

North Carolina Department of Justice

# ANNUAL REPORT

FISCAL YEAR 2014-2015

North Carolina State Crime Laboratory



Director John A. Byrd  
October 2015



## State of North Carolina

Department of Justice  
PO Box 629  
Raleigh, North Carolina  
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October 19, 2015

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ATTORNEY GENERAL

Senator 'Buck' Newton  
Senate Chair, Justice and Public Safety Committee  
Representative Jamie Boles  
Representative Pat Hurley  
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 14-15

Dear Members:

Pursuant to Session Law 2013-360, Section 17.2, the Department of Justice is pleased to submit the Fiscal Year 2014-2015 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.

Very truly yours,

A handwritten signature in black ink that reads "Kristi Jones".

Kristi Jones  
Chief of Staff

KJ/jab

Cc: Kristine Leggett  
Fiscal Research Division

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## Executive Summary

The North Carolina State Crime Laboratory remains committed to providing quality forensic analysis in a timely manner for the state's criminal justice system and made significant progress toward this goal in Fiscal Year 2014-2105

### **Working more cases more efficiently**

Thanks to improvements in methodology and efficiency, the State Crime Lab worked 54,986 submissions in FY 2014-2015, 5,000 more submissions than it received during the same time period. In FY 2014-2015, the State Crime Lab accepted more than 25,200 cases including nearly 51,000 items of evidence, as well as 24,668 submissions to the state's DNA Database of convicted offender and arrestee profiles.

A more efficient State Crime Lab is working more cases more quickly without sacrificing quality. Process improvements using Lean Six Sigma methodology have focused on reducing the number of pending cases and improving turnaround time. Pending cases have dropped by 42.3 % and turnaround time has been reduced on average by 150 days. The State Crime Lab continues to have a very effective rush program in which District Attorneys with law enforcement can request expedited analysis in cases through an automated web based system.

### **Continuing to meet high quality standards**

Surveillance visits were conducted by ANAB (American National Standards Institute-American Society for Quality National Accreditation Board) and ASCLD/LAB (American Society of Crime Lab Directors/Laboratory Accreditation Board) for the Crime Laboratory System and the FBI Crime Laboratory for our DNA Quality Assurance Standards (QAS) audit. In all three visits, the State Crime Laboratory was found to remain in compliance with established standards. The State Crime Lab continues to hold accreditation under strict ISO/IEC 17025 requirements and is the only state forensic laboratory in the country to hold accreditation from two international independent accrediting agencies.

### **Increasing time spent in the Lab instead of in court**

The recommendations contained in the *UNC School of Government's Report of the Crime Laboratory Working Group: Administrative Solutions to Alleviate Lab Backlog* have led to a concerted effort among criminal justice stakeholders to minimize the time spent in court by Crime Laboratory forensic scientists. Less time in court or traveling to and from court for our scientists means more time in the Crime Lab working cases. Nearly half of all Judicial Districts in North Carolina have agreed to adopt the recommendations from the School of Government report

House Bill 357 introduced in March 2015 would permit written toxicology analysis as evidence in some district court criminal cases, relieving State Crime Lab toxicologists of the need to testify in person provided there is a right to trial de novo. If it becomes law, this would provide relief from the extensive hours of testimony and travel now required in cases requiring blood alcohol and blood drug analysis, which account for the majority of submissions to the State Crime Lab.

### **Building and planning for the future**

Construction of the new Western Regional Crime Laboratory was completely funded with the 2014 Appropriations Act and authorized to start in mid-August<sup>1</sup>. The new facility will house more forensic scientists analyzing more types of evidence for criminal cases from Western North Carolina. A larger crime laboratory facility with more scientists means cases will be able to be worked more quickly, as scientists will spend less time on the road traveling to testify in court and more time in the laboratory working cases. This fall, the new Toxicology Unit created for the new Western Crime Lab will begin working cases at the existing Western Crime Lab facility, and new DNA scientists who will be stationed in the new lab will begin training in Raleigh.

The main State Crime Lab facility in Raleigh began a \$1.6 million renovation in the Forensic Biology and DNA Database sections to better accommodate more scientists, scientists in training, and robotics and automated equipment. Additional infrastructure changes were implemented in the Raleigh laboratory to improve efficiency and security.

The State Crime Lab director conducted a review and analysis of the Lab that led to administrative reorganization. A systematic plan for future growth was implemented with a solid leadership team structure that will allow the Lab Director to focus on strategic initiatives.

Attrition in the State Crime Laboratory is the single most significant hindrance to reducing caseloads and decreasing turnaround times. No fewer than six bills to allocate money for forensic scientists have been introduced in the last two years.<sup>2</sup> We expect salary increases to help retain highly-qualified scientists at the State Crime Lab.

Additional funding needs remain. The Lab lacks sufficient funding for updating scientific equipment, training and certifying scientists, and the State Crime Lab Ombudsman position is required by statute but has no authorized funding. The North Carolina Forensic Science Advisory Board has recommended that the General Assembly establish a special revenue reserve fund that would be appropriated annually to finance non-recurring expenses such as scientific equipment. The State Crime Lab has seen a decrease in payment of court fees that fund certain positions, and three forensic scientist positions, one in DNA Database and two in Forensic Biology are vacant due to insufficient receipts.

In short, caseloads and turnaround times at the State Crime Lab are improving but challenges remain in identifying adequate fiscal resources for the Lab.

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<sup>1</sup> *The NC State Construction Office issued a Certificate to Proceed on August 18, 2015 and the general contractor was on the ground the same day. A formal groundbreaking ceremony took place in Edneyville on September 8, 2015.*

<sup>2</sup> *The 2015 Appropriations Act, passed after the time period covered by this report, allocated more than \$1 million for forensic scientist market salary adjustments.*

## NORTH CAROLINA STATE CRIME LABORATORY REPORT

### FISCAL YEAR 2014-2015<sup>3</sup>

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 October 1<sup>st</sup> on the work of the North Carolina State Crime Laboratory (State Crime Lab) during the previous fiscal year.

#### I. Preface

John Byrd became State Crime Lab Director on June 2, 2014 and began his tenure by examining the Lab's organization to ensure all aspects of operation are focused on providing the criminal justice system with quality forensic analysis done in a timely manner. The Director's vision, mission, values and goals became the State Crime Lab's unified *organizational strategy*.

