



Focus on Forensics

MAY 2017

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SPECIAL POINTS OF INTEREST:

- Obtain new information about the submission of property crimes
- Read about the success of the DNA database
- Learn about internships at the lab
- Discover what you need to know to be a forensic scientist
- Find out about the KSP lab's new system to track Sexual Assault Kits

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The Truth About Property Crimes

The emphasis in the forensic community as of late has been the elimination of backlogged sexual assault cases, but there are DNA crime lab sections all across the country that are focused on tackling property crimes. While Property crimes amount to about 35% of cases submitted they account for approximately 60% of CODIS hits. Despite the success the laboratory has in processing these cases there are still some widespread misconceptions. Sabrina Christian the newly appointed supervisor of the DNA property crimes section addresses some of them below.

Misconception #1: The Crime Lab doesn't want us to submit all of our burglary cases. Actually we do! Since the Forensic Biology Section split last fall into Serology, Violent Crimes, and Property Crimes, analysts can now focus on particular types of cases. Just last month (February 2017) samples from property crimes cases yielded 35 CODIS (Combined DNA Index System) hits. Our hope is that being able to focus on these types of crimes will not only allow those cases to be solved, but can even aid in preventing future crimes, including violent crimes.

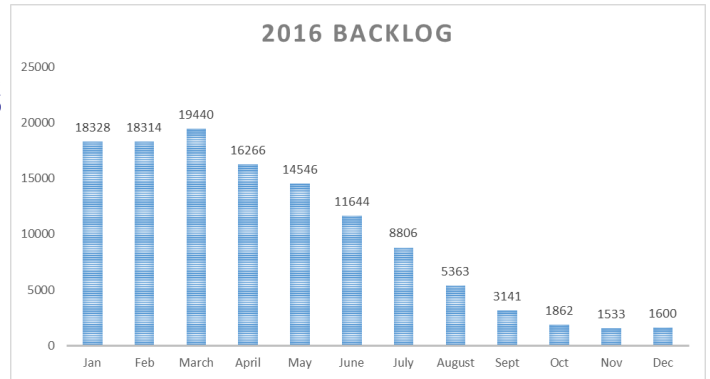
Misconception #2: If someone touched an item at the scene of a property crime, then that item should yield a good quality DNA profile that can be entered into CODIS. Unfortunately that is usually not the case. The samples we tend to get the best quality DNA profiles from are blood stains and saliva (e.g. from cigarette butts, cans and bottles), which are rich sources of DNA. Items such as gloves, hats and masks also often yield useable profiles. We have recently changed our DNA acceptance policy regarding touch DNA samples from Property Crimes and Robberies (see Page 4). This will allow us to concentrate our resources on the types of samples which will most likely yield good quality DNA profiles which can be entered into CODIS.

Misconception #3: If I don't have a suspect, I can't submit a property crime case/robbery case to the lab. This was the lab policy at one time, but that changed several years ago. While we do require that you submit a suspect standard if you have probable cause to obtain that standard, we do accept cases without a named suspect. Regarding standards, there is sometimes a misconception that if you have a suspect, and you believe that individual is already in the database, you don't need to collect a standard from him/her. This is not true. The standards that are collected for entry into the offender database are not considered suitable samples for use in court. Therefore, if there is a CODIS hit to that individual, a standard must still be collected and submitted to the laboratory in order for the DNA analyst on the case to do a comparison between the standard and the crime scene sample.

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DNA DATABASE: THE WAIT IS OVER

