in FY 23-24 after a surveillance assessment by our accrediting body. This marks the laboratory's thirty sixth year of accreditation.

The SCL is very appreciative of the four scientists included in the 2022-2023 budget. However, given current market competition, we are continuing to have difficulty retaining qualified staff. We are respectfully requesting an appropriated recurring salary adjustment fund to address retention needs for the Forensic Scientist series, including salary increases and promotional opportunities**.** This fund will allow us to offer more competitive salaries, fill current vacancies more quickly, and retain trained forensic scientists. Each time a trained scientist resigns, the Laboratory spends approximately $100,000 to train a new employee to fill the vacated position. In FY 2022-2023 alone, approximately 20 people were trained to fill open scientist positions – equating to $2M of state funds that were spent to pay employees who are not yet contributing to the pending caseload. In FY 2023-24, approximately 18 scientists were in training which equates to an additional $1.8M of state funds. During this time period, no evidence was analyzed by those analysts. This figure does not include the monetary loss of time set aside by current employees to train the new hires. This resulted in a loss of $3.8M over two years while incurring a strain on the system to complete training of analysts. A recurring salary adjustment fund would help to retain employees who have historically left for higher paying salaries and will give the state a larger return on investment.

The SCL is extremely grateful for the addition of a $1M recurring equipment fund in the FY 2022-2023 budget. To-date, the State Crime Laboratory has procured scientific instruments and equipment with this funding to further aid in technological advances and replace outdated and failing equipment. These purchases include, but are not limited to, RAPID DNA technology instrumentation[1] replacement of a distilled water filtration system, a hydrogen generator used in the analysis of DWI casework, replacement of Gas Chromatograph Mass Spectrometers (GC/MS)[2], replacement of Fourier Transform Infrared Spectroscopy (FTIR)[3], replacement of comparison microscopes for Firearms examinations and digital cameras for latent print examination. Such instrumentation and equipment are critical to casework in multiple disciplines within the laboratory system.

The testing of all inventoried sexual assault kits submitted pursuant to the Survivor Act, was completed in early 2024. Testing these older kits has solved numerous crimes, leading to a number of CODIS hits and arrests, especially in longstanding cold cases. Approximately 50% of those tested kits resulted in a CODIS hit to a known offender or another case, and subsequently provided law enforcement with an aid to their investigation.

In FY 23-24, the SCL gained efficiency in a number of disciplines through application of Lean Six Sigma methodologies, procurement and validation of advanced technologies and software, filling of vacant scientist positions and partnerships with stakeholders. One of the greatest gains for the SCL in the area of retention and casework is the ability for Toxicologists to testify remotely instead of in-person. Remote testimony has saved hundreds of hours of time as well as the cost of travel. This has allowed for more efficient testing of toxicology cases and ultimately benefits all stakeholders.

The State Crime Laboratory will continue to provide quality and timely forensic analysis and impartial expert testimony for the benefit of North Carolina's criminal justice system.

[1] *RAPID DNA Technology instruments have the ability to develop a profile using a single piece of equipment within approximately two hours. This technology is mostly utilized in the field or in booking stations. The FBI is in the processes of developing standards and policies for its use to analyze crime scene samples.*

[2] *Gas Chromatograph Mass Spectrometers are instruments used to identify the presence or absence of controlled substances DWI and Seized Drug casework.*

[3] *Fourier Transform Infrared Spectroscopy is an instrumental technique used by the Drug Chemistry Section in the analysis of seized drugs.*

NORTH CAROLINA STATE CRIME LABORATORY REPORT

FISCAL YEAR 2023-2024[4]

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.

I. Preface

The lab remains dedicated to ensuring that all operations are focused on achieving the mission to conduct the highest quality, technically proficient forensic analysis in a timely manner and provide impartial expert witness testimony.

II. Quality (Accreditation and Certification)

The SCL's forensic services continue to meet the highest quality standards possible. The SCL maintains accreditation under strict ISO/IEC 17025 requirements and is accredited by the ANSI National Accreditation Board (ANAB). ANAB is a signatory to the International Laboratory Accreditation Cooperation (ILAC) as required by Session Law 2011-19 on accreditation for the SCL. The Laboratory was assessed in April of 2024, by ANAB, using ISO/IEC 17025:2017 standards, the FBI Quality Assurance Standards for Forensic DNA Testing Labs, and the FBI Quality Assurance Standards for DNA Databasing Laboratories. As a result of the assessment, ANAB renewed the Lab's accreditation in the Field of Forensic Testing.

III. Case Submissions and Completions[5] and Pending Case Load

1. Case Submissions

In FY 2023-2024, **41,462** examination submissions, including over **56,562** items of evidence (See Appendix A), were accepted at the SCL's three locations. This is a 4.3 % decrease in submissions from last year, driven by the increase in sexual assault kit submissions.

Case submissions are broken down as follows:

- The **main SCL in Raleigh** received 18,685 case record submissions and 19,541 DNA Database submissions for a total of 38,226 submissions.
- The **Triad Regional Crime Laboratory** received 10,029 case record submissions.
- The **Western Regional Crime Laboratory** received 12,748 case record submissions.

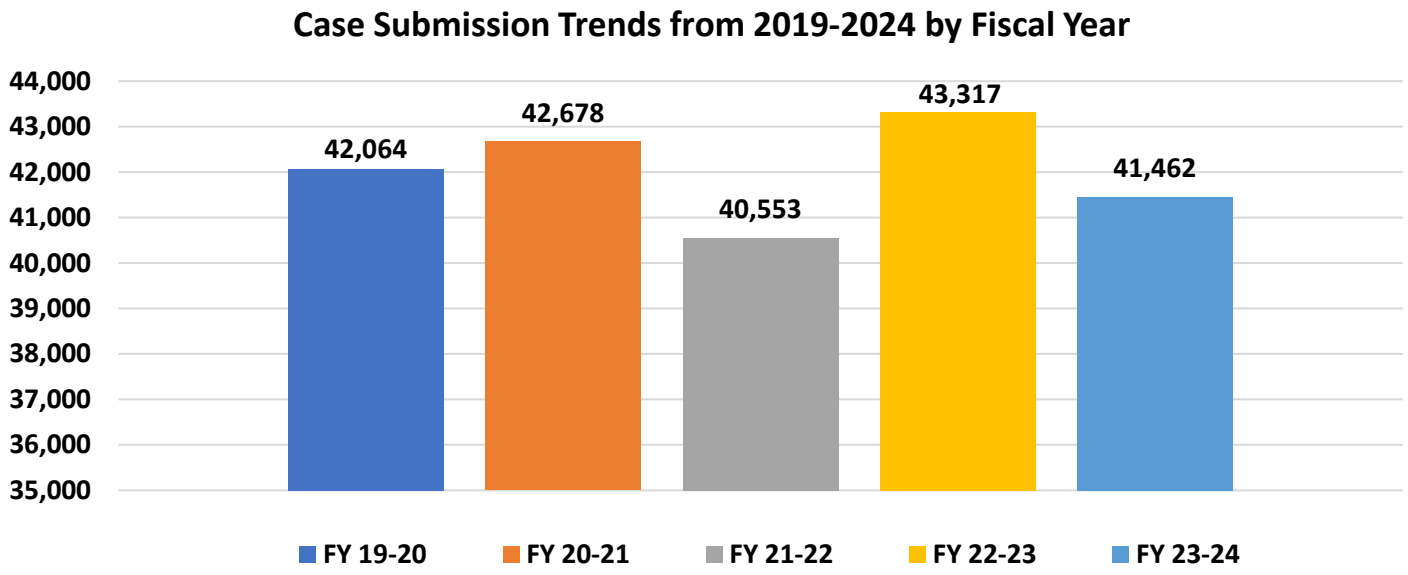
[4]*This Report addresses the statutorily mandated "previous fiscal year" (July 1, 2023 - June 30, 2024), and thus only briefly mentions, when required by context, important Crime Lab developments occurring on or after July 1, 2024.*