#### II. Organizational Strategy

##### **Strategic Vision:**

*"Our disciplines will be ISO/IEC 17025 accredited with all eligible Forensic Scientists certified in their discipline. I expect all employees to be responsive to the needs of our customers through quality and timely analysis; relevant through education and training to meet the ever changing requirements and/or needs of each discipline; and individually ready to do their job in a professional manner."*

##### **Values:**

*"The Laboratory is committed to integrity, honesty, thoroughness, openness, timeliness, and professionalism for the Criminal Justice System and the citizens of the State of North Carolina."*

##### **Mission:**

*"Conduct forensic analysis in a timely manner in order to produce the highest quality, technically proficient case work and unbiased expert witness testimony for the Criminal Justice community."*

##### **Goals:**

- 1. Provide quality and timely forensic services to North Carolina's Criminal Justice System;*
- 2. Maintain legislatively mandated ISO/IEC 17025 laboratory accreditation standards for all lab disciplines;*
- 3. Maintain legislatively mandated individual certification for all eligible forensic scientists in their disciplines;*
- 4. Provide training opportunities for all employees to maintain and/or exceed industry standards in forensic science and administrative services;*
- 5. Identify and acquire adequate fiscal resources for the laboratory;*
- 6. Collaborate with the Forensic Science Advisory Board, private sector businesses, and academia to build research advancements in forensic science;*
- 7. Add value to our community by continuing to offer tours of laboratory facilities and participating in groups like Special Olympics, Police Benevolence, middle school and high*

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<sup>3</sup>This Report addresses the statutorily mandated "previous fiscal year" (July 1, 2014 - June 30, 2015), and thus only briefly mentions, when required by context, important Crime Lab developments occurring on or after July 1, 2015, including, for example, legislative funding in the 2015 Appropriations Act (ratified September 18, 2015, and generally effective July 1, 2015), for Forensic Scientist Market Adjustment funds (\$1,023,635) and for six new Crime Lab Technicians, one Forensic Scientist I and three Information Processing Technicians for DNA Database expansion of DNA on Arrest for All Violent Felonies.

*school enrichment programs, NCSU Forensic Science Program, and other collegiate forensic science programs; and*

8. *Invest in our employees to create dedication and loyalty between our employees and the crime laboratory.*

Within the vision, values, mission, and goals, are major systems for which resources had to be identified, prioritized and allocated. These systems include: **quality (accreditation and certification), case submissions & completions, expansions & renovations, process improvements (Lean Six Sigma), human capital (salaries, and training) and fiscal resources.** This report addresses each major system and the effects on the State Crime Lab mission.

### III. **Quality (Accreditation and Certification)**

Forensic services provided by the State Crime Laboratory continue to meet the highest quality standards available. The State Crime Lab maintains accreditation under strict ISO/IEC 17025 requirements and is the only state forensic laboratory in the country to hold accreditation from two international independent accrediting agencies. During 2014 and 2015, surveillance visits were conducted by ANAB and ASCLD/LAB for the Crime Laboratory System and the FBI Crime Laboratory for our DNA Quality Assurance Standards (QAS) audit. In all three visits, the State Crime Laboratory was found to be in compliance with established standards.

All eligible scientists at the State Crime Lab are independently certified. Certifying bodies for State Crime Laboratory forensic scientists include:

- International Association for Identification (IAI) –Latent, Audio, Video
- American Board of Criminalistics (ABC) – Drug Chemistry, Forensic Biology, DNA Database, Trace
- Association of Firearm and Tool Mark Examiners (AFTE) - Firearm and Tool Mark
- American Board of Forensic Toxicologists (ABFT) - Toxicology
- EnCase Certified Examiner (EnCE) – Digital Evidence
- International Association for Property and Evidence - Evidence Control<sup>4</sup>

### IV. **Case Submissions and Completions**<sup>5</sup>

#### 1. **Case Submissions**

In North Carolina, the nation's ninth most populous state, more than 20,000 law enforcement officers and over 600 law enforcement agencies routinely submit evidence in criminal cases to the Crime Lab. In FY 2014-2015, more than 25,200 cases including nearly 51,000 items of evidence were accepted at the Crime Lab's three locations. (See Figure 1) Including DNA Database submissions, the State Crime Lab system received 49,868 submissions in FY 2014-15, broken down as follows:

- The **main State Crime Laboratory in Raleigh** received 16,007 case work submissions and 24,668 DNA Database submissions (comprised of 14,988 Convicted Offender and 9,680 DNA on Arrest sample submissions), for a total of 40,675 submissions. (See Figure 2)

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<sup>4</sup> *This discipline, by general statute, is not required to be certified; however, Evidence Technicians have voluntarily undergone the training program, passed the required test and become independently certified.*

<sup>5</sup> *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."*

- The **Triad Regional Crime Laboratory** received 4,421 cases.
- The **Western Regional Crime Laboratory** received 4,772 cases.

