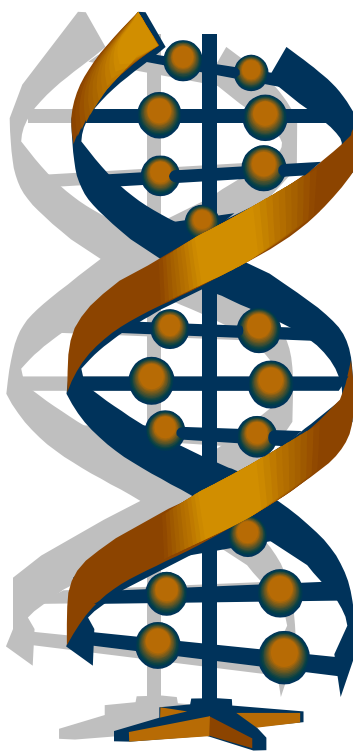
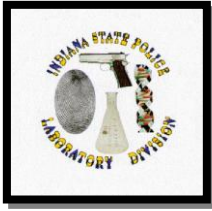


INDIANA STATE POLICE
LABORATORY DIVISION



2010 ANNUAL REPORT

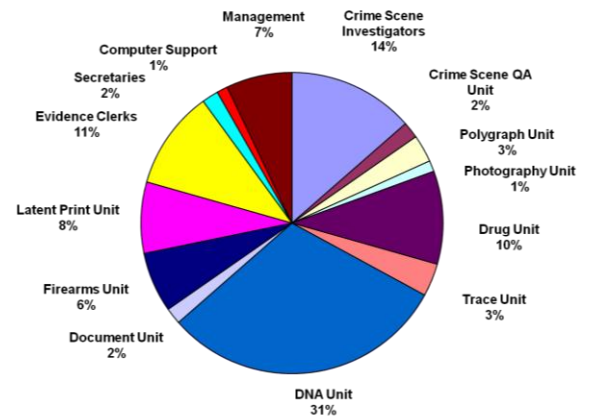
The DNA double helix was selected as the cover of this year's Laboratory Annual Report to highlight the backlog reduction efforts of the Biology (DNA) Section. In 2006, the laboratory embarked on a Backlog Reduction Plan with the goal of having 90% of the laboratory biology cases 45 days old or less. At the end of 2010, 69% of the biology cases were less than 45 days old. The Biology Section was successful in reducing the backlog to its lowest level since the Backlog Reduction Plan was implemented, from 1,479 cases to 357 cases with all but 75 of those being in process. Additionally, the average turnaround time for a biology case from the time of submission to when the report was generated has been reduced to 42 days.



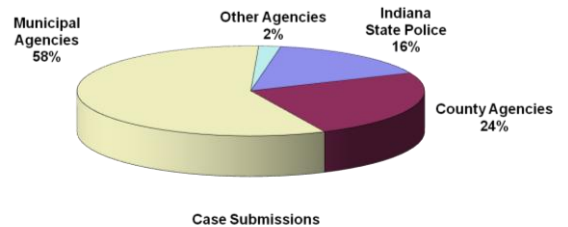
Indiana State Police Laboratory Division 2010 Annual Report

The Laboratory Division provides Field Support and Analytical Services for the criminal justice community of Indiana, and Evidence Security for the Indiana State Police. Our mission is *“To provide a maximum of crime laboratory service for all branches of the criminal justice system within the resources provided.”* Our goal is *“To develop evidence collection and analytical resources in a balanced fashion.”*

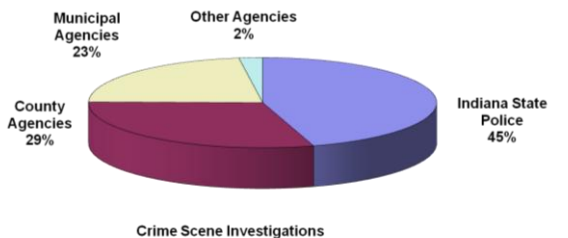
At the end of 2010, the Laboratory Division had a staff of 170 individuals providing analytical and support services. The chart to the right details the apportionment of the staff. Approximately 80% of the Laboratory Division personnel are directly involved in collecting, maintaining, or analyzing evidence. Of those directly analyzing evidence 40% are certified by a forensic organization. The last page of this report has a chart detailing the organizational structure of the division. The division’s personnel provide leadership to the forensic community by having multiple individuals holding office or working on committees of numerous forensic organizations.