[5] *This information is provided in compliance with* S.L. *2013-360 (1) and (2) which requires that the Annual Crime Laboratory Report contain "(1) Information about the workload of the Laboratory during the previous fiscal year, including the number of submissions, identified by the forensic discipline, received at each location of the Laboratory. (2) Information about the number of cases completed in the previous fiscal year, identified by forensic discipline, at each location of the Laboratory."*

a. Case Submissions by Forensic Discipline and Laboratory Location

In FY 2023-2024, the SCL received the following cases, broken down by forensic discipline and laboratory location:

	Raleigh	Triad	Western	TOTALS
Drug Chemistry	7,874	5,090	7,987	20,951
Toxicology	3,766	2,761	2,501	9,028
Forensic Biology	3,840	1,168	1,014	6,022
Firearms	1,331	198	483	2,012
Latent Evidence	312	124	257	693
Trace Evidence	1,422	680	496	2,598
Digital Evidence	140	8	10	158
TOTALS	**18,685**	**10,029**	**12,748**	**41,462**



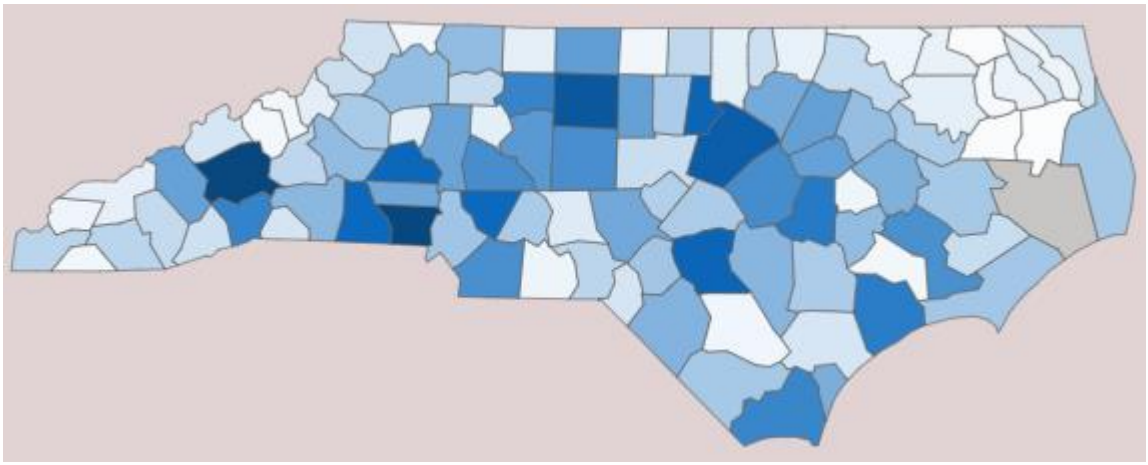
DNA Database Arrestee and Convicted Offender Submission:

There have been ongoing efforts to better educate the members of law enforcement on duplicate submissions, including sending letters to agencies with a high duplicate submission rate and providing training to the Department of Public Safety (DPS) prison staff. The DNA Database Section also partnered with Department of Justice (DOJ) IT and the Government Data Analysis Center (GDAC) to integrate the DNA Database SpecMan specimen manager system with Criminal Justice Law Enforcement Automated Data Systems (CJLEADS). This partnership resulted in another method of collecting that officers can use to verify the need for a new DNA sample. It also enables the Laboratory to identify instances where a sample was not collected. To maximize taxpayer resources, the Laboratory 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.

b. Case Submissions by County[6]

Evidence item submission data for the past five fiscal years per North Carolina County may be found in Appendix A. Here is a chart to display these submissions by case record[7]; the lighter color represents the fewest submissions, and the darker blue represents the most.

Heat Map showing Distribution of Submissions by County FY 2023-2024



[6]*This 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 as those number are captured in the "Annual Report of DNA Database".*

[7] *A case record is a sub-folder within an agency case file that results in a Laboratory Report. There may be multiple case records (Laboratory Reports) in a criminal case. For example, a homicide case submitted may result in a firearms report, a latent evidence report, and a DNA report.*

2. Case Completions

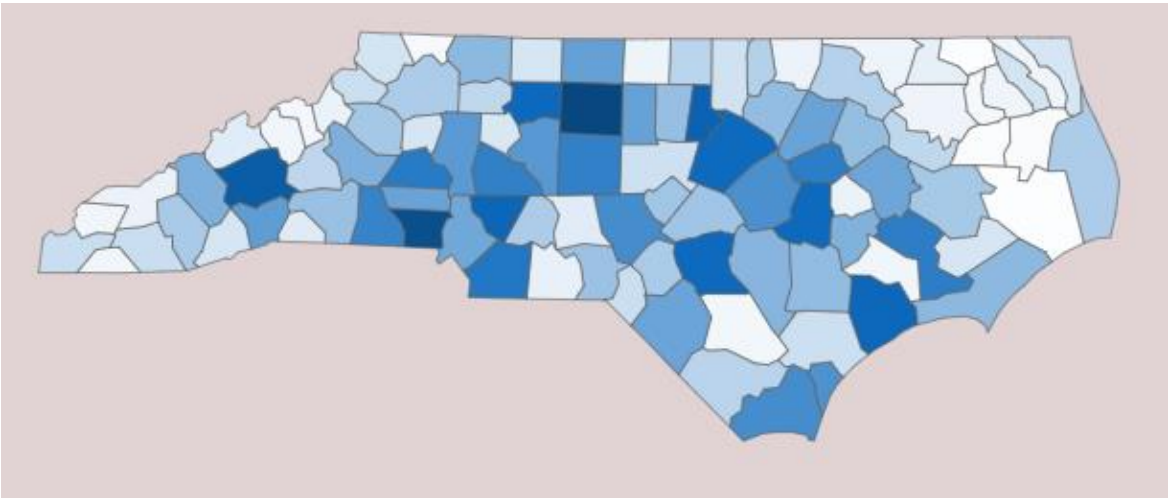
a. For FY 2023-2024, scientists in the SCL system worked **48,604** case records, broken down as follows:

- The full-service **Crime Laboratory in Raleigh** worked 25,235 case records, as well as 1466 CODIS hits to the DNA Database
- The **Triad Regional Crime Laboratory** worked 6,626 case records.
- The **Western Regional Crime Laboratory** worked 16,743 case records.