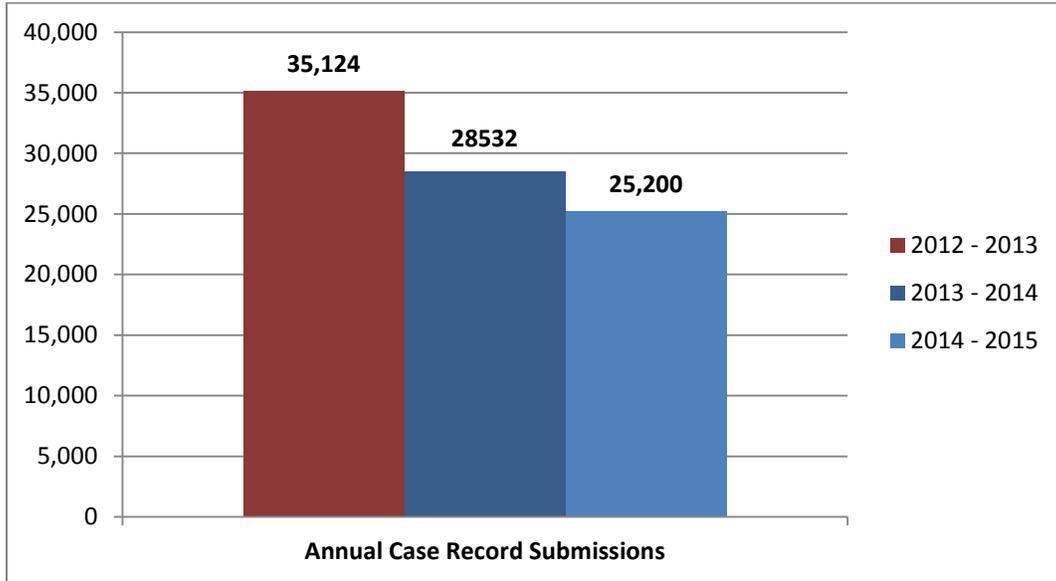


Figure 1 Annual Case Submissions

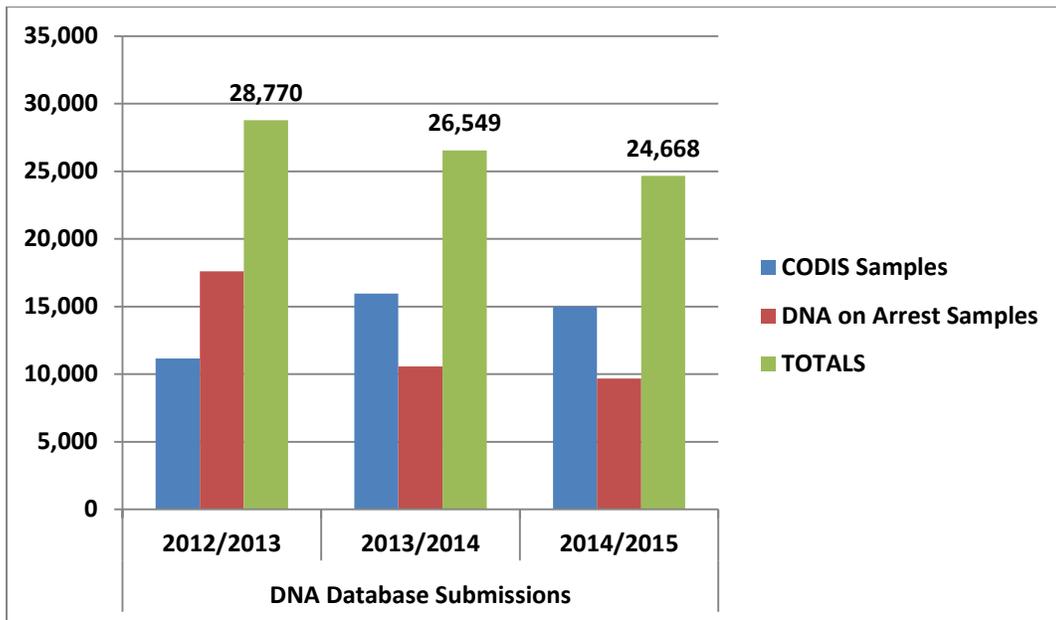


Figure 2 Annual DNA Database Submissions<sup>6</sup>

**a. Case Submissions by Forensic Discipline and Lab Location**

<sup>6</sup> DNA Database submissions do not include crime scene evidence submitted for DNA analysis to the Forensic Biology Section. DNA Database submissions do include some submissions for offenses not included in the database under state law.

In FY 2014-2015, 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>
Drug Chemistry & Toxicology	12,414	4,054	4,517 (incl. 2 Toxicology*) <sup>7</sup>
Forensic Biology	1,297	172*	42*
DNA Database	24,668	0	0
Latent & Digital	754	69	68 (incl. 2 Digital*)
Trace Evidence	594	102*	56
Firearm & Tool Mark	948	24*	89

**b. Case Submissions by County<sup>8</sup>**

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

**2. Case Completions**

Because of the time required to complete the hiring and training of the 19 new Crime Lab toxicologists funded in the Appropriation Act of 2013, the case submissions reflected above were addressed only by the 124 case working scientist positions available from FY 2012-13 following budget cuts in FY 2011-12 that eliminated five Crime Lab positions. Attrition with scientists leaving the State Crime Lab often for better pay elsewhere means that at times not all 124 positions were available to work cases.

Nonetheless, scientists in the State Crime Lab system worked 54,986 submissions total in FY 2014-15, broken down as follows:

- The **main State Crime Lab in Raleigh** worked 28,597 case submissions and 12,920 profiles processed for the DNA Database (including 7,016 DNA samples from convicted offenders and 5,904 DNA samples taken upon arrest).
- The **Triad Regional Crime Lab** worked 7,423 cases.
- The **Western Regional Crime Lab** worked 6,046 cases.

Improvements in efficiency and methodology mean that State Crime Lab scientists were able to complete work last year on evidence in 42,066 criminal cases submitted by law enforcement, an

<sup>7</sup>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.

<sup>7</sup>The Western Regional Laboratory provides Drug Chemistry analysis as well as Latent Evidence and Firearm & Tool Mark examinations. Introduction of Toxicology analysis at the present Western Regional Laboratory is anticipated in September 2015. In Trace Evidence, only fire debris in arson cases is examined at the Western Lab. The Western Lab currently does not conduct Forensic Biology analyses, 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.

<sup>8</sup>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.

increase of more than 8,800 criminal cases worked compared to the previous fiscal year. (See Figure 3) Case work completions exceeded case work submissions at each of the Crime Lab's three locations, and the number of cases worked by the State Crime Lab during FY 2014-2015 outnumbered the number of cases submitted during the year. The DNA Database Section also completed work on all convicted offender and arrestee samples submitted for inclusion in the State's DNA Database. (See Figure 4) Crime Lab staff earned \$266,332.55 in overtime accomplishing these results.