The Laboratory Division accepts evidence for analysis at laboratories located at Indianapolis, Lowell, Fort Wayne, and Evansville. The American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB) has accredited these laboratories since 1991. The next reaccreditation will occur in 2012 and it will be an ISO accreditation process. Evidence storage is maintained at the 4 laboratories and 14 State Police Districts.



Analytical services (DNA, Drugs, Trace, Firearms, Latent Prints, and Documents) and support services (Crime Scene Investigation, Crime Scene Training, Polygraph, and Photography) are provided to contributors from state, county, municipal, and federal agencies to assist in the detection, apprehension, and prosecution of criminals. As shown in the “Case Submissions” chart, the majority of cases for analysis are submitted from municipal agencies. While the “Crime Scene Investigations” chart indicates, the majority of our investigations are accomplished for the Indiana State Police.



All four laboratories provide analysis in DNA, Drugs, Firearms, and Latent Prints. Trace Examinations and Document Analysis are only available at the Indianapolis Regional Laboratory.

The 2010 case submissions at the four regional laboratories are shown in the table below.

	<i>Evansville</i>	<i>Fort Wayne</i>	<i>Indianapolis</i>	<i>Lowell</i>	<i>Totals</i>
DNA	379	104	3357	385	4225
Documents	0	0	62	0	62
Drug	1492	2204	4284	1883	9863
Firearms	197	327	636	177	1337
Fingerprint	135	446	430	411	1422
Trace	0	0	296	0	296
Totals	2203	3081	9065	2856	17205

The 2010 case completions at the four regional laboratories are shown in the table below.

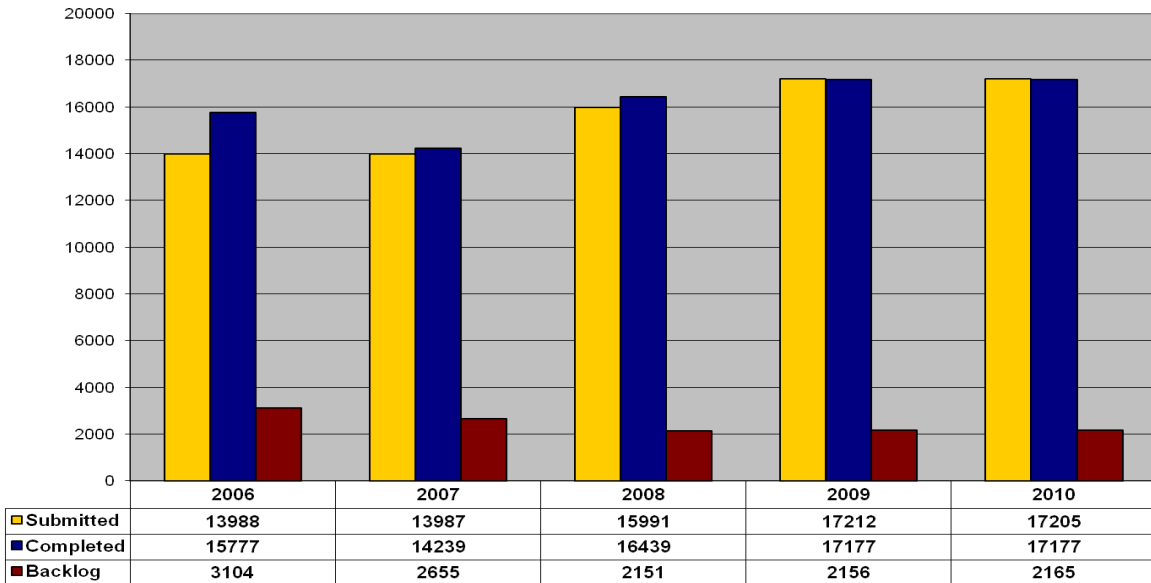
	<i>Evansville</i>	<i>Fort Wayne</i>	<i>Indianapolis</i>	<i>Lowell</i>	<i>Totals</i>
DNA	409	109	3741	392	4651
Documents	0	0	57	0	57
Drug	1357	2082	4031	1858	9328
Firearms	188	283	593	222	1286
Fingerprint	149	515	457	430	1551
Trace	0	0	304	0	304
Totals	2103	2989	9183	2902	17177

The 2010 case backlogs at the four regional laboratories are shown in the table below.