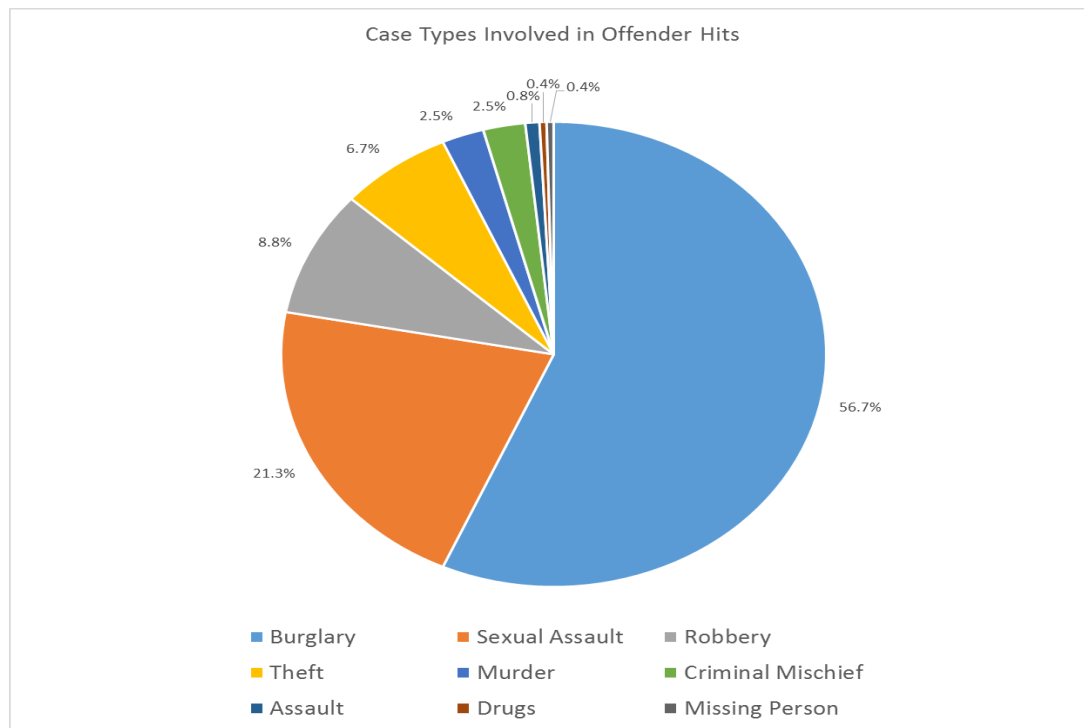
When DNA database analysts reported to work on January 2, 2016 they were staring down the barrel of a 17,747 offender sample backlog. By April of that year the backlog had grown to 19,440 samples. What was even more pressing was a turnaround time of 476 days from the time an offender sample was received in the laboratory until it finally made it's way into CODIS. However starting that month the database had new technology and new instrumentation validated and ready for use to finally tackle the problem plaguing them for years. With 3 full-time DNA analysts, by the end of the year over 29,000 offender samples were added to CODIS and over 350 DNA hits were reported to law enforcement. This is the most samples processed and hits reported since the creation of the database. As of April 2017, exactly one year later, the backlog stands at 1324 samples and a turnaround time of 7 days.



Why is this important? The database reported out DNA hits to cases ranging from burglary to murder to sexual assaults. The chart below shows the breakdown of the case types and their percentage in the overall total # of hits. With a turnaround time of 7 days it means that when an offender sample is brought to the laboratory one week, by the next week it's being searched in CODIS. These offender samples are coming from individuals who are in most cases still under supervision. This means law enforcement has a better chance of locating them when they are informed of a hit.

To prevent future backlogs, even in the event of Kentucky passing an arrestee law, the database has hired three additional analysts who are currently in training. New equipment has been or is in the process of being purchased and brought online. And additional training and new technologies are being explored to ensure that the database will be ahead of advances in the field.

If you have any questions about the database feel free to contact Regina Wells, DNA Database Supervisor, regina.wells@ky.gov.



The Truth About Property Crimes continued

Misconception #4: If there is a crime scene sample that may have potential fingerprints on it, but could also yield a DNA profile (e.g., cans, bottles, tools left at a scene), then the investigating officer must choose between DNA analysis and fingerprint analysis. This is not true. Our procedure in this case is that the crime scene item will first go to our AFIS section to be superglued for prints. The item will then be transferred to the laboratory where it will be swabbed for DNA analysis. Finally, the item will be transferred back to AFIS for further fingerprint analysis. If both types of analyses are needed, this should be clearly noted on the KSP 26 Request for Examination form.