In FY 2023-2024, the SCL completed the following cases, broken down by discipline and laboratory location:

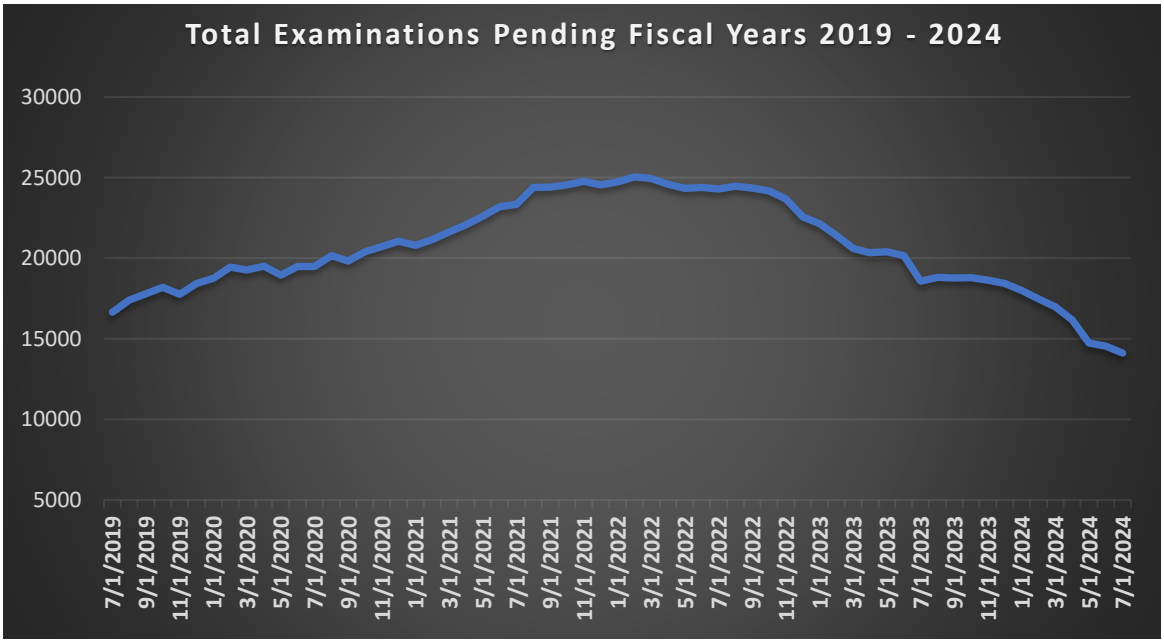
	Raleigh	Triad	Western	TOTALS
Drug Chemistry	12,519	3,940	9,717	**26,176**
Toxicology	4,302	2,566	3,101	**9,969**
Forensic Biology	3,952	1	2,927	**6,880**
Firearms	1,502	0	49	**1,551**
Latent Evidence	380	116	376	**872**
Trace Evidence	2,347	2	573	**2,922**
Digital Evidence	233	1	0	**234**
TOTALS	**25,235**	**6,626**	**16,743**	**48,604**

Heat Map showing Distribution of Completions by County FY 2023-2024



b. Pending Caseload over a five-year period

A five-year study of the Laboratory's pending caseload shows an increase of exams waiting for analysis through 2022 and then a decline in pending examinations from 2022 to 2024. There is a direct correlation between the number of scientists trained and cases that can be completed. Between July 2022 and June 2024, thirty-five scientists were trained and released to perform casework.



c. Lead Times[8]

Lead times at the SCL continue to improve as additional scientists complete their required training and begin to work on active cases. Average lead time for the SCL (the time the customer feels) calculated for the last reportable quarter of the fiscal year is 220 days (down from 270 days the prior year). Lead times for individual cases vary depending on the amount of evidence submitted and the types of analysis requested. The average turnaround time to complete a laboratory exam from start to finish is 47 days (down from 56 days the previous fiscal year).

d. Rush Case Program

The SCL continues to operate a successful rush case program to give Law Enforcement Agency Heads or prosecutors the option to expedite cases when appropriate. Upon the request of a Law Enforcement Agency Head or prosecutor the SCL 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. Laboratory management welcomes inquiries from Law Enforcement Agency Heads or prosecutors about cases when a rush request may be needed.

[8] ***Lead Time*** *is defined as the time from when the evidence is submitted to the SCL to when the report is published. This includes time the evidence sits in the Laboratory 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.*

e. Court Testimony and Judicial Efficiencies

In FY 2023-2024, laboratory scientists spent a total of 3,002 hours attending court. Of those hours, they spent 1,518 hours traveling to court, 935 hours waiting to testify, and 548 hours testifying. Assistance is still needed from our criminal justice stakeholders to minimize the time forensic scientists spend in court and away from the laboratory. Only 18% (548 hours of the 3,002 hours) of the time an analyst spent outside the laboratory for court purposes was spent testifying.

The SCL 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 laboratory. The SCL appreciates the updates to the General Statutes in the biennium budget making district court remote testimony more easily available to our scientists. Subject matter experts from the SCL are current members of the Remote Testimony Task Force committee and subcommittees appointed by Chief Justice Paul Newby and are representative of stakeholder groups from the court system.

The passage of N.C. G.S. 15A-1225.3 now allows a scientist to testify remotely if appropriate notice if provide to the defendant. The Laboratory has received 969 virtual subpoenas from a total of 41 counties. **In FY 23-24, we appeared virtually 69 times and testified 35 times across 15 different counties.** As of September 15, 2024, the laboratory has saved 348 hours of travel time to court which equates to 21,700 miles not driven.

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

With gratitude for the $15 million in general appropriations for the Survivor Act, the State Crime Laboratory completed the testing and reviews of all submitted inventoried sexual assault kits in early 2024. Testing these older kits has solved numerous crimes. As of the writing of this report, analysis has been completed on 11,854 kits. These completed tests have led to numerous arrests in longstanding cold cases – as approximately 50% of those tested kits with an eligible CODIS profile have a CODIS hit to a known offender or another case, allowing law enforcement to move forward.

Over $11.5M of the Survivor Act funding is encumbered as of the writing of this report. Working in partnership with the District Attorneys, the SCL intends to use the remaining $3.5M to outsource current sexual assault kits for more timely turn-around.

All information regarding the STIMS project has been reported in the legislatively mandated STIMS report required by NCGS § 114-65.