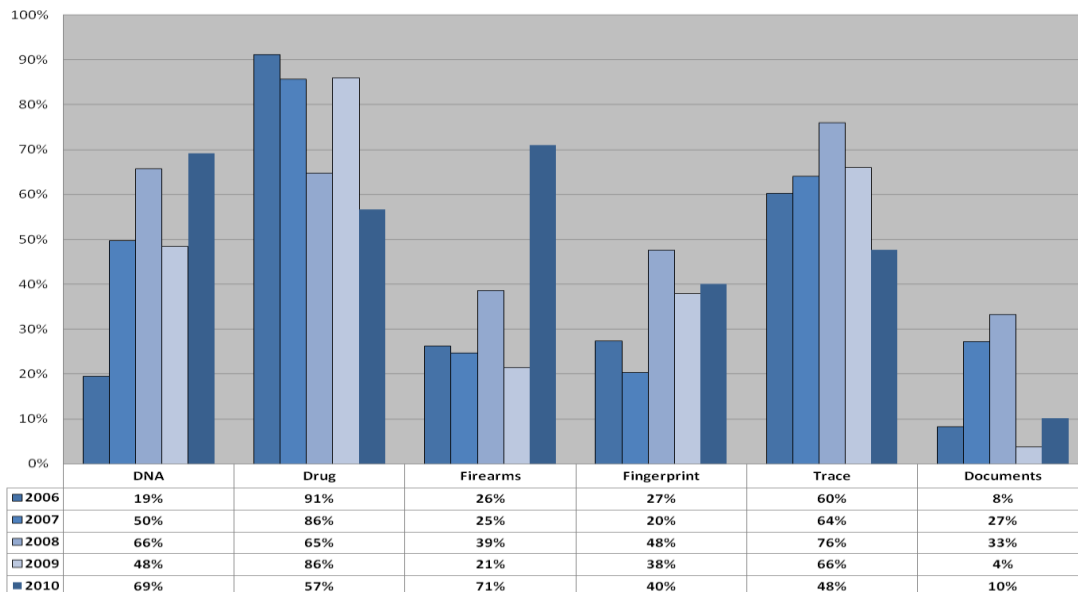
	<i>Evansville</i>	<i>Fort Wayne</i>	<i>Indianapolis</i>	<i>Lowell</i>	<i>Totals</i>
DNA	32	39	254	32	357
Documents	0	0	59	0	59
Drug	162	510	427	73	1172
Firearms	30	110	192	6	338
Fingerprint	50	56	76	15	197
Trace	0	0	42	0	42
Totals	274	715	1050	126	2165

As shown in the “Case Submissions, Completions, and Backlog” graph below, the Laboratory Division received 17,205 cases and completed 17,177 cases in 2010. The last three years has seen the overall backlog maintained at its lowest levels since 1999. The average turnaround time at the end of 2010 for completing a case was 54 days from submission, down from 65 days in 2009. The Laboratory Division has a long-term goal of having 90% of its backlog being 45 days or less from submission. The portion of cases by unit under 45 days old is shown in the graph at the bottom of the page.

Case Submissions, Completions, and Backlog

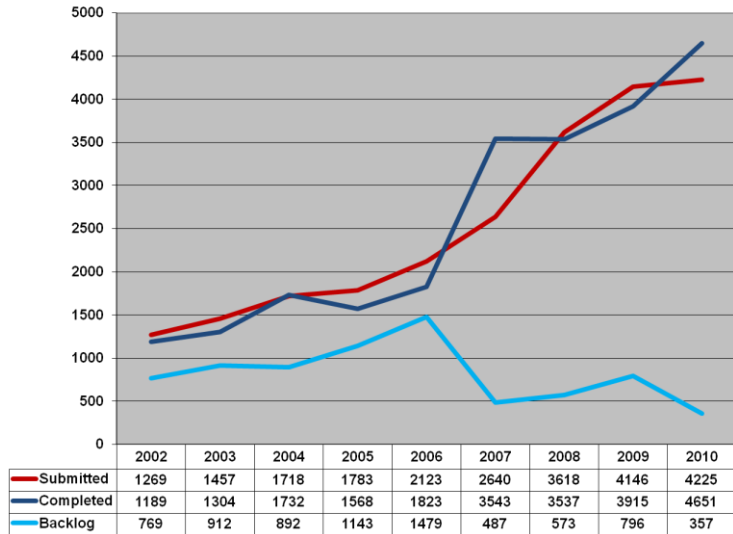


Cases under 45 days



The **Forensic Biology Section** (52 staff) is organized into four casework units plus the Combined DNA Index System (CODIS) Unit. This section provides identification of body fluids, specific determination of biological materials, DNA extraction and evaluation, DNA amplification and typing, DNA profile comparisons, statistical analysis of DNA profile results, plus it maintains and searches an offender database for matching profiles.