Hopefully, this will help clear up some of the misconceptions about property crimes. As always, if you have any questions about property crimes, please feel free to call the lab (502-564-5230) and ask for Sabrina Christian (Supervisor, Property Crimes) or any DNA analyst in the Property Crimes unit. For further information, the link below is to an article which describes a study funded by the NIJ (National Institute of Justice) which focused on property crimes in five communities in CA, CO and AZ. Included are highlights of the outcomes in Los Angeles, Denver and Phoenix. This study demonstrates the importance of doing DNA analysis on property crimes and is well worth the read. http://home.iape.org/resourcesPages/IAPE_Downloads/DNA/BurglarsGoBust.pdf

For the Laboratory Case Acceptance Policy for Property Crimes see Page 4

Kentucky State Police Forensic Internship Program

INTERNSHIP SESSIONS	APPLICATION DATES*	INTERNSHIP DATES
Spring I 2018	April 1, 2017 – November 30, 2017	March 5, 2018 – April 27, 2018
Spring II 2018	April 1, 2017 – November 30, 2017	May 1, 2018** – May 31, 2018
Summer 2018	April 1, 2017 – November 30, 2017	June 4, 2018 – August 3, 2018
<i>*Applications will not be accepted prior to or after the application dates for each session.</i>		
<i>**Spring II Session may begin when student's college semester has ended.</i>		

Requirements

1. Student must be a current undergraduate or graduate student of a college or university and declared a major in at least one of the following: biology, chemistry, forensic chemistry, forensic biology, toxicology, biochemistry, or any 4-year degree in a natural science. Other degrees will only be considered if coursework consists of laboratory based science classes.
2. Student must have earned at least 60 semester hours at the time of application.
3. Student must have U.S. citizenship or be authorized to work in the U.S.
4. Student must be willing to consent to a criminal history check performed by KSP.

Internship positions will be available based on the current needs of the various sections. The goal is to place interns where there exists a mutually beneficial project whereby the intern gains experience and the section gains valuable research, validations, or verifications. Interns may also be asked to perform clerical work within the section they are assigned. Some of these tasks may seem like “busy work”, but are important and needed to keep a section running smoothly.

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NOTICE OF CHANGE IN DNA ACCEPTANCE POLICY FOR ROBBERIES AND PROPERTY CRIMES – EFFECTIVE IMMEDIATELY

Because “touch” DNA samples generally do not produce interpretable DNA profiles, the decision has been made to change the case acceptance policy for exhibits from **Robbery** cases (exceptions may apply) and the following **non-violent** case types: **Burglary, Theft, Larceny and Criminal Mischief**. This is being done in an effort to both better meet casework demands and ensure responsible use of resources. It has been our experience here at the Kentucky State Police Central Forensic Laboratory that true “touch” DNA evidence items in general yield either no profiles or partial uninterpretable profiles the vast majority of the time. Therefore, effective immediately, requests for DNA analysis on “touch” evidence will not be accepted without prior approval from either the supervisor or a DNA analyst in the Forensic Biology Casework Property Crimes Section. “Touch” evidence is evidence resulting from limited contact by an individual with a surface or material. This would include primarily objects touched by an individual’s hand. **Note:** Fingerprints can and should be submitted to our Automated Fingerprint Identification (AFIS) section for analysis. “Touch” evidence does **NOT** refer to items of evidence on which biological fluids (e.g. blood or saliva) are observed or expected to be found. In addition, evidence that has allegedly come in contact with a person’s mouth or items of clothing left at a scene are not considered “touch” DNA.

For further clarification regarding non-violent crimes, property crimes cases in which there is no suspect **may and should** be submitted to the laboratory for analysis. In fact, in our current backlog, the majority of our property crimes cases do not have a named suspect. If, on the other hand, there is a named suspect and there is probable cause to get a standard, it is **REQUIRED** that the standard is submitted to the laboratory along with the other evidence items from the case. This will ensure those cases are completed in a more efficient and expeditious manner.

This new policy will help us to focus on the most probative evidence types, which will yield the best quality profiles, and should even help decrease our case turnaround time. It is well known that the recidivism rate is high for perpetrators who commit burglaries and that the potential to escalate to violent crimes is great. We are confident that this change in policy will not only aid in solving more crimes, but will also be a tool for the prevention of future crimes.