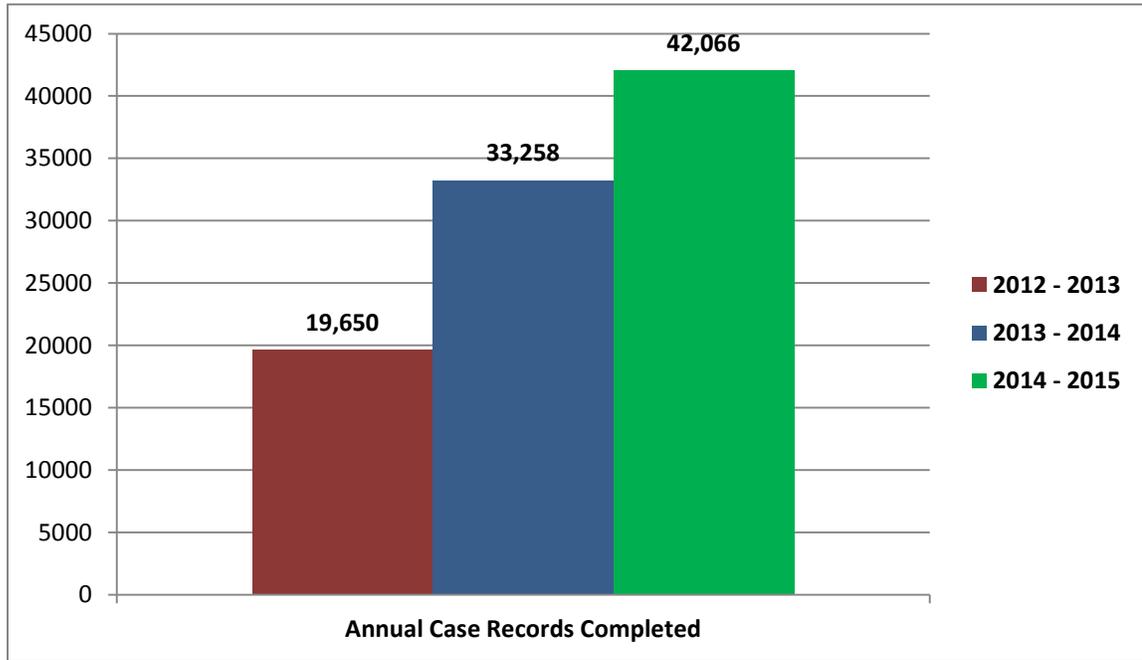


Figure 3 Annual Case Record Completions

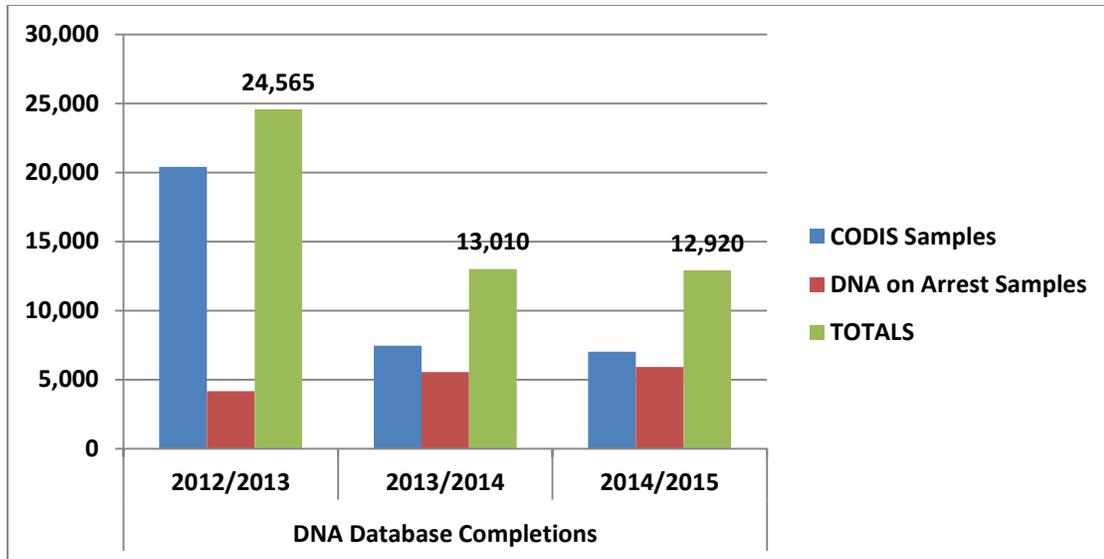


Figure 4 Annual DNA Database Completions<sup>9</sup>

**a. Case Completions by Forensic Discipline and Lab Location**

In FY 2014-2015, the State Crime Lab completed the following cases, broken down by discipline and lab location:

	<u>Raleigh</u>	<u>Triad</u>	<u>Western</u>
Drug Chemistry & Toxicology	20,796	7,217	5,684
Forensic Biology	4,283	14	2
DNA Database	12,920	0	0
Latent & Digital	1,470	187	116
Trace Evidence	857	3	40
Firearm & Tool Mark	1,244	2	204

**b. Total Cases Pending**

Overall, the Lab has made tremendous progress in reducing the pending caseload. Since June of 2014, the caseload has been reduced by 28.8 % and since January 2014 the caseload is down by 34.9 %. (See Figure 5) At the writing of this report, the total case load had been reduced by 42.3 %. The overall pending caseload will continue to drop as additional scientists complete their training and begin working on active cases.

<sup>9</sup> DNA Database submissions for offenses not included in the Database under state law, as well as samples submitted in duplicate, are not analyzed and thus are not included in these totals.

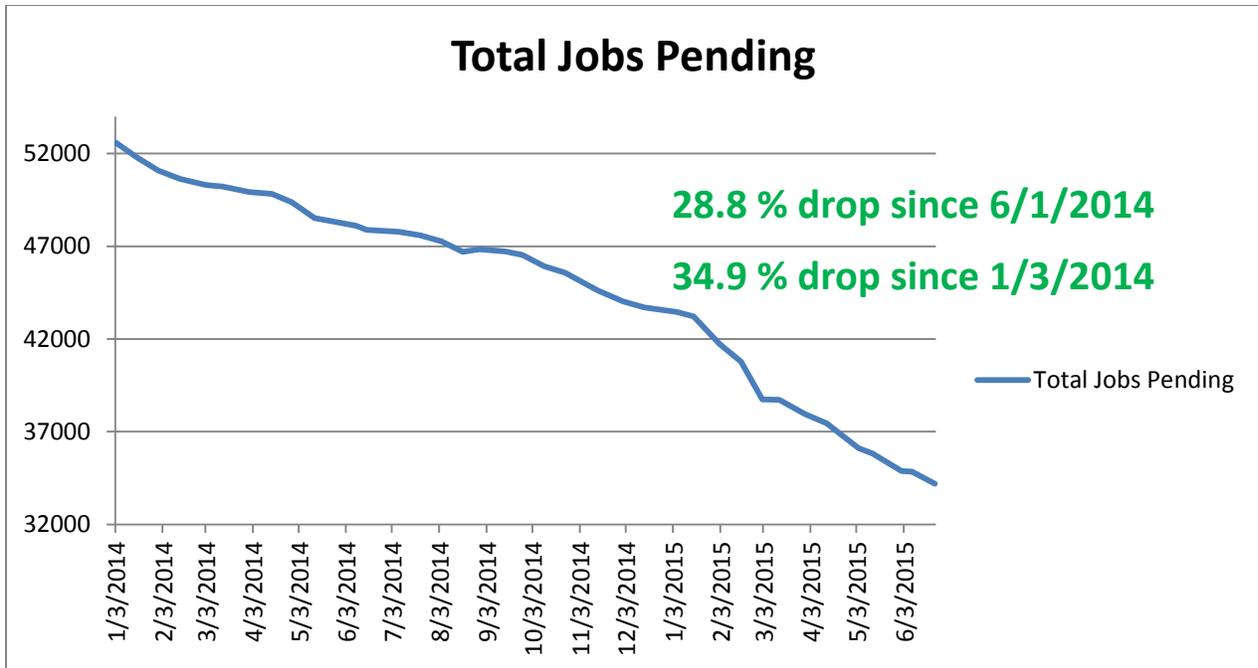


Figure 5 Total Jobs Pending

**c. Turnaround Time**

Turnaround time is improving and is directly attributable to additional scientists coming out of training and beginning case work. During this fiscal year, the overall turnaround time across the crime laboratory has dropped by 150 days. Turnaround times are expected to continue to improve as additional scientists complete training and begin working on active cases.