The Forensic Biology Section completed 4,651 cases for the year, an increase of over 18% from the previous year. The section had 79 more submissions than the previous year. The growth in submissions and completions as well as the backlog is shown in the graph to the right.



In 2010, collections of offenders from both Department of Corrections and county facilities continued, bringing in samples from approximately 20,000 previously untested convicted offenders. Samples are processed, outsourced, and entered into the database with virtually no standing backlog apart from those being analyzed at the vendor at any point in time.

The laboratory began working directly with representatives from 64 counties on convicted offender sample collection. These 64 counties collect samples at 85 separate agencies, all of whom were given training on proper collection and submission of these samples.

In 2010, 25 cold cases were reopened for DNA analysis of which 11 produced CODIS eligible profiles and 4 of the 11 resulted in database hits. This brings the overall totals from the Cold Case Project to 62 cases reanalyzed, 33 CODIS eligible profiles obtained and entered, and new leads in 11 of those cold cases via a database hit.

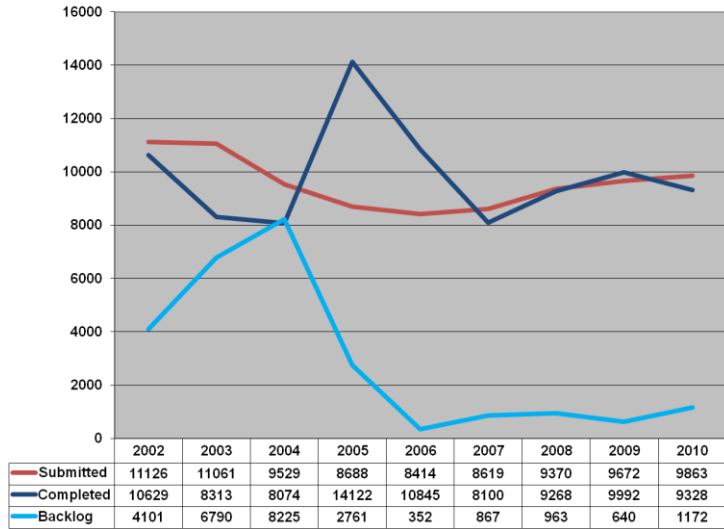
As a result of the offender program, the Indiana State Police aided 517 separate criminal investigations through CODIS during 2010. The breakdown of these hits is provided below.

National Forensic Hits	10
National Offender Hits	120
State Forensic Hits	35
State Offender Hits	356

One of these hits involved a 5-year old Fort Wayne girl who was sexually assaulted, choked, and left for dead in 2003. This year an individual was convicted for child molesting in a different case. When he was processed by the Department of Corrections, his DNA was entered into CODIS. The state database linked him to the Fort Wayne attack.

The **Forensic Drug Analysis Unit** (17 staff) provides identification of controlled substances, quantitation of controlled substances for investigative intelligence, identification of non-controlled drugs of abuse, identification of controlled steroids, and identification and comparison of diluent materials in drug preparations.

The unit analyzed 9,328 cases and 27,201 items in 2010. Case completions were down 7% from last year. This decrease is substantially attributable to the vacancy of a drug chemist position in the Fort Wayne Regional Laboratory. There was a 2% increase in drug case submissions from the previous year.



“Spice” or “K2” type samples containing synthetic cannabinoids, (a large series of compounds of interest and recent abuse in 2010) have been identified in all four regional laboratories. The compounds identified were JWH-018, JWH-073, JWH-200, and JWH-250. The Drug Unit is actively researching methods for the analysis and identification of these substances and has been assisting the legislature in the pursuit of control measures for these substances.

The Meth Suppression Section along with the Muncie Police Department worked a suspected Dimethyltryptamine (DMT) lab. The suspect was a Ball State student who gladly explained the whole process. Several items of Ayahuasca vine (bark) pictured to the right and liquid samples (acidic and basic) were submitted to the laboratory. The vine indicated the presence of Harmine and DMT in all of the liquid samples.