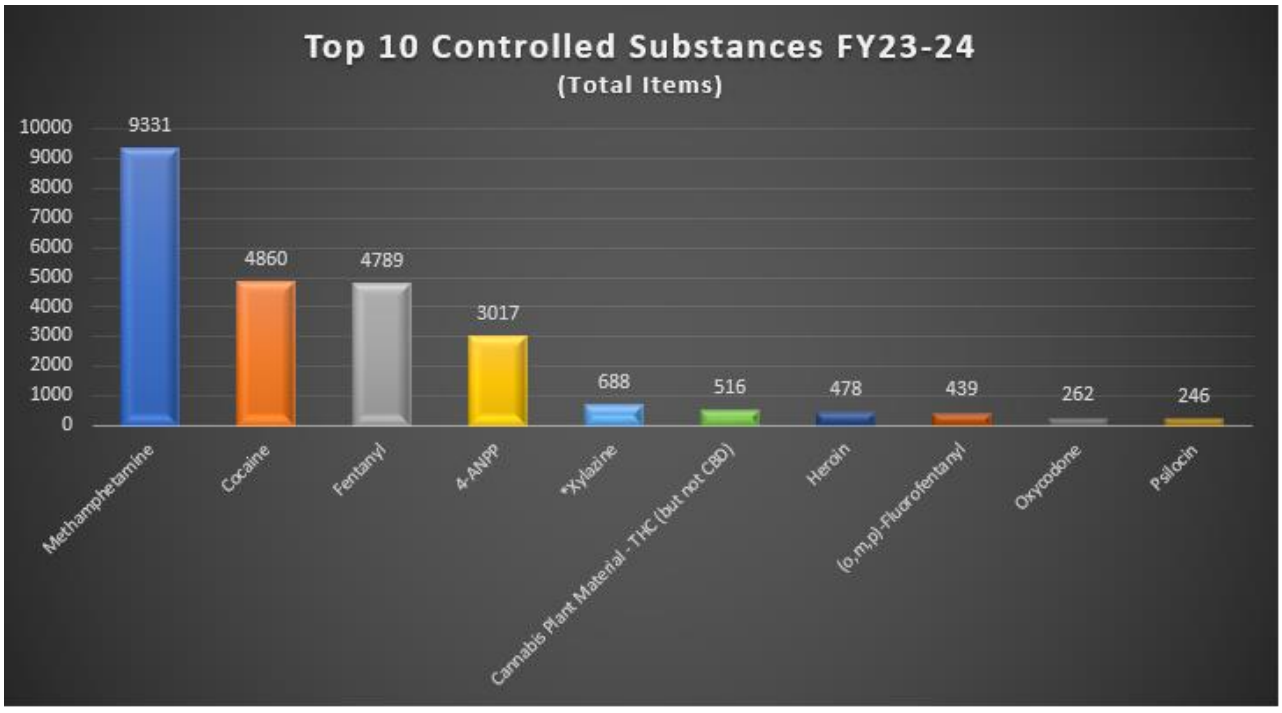
Here are some examples of the impact we have seen from testing these kits:

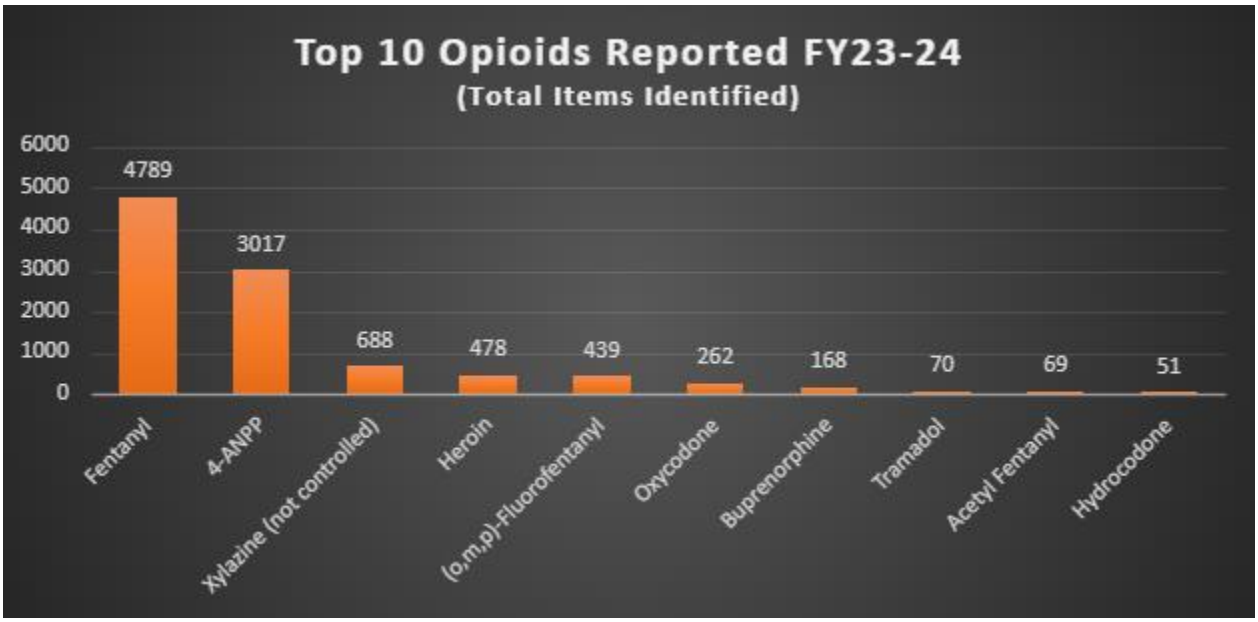
• The Raleigh Police Department arrested a man alleged to be responsible for a 1995 sexual assault cold cases and several other cases, charging him with 15 counts of sexual assault, 12 counts of rape, 10 counts of kidnapping, and other charges.
• A Raleigh man was arrested in March for the rape of a 73-year-old-woman he allegedly committed in 1990.
• A Fayetteville man pleaded guilty to a 1992 sexual assault and was sentenced to 40 years in jail. The Fayetteville Police Department resubmitted the sexual assault kit for testing in 2006, leading to the suspect's arrest in 2020.
• A New Hanover County jury convicted a Wilmington man on first degree kidnapping, two counts of first-degree rape, two counts of first-degree sexual offense, and robbery, carrying a prison sentence of 36 and 44 years.

g. Statistics and Trends in Drug Chemistry and Toxicology

The Crime Laboratory collects various data which are reported to the Federal Government for statistical purposes, trend monitoring, and policy making.