In addition to the drop in pending cases and turnaround time, the State Crime Lab continues to have an effective rush program in which District Attorneys can make a request to expedite analysis by submitting a Rush Request Form to the Lab. A rush request may be made easily through the FA Web portal of our Forensic Advantage laboratory information system. An FA Web based Rush Request Form can be found in Appendix B. For example, during FY 2014/2015, a toxicology case (blood alcohol/blood drug combination) and a separate DNA case, both considered rush eligible due to public safety concerns, came into the State Crime Lab. The appropriate District Attorneys communicated with the respective section managers and submitted rush requests. The section managers approved the rushes and allocated the appropriate resources. The toxicology case was completed in three weeks and the DNA case was completed in nine days.

**d. Court Testimony and Judicial Efficiencies**

During FY 2014-2015, the State Crime Lab continued to feel the effects of a U.S. Supreme Court ruling that requires forensic scientists to provide live, in-court testimony rather than testifying by sworn affidavit. As a result of the June 2009 ruling in *Melendez-Diaz v. Massachusetts*, Crime Lab scientists began traveling thousands of miles across North Carolina to testify in criminal cases, including both District and Superior Court DWI trials in all 100 counties.<sup>7</sup> More time spent in court or traveling to court means less time in the lab working on cases.

House Bill 357 introduced in March 2015 would permit written toxicology analysis to be introduced as evidence instead of in-person analyst testimony in a criminal case prosecuted in district court,

provided there is a right to trial de novo. If enacted and upheld by the courts, this legislation would provide relief from the extensive hours of testimony and travel now required in certain toxicology cases.

In FY 2014-2015, Crime Lab scientists spent 2,357 hours in court either testifying or waiting to testify, a decrease of 478 hours from FY 2013/2014. Though anecdotal, there appears to be an overall awareness of the seventeen recommendations from the *UNC School of Government's Report of the Crime Laboratory Working Group: Administrative Solutions to Alleviate Lab Backlog* and a concerted effort from the criminal justice stakeholders to minimize time forensic scientists spend in court and away from the lab. In Forensic Biology, for example, scientists are spending more of their time in court testifying as opposed to waiting to testify. Testimony time is down overall, but it has increased as a percentage of total court time, from 19 % to 23 %.

Twenty-four of the fifty judicial districts within North Carolina have voluntarily adopted the seventeen recommendations made in the School of Government report through a signed Memorandum of Agreement (MOA) between the senior resident Superior Court Judge, Chief District Court Judge and the District Attorney. Thirteen Judicial Districts are considering implementing the MOA and thirteen Judicial Districts have chosen not to pursue the MOA.

#### **e. Outsourcing**

A Request for Proposal (RFP) issued by DOJ in early 2014 resulted in one successful bidder, National Medical Services d/b/a NMS Labs, a Pennsylvania corporation. The NMS bid includes a fee of \$374 to analyze each blood drug case and a fee of \$2,225 per case per day for court testimony, including travel. However, the Appropriations Act of 2014 reduced funding for the State Crime Lab to outsource certain toxicology cases from \$750,000 to \$250,000<sup>10</sup>. The Conference of District Attorneys has been allocated funds to assist with outsourcing and the State Crime Lab is working to partner with additional District Attorneys on this project.

At the end of the fiscal year, the State Crime Laboratory had outsourced 699 toxicology cases at a cost of \$261,426. At the writing of this report, NMS had received another 160 cases from the State Crime Lab and two additional batches were being prepared to ship to the vendor.

#### **V. Expansion and Renovation**

Construction began on the new Western Regional Laboratory in August<sup>11</sup>. The new facility will be approximately twice the size of the current lab and will enable quicker evidence analysis for law enforcement agencies in western North Carolina. It is expected to open in 2017 and will add DNA, toxicology and firearms to the types of forensic services available in Western North Carolina. A larger crime laboratory facility in the region with more scientists means cases will be able to be worked more quickly, as scientists will spend less time on the road traveling to testify in court and more time in the laboratory working cases.

Funding for the project was provided in the 2014 Appropriations Act. Working with the State Construction Office, the State Crime Lab established a project schedule and held a public information

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<sup>10</sup> The Appropriations Act of 2015 provided an additional \$750,000 in non-recurring funding for toxicology funding which will be added to the recurring \$250,000.

<sup>11</sup> The NC State Construction Office issued a Certificate to Proceed on August 18, 2015 and the general contractor was on the ground the same day. A formal groundbreaking ceremony took place in Edneyville on Sept. 8, 2015.

meeting on April 8, 2015 followed by mandatory pre-bid meeting on April 9. The project was awarded with construction authorized to start in mid-August.

During FY2014-15, the State Crime Laboratory facility in Raleigh began a \$1.6 million renovation in the Forensic Biology and DNA Database sections to improve efficiency, make room for additional analysts, accommodate robotics and automated instrumentation, and add needed office space. The renovations began in January 2015 and were completed in July 2015. Casework production has increased by setting strict schedules for using robotics, automated instrumentation and limited lab space. The new office and lab space will more than accommodate the current number of working scientists along with 10 new DNA scientists being trained in Raleigh for the new Western Regional Lab.

In addition, the front lobby was revamped to improve security for the State Crime Lab. The Lab also migrated to a 21<sup>st</sup> century telecommunications system with modern business features, replacing an outdated and problematic analog system. The Lab is in the process of replacing HVAC controller systems with funding from the Department of Administration to reduce costs and improve efficiency.

#### **VI. Process Improvements (Lean Six Sigma)**

Reducing the number of pending cases and decreasing turnaround time continue to be the primary focus of all resources and personnel within the State Crime Laboratory. To that specific task a number of efforts were undertaken in FY 2014-15 with significant results.

The Crime Laboratory continues to push forward with Lean Six Sigma methodologies to improve efficiency without sacrificing quality. A Green Belt class was conducted by the original vendor to further embed the skills and knowledge in our core team. All eight participants completed the Green Belt training which now gives the State Crime Laboratory the ability to design and run Lean Six Sigma projects.

The State Crime Lab continues its concerted effort to identify cases that have been disposed of in court and no longer need forensic analysis, called stop-work cases. The State Crime Lab sends lists of cases which appear to have cleared the court system but for which the Lab has received no disposition notice from prosecutors, 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. As a result, the Lab is able to focus on the cases where forensic analysis is still needed.