Below are examples of what types of evidence items will and will not be accepted:

WILL Be Accepted

Blood/Saliva

Bottles/Cans

Cigarette Butts

Clothing (to identify owner/wearer)

Gloves

Hats

Masks

Tools/objects brought to and left at scene

***NOTE:** These types of evidence items should still be collected as future DNA testing may be applicable. If you have any questions please feel free to contact me.

WILL NOT be Accepted *

Swabs from doorknobs/Handles (including vehicles)

Swabs from windows/doors (including smears)

Swabs from countertops

Swabs from cash registers/drawers

Swabs from safes/jewelry boxes

Cords/Cables (exception-ligatures)

Keys

Pockets

Sincerely,

Sabrina Christian

Forensic Biology Casework Supervisor-Property Crimes

(502) 564-5230, ext. 310 or Sabrina.Christian@ky.gov

Kentucky State Police Forensic Internship Program

continued

Application Process

1. A current resume.
2. A narrative essay no more than one double-spaced page in length that describes:
 - A. Why you are interested in the KSP Forensic Internship Program.
 - B. Your career goals.
 - C. The section(s) of interest to you (Toxicology, Trace Analysis, Firearms & Toolmarks, Drug Analysis, and Forensic Biology)
3. Complete the Forensic Science Internship Application.
4. One enrollment verification form from a school official (advisor, professor in your area of study, internship/ co-op coordinator, etc.).

Submit via email to jennifer.hatfield@ky.gov or mail to the address below: (*Email is preferred.*)

Attn: Jennifer A. Hatfield
KY State Police Central Forensic Laboratory
100 Sower Blvd. Ste. 102
Frankfort, KY 40601

Selection Criteria

Applicants are assessed on the entirety of their application packet. Resumes should demonstrate any leadership experience, any involvement in activities, and any paid or unpaid work experience. The narrative essay should articulate the subject matter presented and be free of grammatical errors.

The application should be complete. Lastly, the school official signing your enrollment verification letter needs to be available should there be a question regarding enrollment. Selections will usually be made within thirty days of the application closing date. Notifications will be sent electronically to the email address listed on the application. If an applicant is chosen for an internship and chooses to accept, they can expect to be contacted in regards to their internship schedule and availability. Since the internship is unpaid, it is completely acceptable to request a set internship schedule to make time for paying jobs. Most internships will be part-time.

If an internship session does not offer any internship opportunities, applicants may need to resubmit a copy of their application packet to be considered for any additional sessions not marked on the original application. The summer session has far more applicants than spring I and II. As a result, if an applicant's class schedule permits an internship during spring I or II, these sessions could be less competitive among qualified applicants.

So You Want to Be a Forensic Scientist

I constantly remind people that crime isn't solved by technology; it's solved by people.
Patricia Cornwell

In the time of crime scene shows such as CSI and Bones a new interest has emerged in the field of forensic science. This has left many young people and even those already working in other laboratories wondering how to break into an increasingly competitive field. This article will provide general information about what really goes on in the laboratory and how you can prepare yourself for a career in forensic science. Upcoming issues will focus on different positions in the laboratory and their specific requirements.

FIND YOUR FOCUS

There are many facets of forensic science that you should consider, especially before you think about your education. What parts of forensic science interest you the most? Is it the laboratory work of processing evidence and testifying in the courtroom? Perhaps you are more interested in actually going to crime scenes and collecting evidence. In most agencies these jobs are performed by different people with different educational backgrounds. Are you interested in DNA or are you interested more in the chemistry driven fields of drug analysis or toxicology? The answer to these questions will give you the direction you need to take in your education to ensure you have the proper background to fill these jobs. If it's the laboratory you are interested in, many of the forensic science programs have a specific tract to follow whether it is chemistry or biology. The tract you choose will directly affect which positions you qualify for. Many crime scene and evidence technicians focus on an education based in the criminal justice field. To have the best chance at the job you want this should be something you decide early on.

EDUCATE YOURSELF

There are many forensic science programs that universities are offering in response to the growing interest in the field. However having a forensic science degree is not a requirement and does not always ensure that you are the best candidate. Many of the analysts currently employed have degrees in biology, chemistry and other specialized science fields. Make sure that the program you choose has the curriculum to qualify you for employment in the laboratory. For example, the FBI requires DNA analysts to have coursework in molecular biology/cell biology, biochemistry, and genetics, no exceptions and no substitutions.