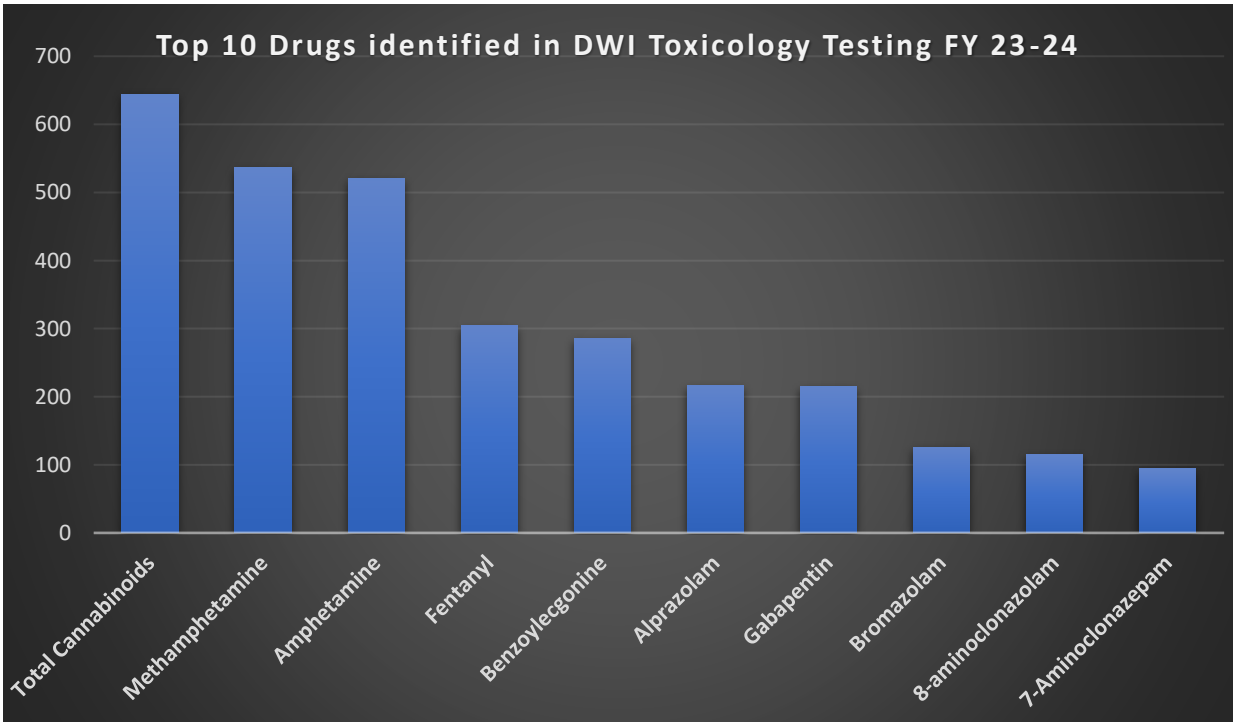
The Drug Chemistry Section continued to see an increase in the complexity of cases submitted. Analysis of these items involves counting and verifying the number of units present, and documenting and analyzing multiple units to meet statutory weight thresholds. Often there is more than one controlled substance present in these samples or varying concentrations of these substances, which requires repeat and/or additional analysis and takes longer for scientists to analyze. Additionally, there has been an increase in the number of clandestine pharmaceutical and non-pharmaceutical tablets. During FY23-24 the Drug Chemistry Section of the North Carolina State Crime Laboratory (NCSCL) received 20,951 case records for analysis between July 1, 2023, and June 30, 2024, and in that time completed 26,176 case records. Methamphetamine was the most reported controlled substance at approximately 36% of overall case record identifications followed by fentanyl, cocaine, 4-ANPP (a fentanyl precursor chemical), and heroin. In January 2023, the NCSCL began tracking cases containing the non-controlled substance xylazine for potential consideration of future scheduling in the NC Controlled Substances Act. In FY 23-24, a total of 688 case records contained xylazine. The top ten reported controlled substances can be found in the below chart, as well as the top 10 Opioids Identified in FY 23-24. **The SCL continues to see a rise in other opioid classes, such as nitazenes and xylazine.**



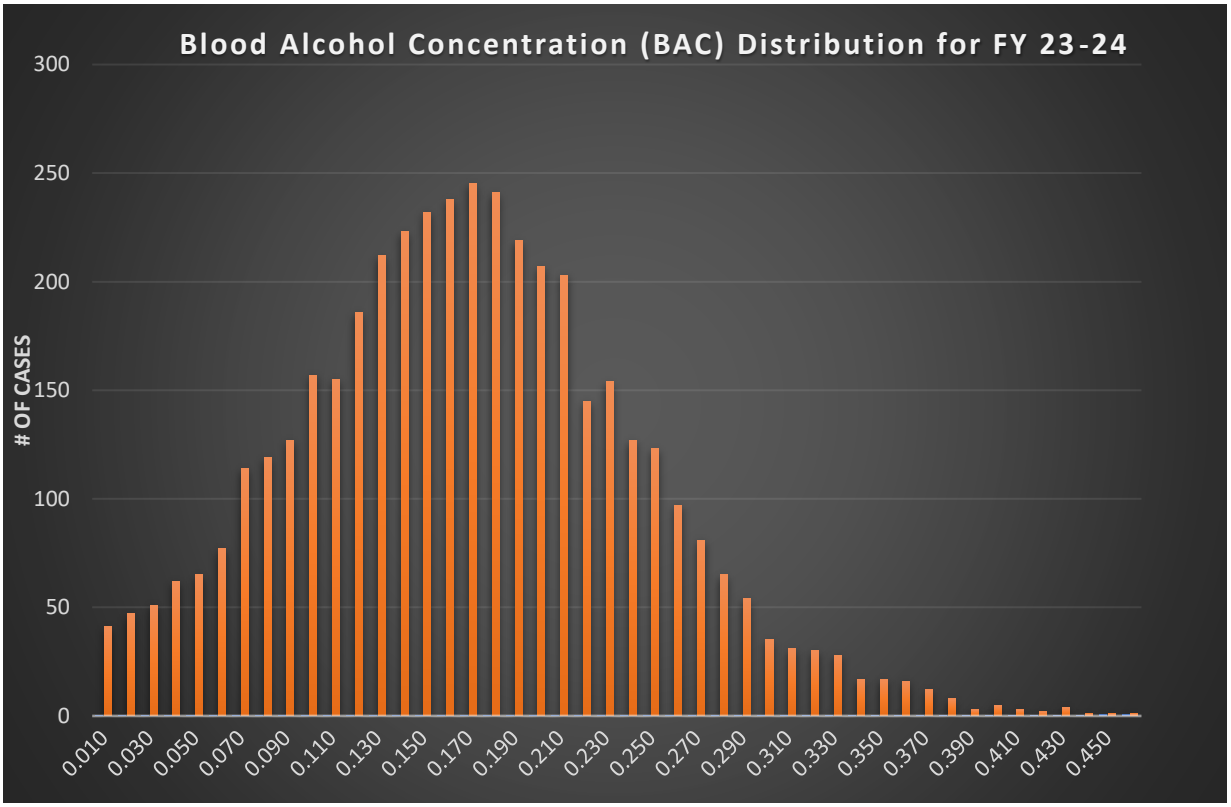


Xylazine is not a controlled substance at the time of this report.

In FY 2023-2024 the **Toxicology Section** of the SCL tested 3,645 DWI related blood samples for drugs. There was an average of 2.9 different drugs identified in the positive samples. (Up from 2.5 drugs per sample in the previous year). The most prevalent drugs identified continued to be cannabinoids (THC and metabolites; marijuana) followed by Methamphetamine and/or Amphetamine. However, the prevalence of the designer benzodiazepines metabolite 8-aminoclonazepam dropped 70%. It was replaced with the newer designer benzodiazepine, Bromazolam. During this fiscal year, the prevalence of fentanyl in DUID cases increased 54% compared to last year. Gabapentin prevalence increased approximately 27% compared to the previous fiscal year.