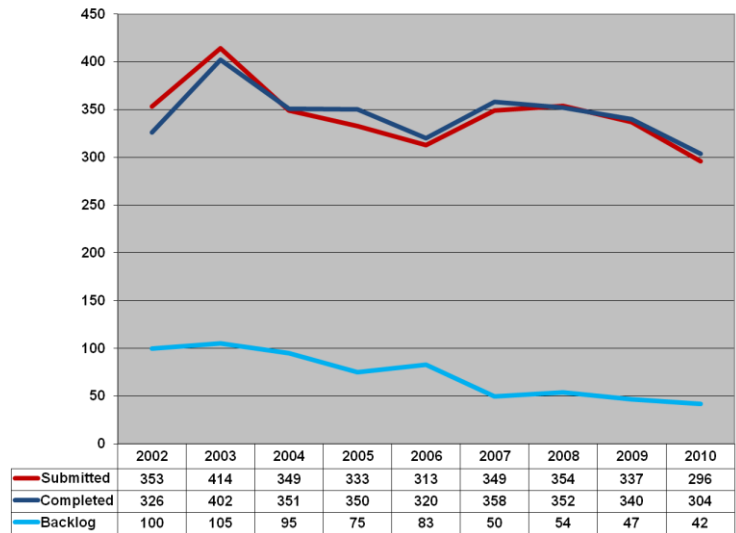


On November 17, 2010, information was presented at the Indiana State Prosecutors’ Methamphetamine Symposium on drug analysis and clandestine laboratories samples. The presentation also included changes pertaining to drug analysis and reporting which will be implemented after new test methods go into effect.

The **Microanalysis Unit** (6 staff) provides identification, analysis, and comparison of fibers, paints, tapes, glass, fire debris, plastics, automotive lamps, clandestine laboratory reagents, unknown materials, and building materials. The majority of cases worked by the unit are fire debris cases.

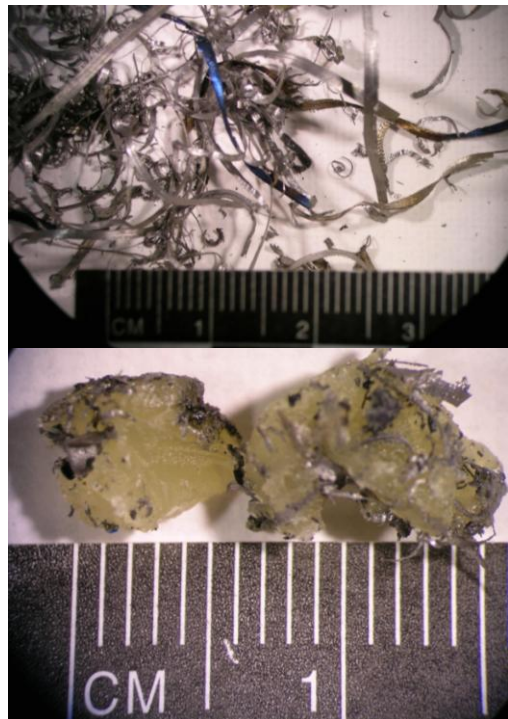
The Microanalysis Unit completed 304 cases during 2009 with a backlog of 42 cases at the end of the year.

The Microanalysis Unit actively participates in different capacities in the forensic community. They have a member on the White House Sub-Committee Standards



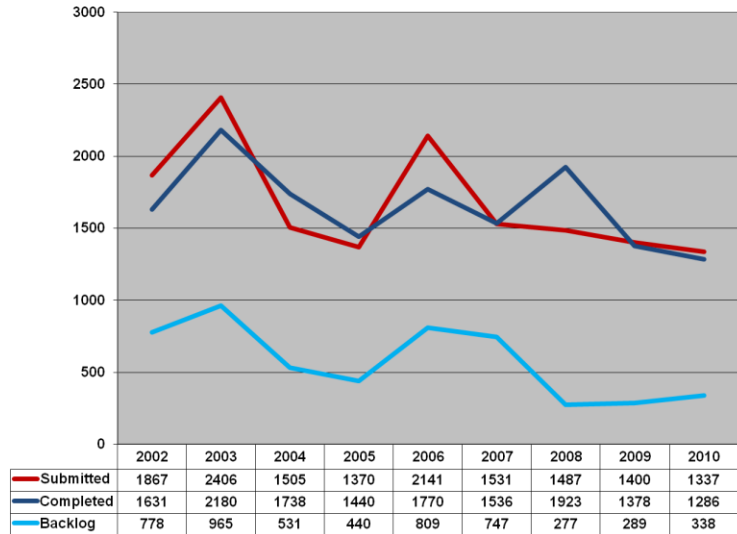
Practices and Protocol inter-agency working group, a member on the Scientific Working Group for Materials Analysis, and a member on the board of the Midwestern Association of Forensic Scientists. There are several on-going projects with the Forensic Science Program at I.U.P.U.I. A current project is looking at lead transfer from a bullet to a windshield (example pictured to the left). The study is scheduled to be presented at the Trace Evidence Symposium this next summer.