The State Crime Lab streamlined processes for handling requests for touch DNA analysis, improving turnaround times for DNA, latent evidence, and firearm and tool mark analysis. Law enforcement typically requests touch DNA analysis for property crime cases which are given lower priority than homicide and sexual assault cases. Most touch DNA cases also require analysis by the Latent Evidence and Firearm and Tool Mark sections of the Lab in addition to Forensic Biology (DNA). The managers of these sections developed a simple solution to analyze these cases more efficiently: train analysts from Latent Evidence to collect, preserve, record and transfer the DNA evidence to Forensic Biology for analysis. Once the DNA evidence has been collected, a Forensic Biology scientist can work the case in a batch analysis with other cases, speeding up the process. Latent Evidence can proceed with its analysis and then pass the case onto Firearm and Tool Mark for analysis. Working touch DNA cases more efficiently has helped improve turnaround times for all forensic disciplines involved.

#### **VII. Human Capital (Salaries and training)**

Attrition of forensic scientists at the State Crime Laboratory is a significant problem that interferes with the Lab's mission to work cases efficiently. Each time a forensic scientist leaves, a new one must be hired and trained before he or she can begin working on active criminal cases.

Between January 2010 and June 2015, eighty scientists separated from the crime laboratory. More than half (41 total) indicated that they left for better employment which generally means higher pay. It costs approximately \$114,625 for the State Crime Lab to train each forensic scientist for a total loss of nearly \$4.7 million in money spent to train the 41 scientists who left for better jobs elsewhere. State Crime Lab and NCDOJ leadership have repeatedly requested higher salaries to retain qualified forensic scientists. Six bills to allocate money for forensic scientist salaries have been introduced at the NC General Assembly. A 10% salary increase, which will bring our Forensic Scientist up to the regional market salary average, would cost approximately \$1,000,000.<sup>12</sup> The 2015 Appropriations Act allocated \$1,023,635 for forensic scientist market salary adjustments.

Scientists at the State Crime Lab are required to achieve higher standards than those of scientists and other labs in the state and across the country, including individual certification in their disciplines and ongoing training in their fields. The State Crime Lab currently does not receive appropriations for training, certification, recertification or accreditation. Required training to maintain certification and accreditation standards is currently funded from receipts or lapse salaries funds.

The Joint Select Study Committee on the Preservation of Biological Evidence recommended in its January, 2011 report that the General Assembly appropriate \$693,710 for training of personnel in the State Crime Lab and \$236,871 for external certification and accreditation. None of the recommended appropriations was allocated.

The 2011 Forensic Science Act which became Session Law 2011-19 also created an Ombudsman position at the State Crime Lab but no funding was authorized and the position is currently paid for from existing State Crime Lab funds. The Joint Select Study Committee recommended that the General Assembly appropriate \$110,000 in salary and benefits for the Ombudsman position.

#### **VIII. Fiscal Resources<sup>13</sup>**

The State Crime Lab continues to face challenges in obtaining necessary fiscal resources. As discussed above, unfunded requirements have placed a strain on the Lab's budget. The State Crime Lab participated in Project Foresight to begin building a detailed picture of the fiscal resources required to operate a forensic laboratory and to determine the cost of each test and analysis. Though the data is incomplete for FY 2014/2015, it shows a need for greater resources for the State Crime Lab.

During FY 2014-2015 period, the State Crime Lab had 115 full time equivalent positions, or FTEs, including 105 forensic scientists conducting case work and 10 support staff to include administrative and technician positions. In FY 2014-15, the Lab spent more than \$1.1 million on supplies, service for

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<sup>12</sup> Based on the 2013 NC DOJ Independent Salary Survey of Forensic Scientists, NCSCL scientists were 16 % "below the average minimum, maximum and survey total averages." The 2013 Salary Adjustment Fund allocated on average 6 % to NCSCL forensic scientists leaving them 10 % below the market salary average.

<sup>13</sup> S.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 has not had the capability in the past to calculate this data. However, late in the 2013/2014 fiscal year, the 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. Because the Crime Lab's data for the May, 2015, Report, will not represent a full year and will thus be incomplete, the first meaningful (containing data for a full year) Foresight Project Report reflecting a comparative breakdown of analysis costs (including the State Crime Lab) will not be issued until May, 2016. Therefore, category 2013-360 (4) will be addressed more thoroughly in the FY 2016-17 State Crime Laboratory Annual Report.

scientific instruments, repairs and maintenance, telecommunications. The FY 2014-2015 budget allocated approximately two percent of the annual funding needed by the State Crime Lab to replace critical equipment. The difference was made up using declining receipt funding and lapsed salaries. As additional scientists hired for new positions complete their training and begin work on active criminal cases, the State Crime Lab's costs for supplies and equipment will increase.

The State Crime Lab is utilizing available grants to update some equipment. During the last twelve months, the State Crime Lab secured two federal grants for FY 2015-16 through the Governor's Crime Commission: \$49,980 for outsourcing DNA training for new analysts; and approximately \$120,000 for a Toxicology instrument. New genetic analyzers were acquired using federal grant money. In addition, by renewing our partnership with the SBI Computer Crimes Section and as members of the Internet Crimes Against Children (ICAC) Task Force, an ICAC grant of approximately \$19,000 was awarded to replace two aging digital forensic computers. Coverdell grant money was also allocated to purchase several instruments and forensic tools to upgrade and/or replace aging systems throughout the State Crime Laboratory.

The North Carolina Forensic Science Advisory Board, composed of 16 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 that would be appropriated annually to finance non-recurring expenses such as updating scientific equipment. This would provide contingency funding that offsets periodic reductions to crime lab court fees authorized pursuant to NCGS 7A-304(a)(7). The FY 2014-2015 budget allocated equipment funding that equates to two percent of the annual replacement funding needed for critical equipment. Most of this equipment has a useful life of five years.

The State Crime Lab also faces a significant decline in dedicated receipts generated from court fees that involve forensic science services provided by the North Carolina State Crime Lab.<sup>14</sup> For FY2014-2015, fees paid to the State Crime Lab decreased by 42 percent to \$816,021 as compared to FY2011-2012. The rapid decline in receipts has resulted in significant cash flow and funding challenges. (See Figure 6) The recurring budget for these dedicated State Crime Laboratory receipts is \$1.4 million a year. Approximately 40% of the receipts (\$565,300) funds eight forensic scientist positions. The remaining balance of \$835,000 supports non-salary operating costs such as scientific supplies, utilities, and telecommunications. (See Figure 7) Three forensic scientist positions, one in DNA Database and two in Forensic Biology, are vacant due to insufficient receipts to support these positions.