EXPERIENCE VS BLANK SLATE

Many people that have interviewed with the KSP laboratory have been concerned about lack of experience. It is a very difficult field to break into and therefore most people that interview do not have specific forensic experience. Because of the importance of the job, there is an intensive training program for whichever section of the laboratory you choose to work. General laboratory experience in any field is a plus because it means you know the ins and outs of how a lab works along with basic safety procedures. All disciplines within the laboratory require an individual to complete a mock trial before they ever work a case that could require testimony in court. It's our job as a laboratory to ensure that every individual receives the training they need to be successful.

HUMVEES AND HIGH HEELS

When people learn what I do they always want to share with me which crime scene show is their favorite. Then they follow it with "I wish I had a job like that". My patent answer is always "Yeah, me too". Hollywood's portrayal of forensic science has perpetuated an image of what goes on in a laboratory that differs greatly from the actual day to day. In reality, retired police cruisers sit where Humvees would be found on the Hollywood set. Blue jeans or khakis replace the leather pants commonly found in the wardrobes on TV. Police officers, not lab personnel, are arresting and interrogating suspects, interviewing victims and collecting evidence. Lab personnel have little contact with victims or suspects and concentrate instead on analyzing the evidence delivered to them by law enforcement. There is no such person in the lab as "Abby" of NCIS fame. Everyone specializes in one particular section such as trace or firearms. No one person does it all. And NO DRINKING BIG GULPS in the lab!!!

THE ONLY CONSTANT IS CHANGE

If TV doesn't have it right, then what does a day at the lab look like. Every day at the laboratory offers opportunities to do something different. No two cases are alike and each has special circumstances that need to be considered before analysis begins. There are opportunities to provide training to officers for evidence collection, offender DNA collection and education about the laboratory in general. Days will be spent training new analysts, testifying in court, and validating new technologies or equipment for use in the laboratory. There are also opportunities to travel to conferences and classes for continuing education. And while there is a great deal of work to be done in the lab, a good portion of an analyst's time is spent reviewing case files and analyzing data.

SCIENCE FIRST

While we are the Kentucky State Police lab, the individuals that we actually work for are the citizens of the Commonwealth. There is a portrayal of us that because we work for law enforcement we are biased in their favor. We are scientists first and our results will always be what the evidence tells us, not what law enforcement, prosecutors or defense attorneys hope to hear. In fact in most cases once the results leave the laboratory, unless an analyst is required to testify in court, we don't know the outcome of the cases that are worked. We provide the highest quality work we can to provide answers and justice for victims and families.

For links to Forensic Science Programs See Page 7

What's New at the Lab?

TRACKING RAPE KITS

The Forensic Laboratories have created a tracking application for Sexual Assault Forensic Evidence (SAFE) Kits. Labels with a "Kit #" are being applied to the unused kits stocked at the hospitals. When a kit is pulled and used in an exam, the hospital SANE nurse or other staff member will log into the KSP web portal and enter the Kit #, the date and time of collection, and if the victim has reported the incident to law enforcement. If it has been reported to law enforcement, the hospital includes in record on the web portal, the agency that was contacted along with the date and time. When the agency picks up the kit, that information is also added to the record. Finally, when the kit arrives at the laboratory, the record is updated to include the submission information. This tracking system is meant to track the submissions of the sexual assault kits within the timelines set forth in Senate Bill 63. Hospitals are being contacted now to set up accounts. If you have questions or wish to create an account, please send an email to Laura.Sudkamp@ky.gov.

NEW HIRES

The forensic casework section has gained 11 new employees since December 1, 2016. These analysts will be essential to aiding in our backlog possibly sooner than expected. This is all in thanks to the help of Robert O'Brien and his colleagues from the National Forensic Science Technology Center (NFSTC). With the assistance of NFSTC, qualified casework analysts who may normally stop their casework to conduct training will now be able to continue processing cases. NFSTC is working closely with technical leaders and supervisors to ensure the topics and tasks required in both serology and DNA training are covered as needed to meet the high quality of standards the KSP lab has in place.

Did You Know?