Photos to the right are from a metal and unknown comparison case. The photographs were taken through the lens of an Olympus SZX12 Stereomicroscope at low magnification. Following a burglary, different types of metal shavings (upper photo) and yellow, waxy material (lower photo) were collected from the floor by a safe. These items were compared to metal shavings and yellow, waxy material recovered from a suspect's magnetic drill press and toolbox. Elemental analysis of the different types of metal shavings from the floor by the safe indicated that they were correspondingly similar to the different types of metal shavings from the toolbox. The yellow, waxy material collected from the floor by the safe and from the magnetic drill press were compared and found to be similar visually, physically, and chemically.



The **Forensic Firearms Identification Unit** (11 staff) provides comparison and identification of fired bullets and cartridge casings. The unit also provides examination and comparison of tool mark evidence, Integrated Ballistics Identification System (IBIS) database entry/inquiry for unsolved firearms related cases, muzzle to target distant determination, serial number restoration, function testing of firearms, and characterization of recovered ammunition components. Members of the unit also participate on the Superintendent's Advisory Committee on Firearms/Ammunition System by evaluating new ammunition and firearms for future procurement.

The Firearms Unit has worked 1,286 firearm, toolmark, serial number, and ballistic imaging cases for 2010 while receiving from contributors 1,337 cases. Even though the backlog for 2010 was higher than in 2009, the number of cases in the backlog over 45 days was 98 cases, a decrease of 129 cases since 2009.



The Firearms Unit handled an array of high profile cases this past year. In one of note, a woman and her teenage daughter were abducted by the woman's boyfriend and driven to a remote area in Benton County. The boyfriend shot the woman in front of the daughter and then fled. He was later arrested outside of Las Vegas and a firearm was found in the area where he was arrested. The firearm was identified as the one that fired the projectile that killed the woman but the defendant claimed that he fell down and the firearm accidentally discharged shooting the woman. The woman's shirt was examined and found that the firearm in this case was "at or near contact" to the woman's shirt (pictured to the right) at the time of discharge, therefore dispelling the defendant's defense. The defendant received 83 years and is currently awaiting trial on other charges.



In another case in Benton County, the admissibility of firearm evidence was challenged through a Daubert Hearing. A Daubert Hearing is a legal proceeding in which a judge must decide whether expert testimony is admissible in court. At the conclusion of the lengthy testimony, the court ruled in favor of the State and the examiner was allowed to testify as an expert in her field. Subsequently, the defendant was convicted for the killing of his fiancé on the day they were to be married. He was sentenced to 83 years in prison.

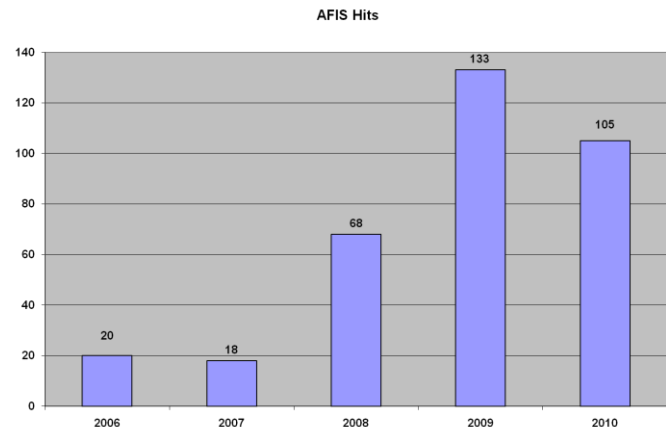
The unit has several individuals working on national committees including the Research and Development Committee for the Association of Firearm and Toolmark Examiners (AFTE), NIBIN Users Conference Representative, the Secretarial Reform Committee for AFTE, the AFTE Journal Index Committee, Scientific Working Group for Firearms and Toolmarks (SWGUN), and the Board of Directors for AFTE.