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<sup>14</sup> See *Performance Audit of NC State Crime Laboratory \$600 Fee Collections & Associated Operation*; NC DOJ Office of Internal Audit, July 21, 2015.

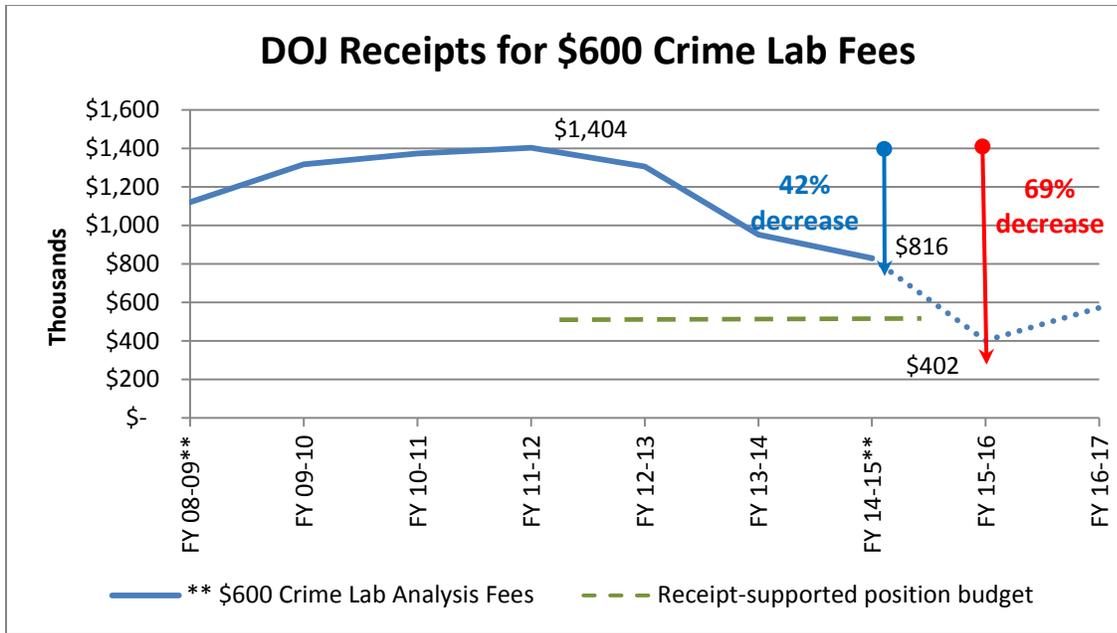


Figure 6 DOJ Receipts for \$600 Crime Lab Fees

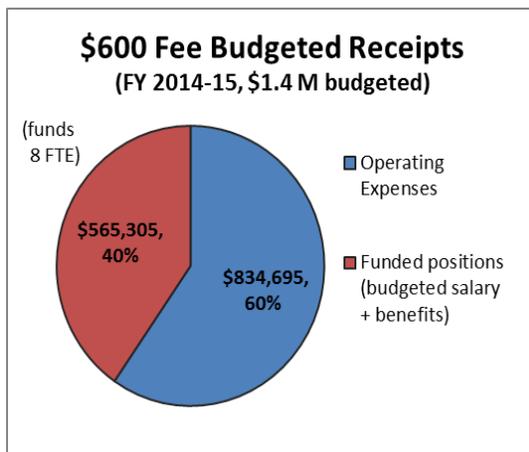


Figure 7 \$600 Fee Budgeted Receipts

The current statute authorizes fee assessments on forensic DNA analysis, bodily fluid tests for the presence of alcohol or controlled substances, and the analysis of controlled substances. The General Assembly should consider approving fees for additional forensic science disciplines, including firearms, tool marks, latent evidence, trace evidence and digital evidence. Broadening the base of eligible cases subject to fee assessments would increase annual fee collections and reduce projected deficits.

## IX. Conclusion

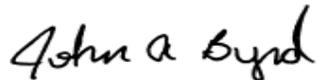
In FY 2014-2015 the Crime Lab made tremendous progress in analyzing more cases more quickly without sacrificing quality. The Crime Lab reduced its pending caseload by 42.3% and reduced turnaround times by adding more scientists and taking numerous other steps to improve efficiency. The Crime Lab will continue to seek increased efficiencies through the use of Lean Six Sigma

methodology, streamlined evidence management processes, advanced instrumentation, strategic redistribution of casework, and improved coordination with the courts and our partners in the criminal justice system.

Increasing salaries should help retain well-qualified and highly trained Crime Lab scientists, reducing workforce voids and their impact on Lab productivity. The construction of a larger Western Regional Laboratory will speed analysis of cases by providing more types of forensic analysis in the region, and it will help the entire state by relieving the main State Crime Lab in Raleigh of some of its workload. The promising infusion of additional State Crime Lab employees<sup>15</sup> will provide necessary technical and administrative support to allow forensic scientists to focus on the analytical portion of case work.

However, the Crime Lab continues to face challenges, particularly the requirement that lab scientists provide in-person court testimony and the need for more resources for lab equipment, training and certification needs.

Respectfully submitted, this 1<sup>st</sup> day of October, 2015,

A handwritten signature in black ink that reads "John A. Byrd". The signature is written in a cursive, slightly slanted style.

John A. Byrd  
Director, North Carolina State Crime Laboratory

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<sup>15</sup> *The 2015 Appropriations Act includes funding for the State Crime Lab to hire six chemistry technicians, three information processing technicians and one DNA Database forensic scientist.*