No fingerprints, no record

Criminal history entries are dependent upon fingerprint records taken at the time of arrest. If no fingerprints are taken and that individual is ultimately convicted of that crime, no record of that conviction will be present on their criminal history. The DNA database section confirms all convictions of offenders prior to reporting CODIS hits to law enforcement. The lack of fingerprint records resulting in incomplete criminal histories make these confirmations more difficult.

BEAST's 10 year anniversary

The laboratory has been using the BEAST Laboratory Information System for 10 years in an effort to ensure that all agencies can easily access their reports. Remember reports are not faxed and there is no notification process in place, so please check BEAST periodically for completed reports. If you or someone in your agency needs access to BEAST contact Michael David at Michael.David@ky.gov.

Forensic Science Programs

Eastern Kentucky University
<http://forensicscience.eku.edu/>

Marshall University
<http://forensics.marshall.edu/>

West Virginia University
<http://forensics.wvu.edu/>

Florida International University
<http://ifri.fiu.edu/>

Indiana University-Purdue University Indianapolis
<http://forensic.iupui.edu/undergraduate/degrees>

Ohio University
<https://www.ohio.edu/cas/chemistry/undergrad/forensic.cfm>

Virginia Commonwealth University
<http://forensicscience.vcu.edu/>

Penn State
<http://forensics.psu.edu/>

This is just a sample of forensic science programs around the country and shouldn't be considered a recommendation by the Kentucky State Police.

Laboratory Management

Captain Derek Grant, Central Laboratory (derek.grant@ky.gov)

Lt. Mark Mayes, Western Laboratory (mark.mayes@ky.gov)

Sgt. Rodney Wren, Eastern Laboratory (rodney.wren@ky.gov)

Laura Sudkamp, Laboratory System Director, Central Laboratory (laura.sudkamp@ky.gov)

Laboratory phone numbers and contact info

Western Laboratory, 270-824-7540

David Hack, Laboratory Director (david.hack@ky.gov)

Jefferson Laboratory, 502-426-8240

Julie Ferguson, Laboratory Director (julie.ferguson@ky.gov)

Northern Laboratory, 859-441-2220

Jeanna Oxenham, Laboratory Director (jeanna.oxenham@ky.gov)

Southeastern Laboratory, 606-877-1464

Beverly Wagoner, Laboratory Director (Beverly.wagoner@ky.gov)

Eastern Laboratory, 606-929-9142

Larry Boggs, Laboratory Director (larry.boggs@ky.gov)

Central Laboratory, 502-564-5230 or 800-326-4879

Central Laboratory Section Supervisors:

Matthew Clements, Firearms/Toolmark Supervisor (matthew.clements@ky.gov)

Whitney Collins, Supervisor (DNA/Bloodstain Pattern/Sexual Assaults/Violent Crimes) (whitney.collins@ky.gov)

Sabrina Christian, Supervisor (DNA/Property Crimes) (Sabrina.christian@ky.gov)

Sally Edwards, Serology Supervisor (sally.edwards@ky.gov)

Michael David, Administrative Laboratory Supervisor (michael.david@ky.gov)

Katrina Featherston, Quality Assurance Supervisor (katrina.featherston@ky.gov)

Ryan Johnson, Toxicology Supervisor (ryan.johnson@ky.gov)

Brandon Standifer, Toxicology Supervisor (Brandon.standifer@ky.gov)

Charles Moffett, Photo Lab Supervisor (charles.moffett@ky.gov)

Stuart Mullins, Breath Alcohol, Systems Technician Specialist IT (stuart.mullins@ky.gov)

Jack Reid, Trace Supervisor (jack.reid@ky.gov)

Jeremy Triplett, Drug Chemistry Supervisor (jeremy.triplett@ky.gov)

Regina Wells, DNA Database Supervisor (regina.wells@ky.gov)

SUGGESTIONS WELCOME!!

Please contact regina.wells@ky.gov with comments or suggestions.

QUICK LINKS

[KSP Lab website \(previous newsletters\)](#)

[Physical Evidence Collection Guide](#)

[Combined DNA Index System \(CODIS\)](#)

Scientific Working Groups...

[SWGAM \(DNA\)](#)

[SWGUN \(Firearms\)](#)