Below is the chart of distribution of Blood Alcohol Concentrations analyzed in fiscal year 2023-2024. The average BAC in DWI cases is 0.17. The average BAC has remained between 0.15-0.19 for the last several years. Of the 5,975 BACs completed last year, 4,281 were positive.



IV. Process Improvements

The SCL continues its concerted effort to identify cases that have been disposed of in court ("stop-work cases") and no longer need forensic analysis. The SCL routinely provides prosecutors with lists of cases that appear to have cleared the court system but for which the Laboratory has not received a disposition notice, requesting confirmation that the case is completed and that no further Laboratory work is required. The NC Conference of District Attorneys has facilitated prosecutorial review of these notices, and nearly **all forty-three District Attorneys are participating**. As a result, the SCL is able to focus on the cases where forensic analysis is still needed. Stopping work on 8,951 case records for FY 23-24 equals a savings of $3.3M in unnecessary testing.

V. Human Capital

In FY 2023-2024 there were 15 hires, 16 internal promotions, 19 resignations, 6 retirements, and 1 transfer. The SCL had a vacancy rate of 18.3% at the end of the fiscal year.

The process of filling vacancies and training a new scientist can take from one to two years, depending on the scientific discipline. During training, a forensic scientist cannot test items of evidence submitted in criminal cases and therefore cannot contribute to overall casework or case reduction during this time.

The SCL and DOJ continue to work to find ways to attract and retain highly qualified employees. The past two fiscal years have seen improvement in the ability to fill vacancies. However, more can be done to retain scientists, as salary and lack of opportunity for advancement are consistent reasons cited for scientists leaving employment with the SCL. We are respectfully requesting a recurring salary adjustment fund appropriated to address recruitment and retention

needs for the Forensic Scientist series, including salary increases and promotional opportunities. The chart below depicts the hiring and losses specifically of scientists, for the last five fiscal years:

Fiscal Year	Number of Scientists Hired	Number of Scientists Who Have Since Resigned	~Discipline Departed From	Human Capital/ Financial Loss	~Tenure of Scientists who Resigned
FY 19-20	8	5	Drug Chemistry (2), Forensic Biology (2), Latent (1)	$500,000	1.1 years, 3.4 years, 4.4 years, 5.3 years, 4.0 years
FY 20-21	18	6	Forensic Biology (3), Firearms (3)	$600,000	1.5 years, 1.4 years, 1.5 years, 2.8 years, 2.8 years, 2.8 years
FY 21-22	22	4	Forensic Biology (1), Firearms (1), Drug Chemistry (1), Digital Evidence (1)	$400,000	1.4 years, 1.8 years, 1.9 years, 3.0 years
FY 22-23	11	1	Firearms (1)	$0	6 months
FY 23-24	11	0			
Totals	**70**	**16**		**$1,500,000**	**Avg tenure: 2.5 years**

Note 1: Attrition rate of scientists hired in the last five fiscal years is 22.85% (16 resignations/70 hires).
With an average tenure of approximately 2.5 years, the $1.5M of the State's investment had very little return since the training period is between 1 to 2 years.

Note 2: Of importance, each time a scientist resigns, the Laboratory spends approximately $100,000 to train a new employee to fill the vacated position. There is no return on investment during this period as the scientist is not permitted to work criminal evidence until he or she completes a rigorous training program. (Each scientist must complete modules of training which include written and oral examinations, practical exercises, a competency test(s), and a mock trial before training is considered complete.). In FY 2023-2024 the NCSCL trained approximately 18 scientists. This equates to $1.8M of salary funds to pay employees who are not yet contributing to the pending caseload. This figure does not include the monetary loss of time set aside by other trained scientists to train the new hires. A recurring salary adjustment fund would help retain employees who have historically left for higher paying salaries and will give the laboratory a larger return on investment.

VI. Fiscal Resources[9]

At the beginning of calendar year 2014, the SCL 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.

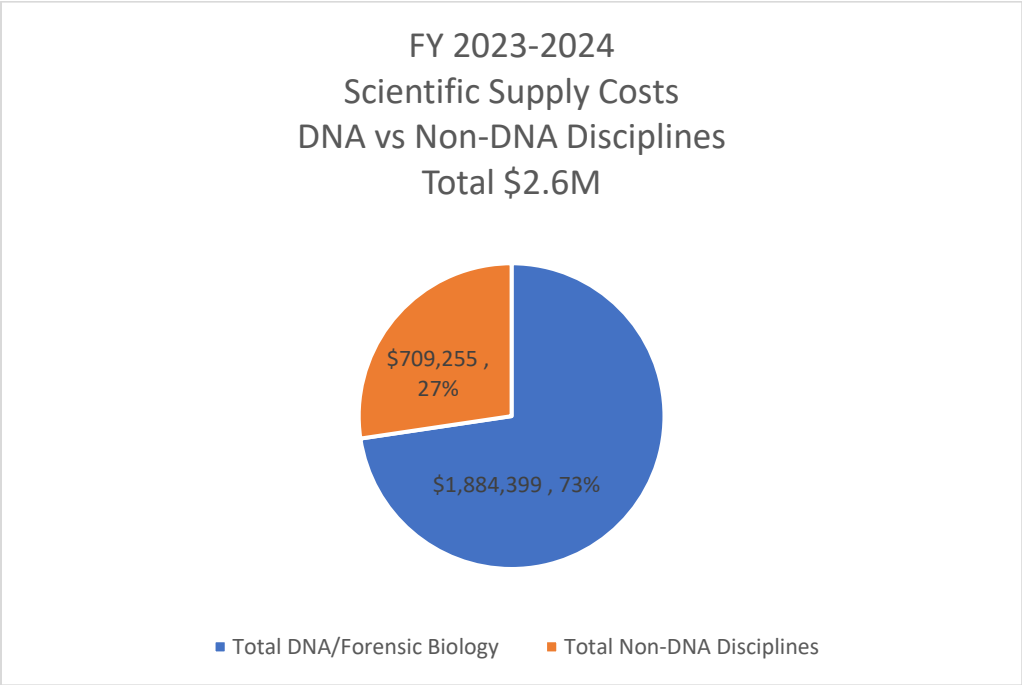
[9] S.L. 2013-360 (4) also provides that the Annual Crime Laboratory Report contain "[a]n average estimate of the dollar and time cost to perform each type of procedure and analysis performed by the Laboratory." The Crime Laboratory initiated participation in "Project Foresight," operating out of West Virginia University, which compiles such information for forensic laboratories. The data collection deadline for the Project Foresight Annual Report reflects the comparison or cost for fiscal year 2022-23. The next report for fiscal year 2023-24 will be published in May of 2025.