**Appendix A - Submissions by County**

<b>County</b>	<b>7/1/2011 to 6/30/2012</b>		<b>7/1/2012 to 6/30/2013</b>		<b>7/1/2013 to 6/30/2014</b>		<b>7/1/2014 to 6/30/2015</b>	
	<b>Submissions</b>	<b>Items Submitted</b>						
Alamance	497	964	520	893	420	689	267	445
Alexander	188	273	135	282	66	108	46	93
Alleghany	31	58	32	50	21	22	34	42
Anson	93	264	102	280	89	326	63	153
Ashe	59	128	77	132	61	115	29	69
Avery	74	112	84	143	83	136	76	113
Beaufort	519	735	514	656	432	616	371	507
Bertie	96	165	73	105	61	86	33	51
Bladen	216	364	145	249	67	118	110	149
Brunswick	514	822	494	634	521	660	437	614
Buncombe	1133	1845	1213	2061	985	1745	897	1416
Burke	407	705	370	547	327	547	258	459
Cabarrus	1002	1680	901	1460	615	1113	571	789
Caldwell	268	537	366	743	376	638	325	529
Camden	23	31	18	26	26	53	21	29
Carteret	419	593	409	549	397	544	320	464
Caswell	88	204	52	125	127	146	47	62
Catawba	709	1411	663	1315	573	1066	652	1133
Chatham	181	284	200	493	135	235	133	233
Cherokee	119	318	97	264	66	106	55	113
Chowan	66	96	48	79	27	49	53	81
Clay	41	64	27	37	25	50	40	72
Cleveland	556	1125	430	978	322	607	330	477
Columbus	277	522	229	401	247	388	203	336
Craven	371	689	324	632	316	511	268	590
Cumberland	1909	3212	1465	2299	916	1532	497	1023
Currituck	88	132	79	179	80	133	50	99
Dare	318	809	304	595	220	339	240	385
Davidson	1375	2197	1112	1793	650	972	326	441
Davie	71	129	55	76	58	77	99	135
Duplin	414	790	376	782	262	408	180	338
Durham	1952	4346	1859	4434	1706	3822	1299	3806
Edgecombe	277	480	455	834	358	492	328	442
Forsyth	824	1564	696	1292	471	852	501	980
Franklin	144	432	129	414	141	313	144	364
Gaston	1618	2128	1094	1656	859	1170	751	1151
Gates	18	48	13	29	7	9	14	15
Graham	73	206	56	222	95	236	36	107

<b>County</b>	<b>7/1/2011 to 6/30/2012</b>		<b>7/1/2012 to 6/30/2013</b>		<b>7/1/2013 to 6/30/2014</b>		<b>7/1/2014 to 6/30/2015</b>	
	<b>Submissions</b>	<b>Items</b>	<b>Submissions</b>	<b>Items</b>	<b>Submissions</b>	<b>Items</b>	<b>Submissions</b>	<b>Items</b>
Granville	245	378	336	495	322	449	267	408
Greene	166	517	189	331	75	162	73	139
Guilford	1902	3350	1857	2967	1494	2197	1301	1993
Halifax	359	1619	314	956	220	590	222	405
Harnett	268	495	336	604	349	500	339	514
Haywood	236	429	235	352	203	299	292	404
Henderson	325	546	376	626	353	536	275	443
Hertford	97	149	102	151	71	124	73	97
Hoke	279	799	267	844	212	574	195	652
Hyde	45	64	32	44	22	54	5	9
Iredell	645	1115	528	730	382	503	302	507
Jackson	128	283	139	301	164	333	145	332
Johnston	870	1726	693	1374	672	1048	647	1110
Jones	80	124	57	73	62	95	56	73
Lee	300	566	433	586	265	409	218	462
Lenoir	360	590	214	373	392	613	394	661
Lincoln	145	281	110	225	76	137	221	367
Macon	125	261	112	187	124	168	127	196
Madison	62	101	88	139	71	141	48	80
Martin	143	273	151	241	67	88	172	294
McDowell	157	247	158	215	141	200	124	213
Mecklenburg	432	749	402	535	406	573	354	499
Mitchell	77	117	50	88	46	84	31	53
Montgomery	171	287	157	206	89	150	38	76
Moore	514	792	443	749	466	672	228	340
Nash	358	683	378	645	367	561	420	616
New Hanover	599	1590	565	1164	437	827	537	1247
Northampton	60	199	20	37	45	106	38	101
Onslow	959	1718	675	1264	603	958	449	698
Orange	429	786	453	843	520	811	384	755
Pamlico	55	71	39	40	25	49	79	108
Pasquotank	167	359	190	386	175	249	113	192
Pender	167	319	118	167	110	149	70	105
Perquimans	31	73	29	58	38	78	43	74
Person	231	305	182	218	173	229	162	218
Pitt	800	1226	644	1032	346	525	237	394
Polk	89	155	77	109	48	60	79	125
Randolph	700	1094	607	968	567	798	338	546
Richmond	318	620	344	624	384	648	214	354
Robeson	496	1364	496	1189	371	908	281	588
Rockingham	426	872	391	790	340	691	254	392

<b>County</b>	<b>7/1/2011 to 6/30/2012</b>		<b>7/1/2012 to 6/30/2013</b>		<b>7/1/2013 to 6/30/2014</b>		<b>7/1/2014 to 6/30/2015</b>	
	<b>Submissions</b>	<b>Items</b>	<b>Submissions</b>	<b>Items</b>	<b>Submissions</b>	<b>Items</b>	<b>Submissions</b>	<b>Items</b>
Rowan	386	753	315	576	220	396	385	616
Rutherford	250	417	199	321	120	173	121	204
Sampson	391	692	261	613	359	567	272	424
Scotland	367	1018	264	642	167	382	119	270
Stanly	179	377	145	302	135	253	192	319
Stokes	195	312	174	347	142	248	108	166
Surry	390	620	422	779	327	504	312	462
Swain	87	255	84	293	83	142	60	110
Transylvania	95	146	106	176	69	110	76	144
Tyrrell	26	39	24	67	44	45	31	34
Union	458	824	438	747	436	684	349	498
Vance	148	397	187	498	163	291	147	279
Wake	1010	1956	490	1524	228	802	263	921
Warren	43	115	27	88	32	73	37	98
Washington	30	53	106	120	32	57	21	55
Watauga	232	365	273	586	200	290	148	243
Wayne	550	1281	482	1272	404	837	377	675
Wilkes	342	550	256	592	282	508	257	381
Wilson	575	1303	614	1322	488	835	413	807
Yadkin	126	251	99	147	152	237	88	138
Yancey	163	227	95	158	58	111	60	101
<b>TOTAL</b>	<b>37087</b>	<b>69705</b>	<b>33264</b>	<b>61835</b>	<b>27642</b>	<b>46920</b>	<b>23785</b>	<b>42090</b>

**Rush Request Form (Web Only)**

Name of District Attorney or ADA:		
DA's Office Point of Contact and Phone #		
Date Requested for Case Completion:		
Trial Date (if confirmed):		
For DWI/DUI Cases		
Statute of Limitation:		
Habitual <input type="checkbox"/>	Fatality <input type="checkbox"/>	Personal Injury to Another <input type="checkbox"/>

Reason for Rush Request\*:

I, the undersigned District Attorney or Assistant District Attorney, am requesting that the North Carolina State Crime Laboratory complete the examination of the evidence submitted in the above reference case as quickly as possible.

DA or ADA:

Please attach this request to your Forensic Advantage Web message. This information can be located by your Agency's FA Administrator. \*Rush requests without adequate justification may not be honored.