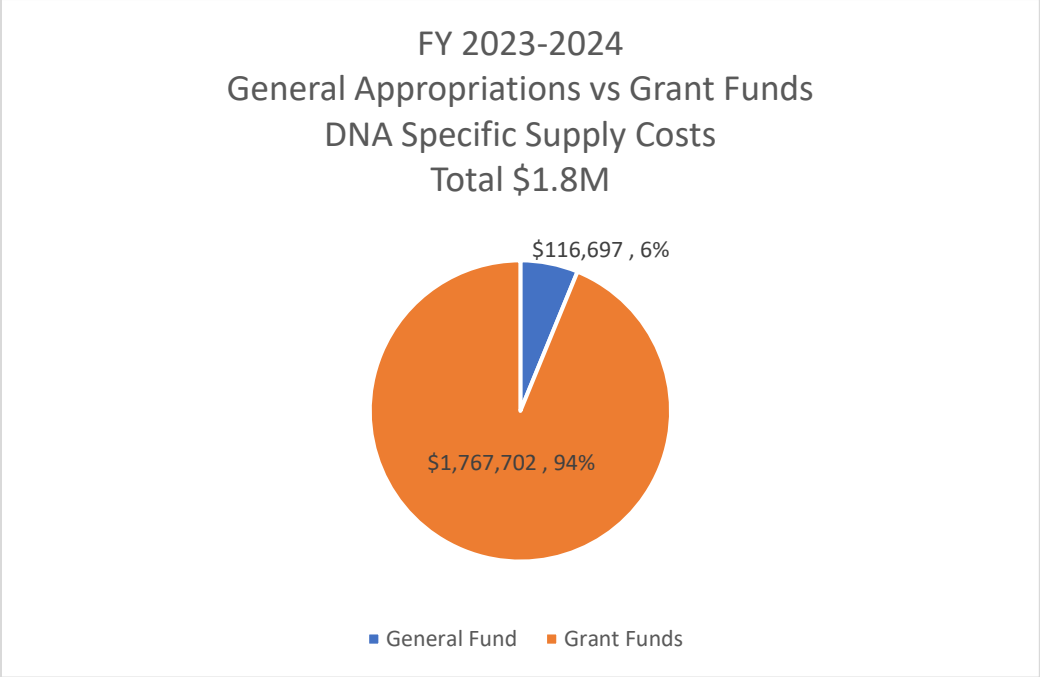
The FORESIGHT Project Report indicates that the SCL is comparable to other like-size, publicly funded state forensic laboratories servicing like-size state populations. Nine of the thirteen investigative areas noted were lower in cost per case compared to the FORESIGHT Median cost per case. Note that 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.

Cost per Case by Investigative Area

Area of Investigation	North Carolina	25th percentile	Median	75th percentile
Digital evidence	$4,134	$1,765	$3,373	$5,855
DNA Casework *	$1,376	$1,267	$1,634	$2,395
DNA Database	$201	$55	$104	$167
Drugs - Controlled Substances *	$212	$273	$401	$510
Fingerprints	$2,030	$801	$1,213	$1,738
Fire analysis *	$883	$1,537	$2,948	$4,539
Firearms and Ballistics *	$1,074	$1,449	$2,287	$3,429
Gun Shot Residue (GSR) *	$649	$1,917	$3,146	$4,498
Footwear and Tiretrack Impressions *	$1,146	$4,454	$6,810	$9,644
Serology/Biology *	$411	$853	$1,220	$1,900
Toxicology - Blood Alcohol Analysis *	$136	$136	$223	$338
Toxicology - Blood Drug Analysis	$907	$551	$715	$974
Trace Evidence *	$3,682	$4,338	$6,029	$8,675
below median cost				

As newly hired scientists completed their training and began work on active criminal cases and as submissions have increased for the last six years, the SCL's supply costs have also increased. During FY 2023-2024, the SCL expended $2.6M on scientific supplies of which 73% was DNA-related. Specifically, $1,884,399 was expended on DNA, while $709,255 was expended on non-DNA disciplines. Of the DNA expenditures, 6% or $116,697, was from general fund appropriations and the remaining 94% or $1,767,702, was from grant funding.


FY 2023-2024
Scientific Supply Costs
DNA vs Non-DNA Disciplines
Total $2.6M
$709,255 , 27%
$1,884,399 , 73%
Total DNA/Forensic Biology
Total Non-DNA Disciplines


FY 2023-2024
General Appropriations vs Grant Funds
DNA Specific Supply Costs
Total $1.8M
$116,697 , 6%
$1,767,702 , 94%
General Fund
Grant Funds

During FY 2023-2024, the SCL had active funding from various federal grants ranging from approximately $6.4M to $9.7M. Funding was utilized to replace scientific instruments, purchase supplies, and to pay for training for SCL staff to meet mandated certification and accreditation requirements**.**

The SCL system has approximately $15M in instrumentation throughout all three labs as reflected below:

Raleigh Lab Instrument Total	**$ 9,246,695.69**
Triad Lab Instrument Total	**$ 2,016,000.00**
Western Lab Instrument Total	**$ 3,583,893.14**

Instrument cost varies within the laboratory system from a $75,000 comparison microscope used in the comparison of Firearms evidence, to a $185,000 Genetic Analyzer used to separate and analyze DNA in homicides and sexual assault analysis in Forensic Biology, to a $355,000 Quadropole Time of Flight Instrument used in DWI analysis in Toxicology.

VII. Expansion

The SCL continues to expand its services, replace outdated equipment, and conduct significant analysis to determine the future needs within each of the disciplines during FY 23-24.

The Drug Chemistry and Toxicology disciplines continue to encounter complex opioids such as fentanyl and fentanyl-based analogs. These types of drugs require extensive and complicated testing that lengthen turnaround times. Even with these challenges, the SCL made significant headway in reducing the pending inventory by 50% for DWI and sized drug testing in each of these disciplines in the FY 23-24 and previous fiscal year. The SCL continues to monitor new and emerging compounds as well as new technologies for testing in these disciplines.

Firearms analysis is offered only in the Raleigh laboratory due to all firearms positions in the Western laboratory being vacated. Currently four of the twelve examiner positions are trained in the discipline and are working cases for the entire state. In FY 23-24, the SCL was successful in filling all vacant positions in the discipline. Training for these scientists is underway and it will be approximately 2 years before these trainees can contribute to casework. Expansion of this discipline back to our Western laboratory is being evaluated once all trainees are qualified and working cases. Additionally, the Firearms discipline purchased a 3D virtual microscopy unit for forensic firearm comparison. Once validated, this will provide gained efficiencies in the discipline.

The SCL finalized plans in FY 23-24 to work with the Government Data Analytics Center (GDAC) to create a one stop portal for our stakeholders to access and provide the SCL real time information on CODIS hits, DNA arrestee expungements, stop work cases, and blood sample destructions from disposed DWI cases. Providing one point of access to share information in a timelier manner is a high efficiency gain for both the SCL and its stakeholders.

Rapid DNA is a term used to describe the fully automated process of developing a DNA profile from a reference sample (mouth swab) in 1-2 hours without the need for a DNA laboratory or human intervention. Some law enforcement agencies in the state have already purchased these systems and others have interest in doing so. The SCL serves as the State level administrator for access to CODIS. The SCL has purchased a Rapid DNA system and is currently evaluating and validating the instrument. This will allow the SCL to produce policies, guidelines, and training procedures in accordance with emerging mandated federal standards for accredited DNA testing laboratories. In order for law enforcement agencies who have purchased Rapid systems to utilize the power of CODIS, it will be necessary

to for those agencies to become accredited under the SCL's accreditation. More information will be distributed in the near future to all stakeholders.

VIII. Conclusion

After a surveillance assessment by our accrediting body, the laboratory continues to maintain accreditation in FY 23-24. This marks the laboratory's thirty sixth year of accreditation. Forensic services provided by the State Crime Lab continue to meet the highest quality standards possible.

The SCL has worked continuously to improve using Lean Six Sigma efficiency methodology within all disciplines. These improvements include 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. Additionally, a number of counties in the State are participating in virtual testimony for Toxicology. By eliminating numerous hours of travel, this has tremendously increased the amount of time a Toxicologist can remain on the bench and perform casework.

Given the competitive job market, the SCL needs to remain competitive in salary offers. This will allow us to better retain and recruit scientists. We are respectfully requesting a recurring salary adjustment fund be appropriated to address recruitment and retention needs for the Forensic Scientist classification series. A recurring salary adjustment fund will allow us to offer more competitive salaries thus filling current vacancies faster and facilitate retention of forensic scientists so that we can continue to meet the State's public safety needs.

The SCL will continue to provide quality and timely forensic analysis and impartial expert testimony.

Respectfully submitted December 20, 2024,

Amanda W. Thompson

Digitally signed by Amanda W. Thompson
DN: cn=Amanda W. Thompson, o=North Carolina State Crime Laboratory, ou=Director, email=athompson@ncdoj.gov, c=US
Date: 2024.12.20 11:59:49 -05'00'

Amanda Thompson
Director, North Carolina State Crime Laboratory

Appendix A - Submissions by County

	7/1/2021 to 6/30/2022		7/1/2022 to 6/30/2023		7/1/2023 to 6/30/2024	
County	**Submissions**	**Items Submitted**	**Submissions**	**Items Submitted**	**Submissions**	**Items Submitted**
Alamance	507	719	479	710	562	874
Alexander	130	187	149	238	132	160
Alleghany	48	70	82	98	48	69
Anson	71	254	62	136	65	105
Ashe	192	268	138	160	175	226
Avery	106	134	82	113	95	133
Beaufort	350	470	360	453	396	617
Bertie	31	34	37	86	69	131
Bladen	45	66	59	93	37	79
Brunswick	861	1215	831	1131	686	934
Buncombe	1477	2408	1675	2542	1650	2731
Burke	411	533	420	518	501	662
Cabarrus	838	1270	900	1362	857	1166
Caldwell	485	638	411	545	373	477
Camden	33	57	52	86	48	82
Carteret	295	472	360	599	366	507
Caswell	43	80	63	92	78	108
Catawba	852	1279	734	935	970	1363
Chatham	155	261	119	220	180	313
Cherokee	315	488	276	411	262	416
Chowan	48	87	30	75	38	52
Clay	89	141	59	96	59	92
Cleveland	634	808	714	1553	805	1780
Columbus	303	508	273	428	282	552
Craven	668	974	667	1026	682	1146
Cumberland	998	1651	960	1594	860	1411

	7/1/2021 to 6/30/2022		7/1/2022 to 6/30/2023		7/1/2023 to 6/30/2024	
County	Submissions	Items Submitted	Submissions	Items Submitted	Submissions	Items Submitted
Currituck	92	120	78	93	163	199
Dare	269	407	256	351	272	347
Davidson	630	819	632	857	636	834
Davie	94	161	129	220	153	241
Duplin	407	580	347	461	301	415
Durham	757	1034	1215	1163	755	960
Edgecombe	372	545	362	652	409	740
Forsyth	516	791	883	999	595	755
Franklin	422	622	290	455	434	653
Gaston	1593	2698	1805	2834	1689	2598
Gates	15	18	11	15	17	25
Graham	98	176	59	87	60	82
Granville	252	400	155	234	149	249
Greene	45	64	52	90	73	104
Guilford	1723	2527	1389	1993	1303	1940
Halifax	287	490	288	429	212	382
Harnett	379	627	297	426	363	520
Haywood	528	804	665	1038	554	847
Henderson	781	1111	740	1030	735	1047
Hertford	91	211	132	605	87	193
Hoke	336	694	271	746	264	650
Hyde	11	18	1	1	17	26
Iredell	531	848	494	720	574	854

	7/1/2021 to 6/30/2022		7/1/2022 to 6/30/2023		7/1/2023 to 6/30/2024	
County	Submissions	Items Submitted	Submissions	Items Submitted	Submissions	Items Submitted
Jackson	298	455	340	484	342	522
Johnston	650	913	578	834	717	1028
Jones	39	58	44	75	66	113
Lee	206	443	333	528	268	468
Lenoir	373	681	520	1109	459	896
Lincoln	505	660	597	834	624	781
Macon	258	384	227	336	259	359
Madison	121	191	95	112	125	170
Martin	307	509	216	509	290	543
McDowell	295	460	282	450	324	488
Mecklenburg	415	541	454	632	382	514
Mitchell	98	138	56	67	47	58
Montgomery	89	152	132	250	124	254
Moore	594	910	568	895	527	809
Nash	578	717	445	555	512	602
New Hanover	933	1887	533	977	469	649
Northampton	55	134	48	84	68	118
Onslow	952	1486	772	1106	731	1163
Orange	367	523	401	641	298	498
Pamlico	90	130	126	172	159	186
Pasquotank	224	350	169	389	161	343
Pender	130	251	141	251	193	332
Perquimans	97	145	55	84	54	358
Person	184	307	225	592	235	461

	7/1/2021 to 6/30/2022		7/1/2022 to 6/30/2023		7/1/2023 to 6/30/2024	
County	**Submissions**	**Items Submitted**	**Submissions**	**Items Submitted**	**Submissions**	**Items Submitted**
Pitt	473	740	384	709	422	747
Polk	193	252	142	189	150	215
Randolph	903	1296	819	1137	742	979
Richmond	320	631	485	705	278	701
Robeson	439	969	506	931	339	684
Rockingham	540	747	500	680	495	684
Rowan	573	815	778	1702	751	1105
Rutherford	296	393	607	850	388	500
Sampson	493	801	427	967	416	750
Scotland	195	370	195	341	170	354
Stanly	390	538	400	488	293	421
Stokes	168	205	139	175	116	168
Surry	469	635	331	504	406	547
Swain	123	144	119	162	60	85
Transylvania	137	208	130	182	169	240
Tyrrell	31	49	29	38	14	19
Union	652	844	664	838	698	936
Vance	215	461	291	469	239	330
Wake	482	669	733	920	775	742
Warren	47	74	40	62	77	122
Washington	94	110	32	43	26	65
Watauga	226	330	270	349	199	235
Wayne	880	1644	884	1575	828	1585
Wilkes	287	408	331	448	317	485
Wilson	764	1305	685	1176	499	887
Yadkin	182	239	182	288	243	345
Yancey	107	165	88	144	50	71
TOTAL	**37751**	**58304**	**38091**	**58837**	**36685**	**56562**