The **Forensic Latent Print Identification Unit** (13 staff) examines and compares unknown to known dermal friction ridge detail. Processing techniques includes physical, chemical, and fluorescent development of latent print evidence. For unidentified suspect investigations, the Automated Fingerprint Identification System (AFIS) database entry/inquiry is employed. When a case is submitted without a suspect, the unknown fingerprints are entered into the system. Potential candidates are generated by the system but the comparison and identification must be made by a forensic scientist. The unit also conducts examinations of footwear impressions and tire impressions.

The unit worked 1,551 cases during 2010, an increase of 4% from 2009. Additionally, the unit had 105 AFIS hits as shown in the AFIS Hits graph to the lower right. One of the 13 staff is in training and is scheduled to start casework in 2011.



In June 2010, an elderly couple had their house broken into and robbed while they were home. Both homeowners were forced into the basement, and on top of the cellar door, the thieves placed a combustible gas alarm to hold the door down to prevent the homeowners' escape. This gas alarm was submitted for latent print processing. One identifiable latent print was developed on the gas alarm. It was entered into AFIS, and a suspect was identified and later arrested.

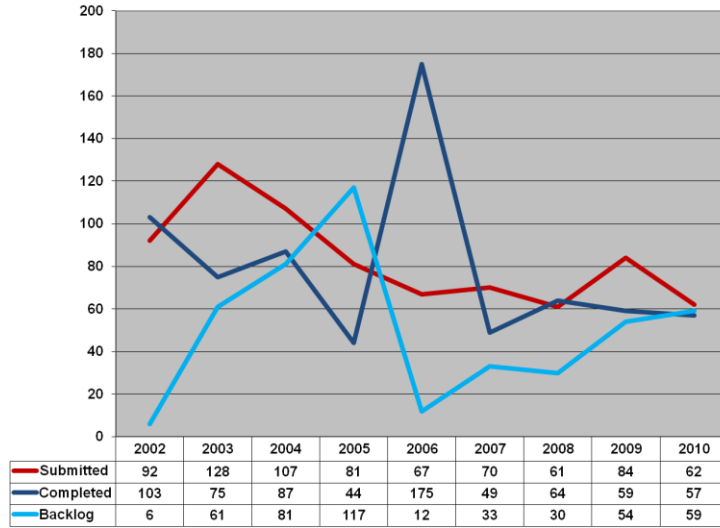


On a Friday in May 2010, print evidence was submitted on a case involving the rape of a 4-year-old girl. The lift from a window included a palm print that was clear and suitable for identification. A comparison eliminated the initial suspect as having made the questioned palm print. In the two weeks following the initial submission, standards from an additional fifteen individuals were submitted and the palm print was identified as having been made by one of the individuals. The individual, who did not have a prior sexual criminal history, was subsequently arrested.

Another case involved a 19 year old fugitive, the "Barefoot Bandit", from the State of Washington. He fled to the Bahamas in a plane stolen from Bloomington, Indiana. Fingerprint evidence developed and identified by an ISP analyst linked the suspect to the stolen plane.

The **Forensic Document Unit** (3 staff) provides an extensive range of tests. These include the examination of handwriting in an attempt to identify or eliminate a writer to a document in question, authentication of documents (e.g. checks, vehicle titles, driver licenses) and development of indented writing impressions on documents. Examinations also include attempting to determine the sequence of events on documents, edge to edge (fracture) exams, decipherment of altered/obliterated and charred documents to determine the original text, microscopic examinations of printed documents (e.g. fax and photocopier) to determine source, and examination of mechanical impressions (e.g. typewriter, wet and dry seals).

The unit completed 57 cases in 2010 while receiving 62 cases. The unit currently has two examiners doing limited casework while finishing additional training. They should start full time casework toward the end of 2012.



The Document Unit was instrumental in finding evidence that established the innocence of an individual who had been

accused by an auto shop owner of not paying all of the charges allegedly agreed upon in a contract. The shop owner presented an original two-page contract to confirm his accusations. However, indented writing impressions that developed on page 2 of the “original contract” indicated that the first page of the contract had been replaced and rewritten with a higher price. After the prosecutor was informed of the evidence, she confronted the shop owner who confessed to having substituted a different page in the contract and the charges were dropped against the customer.

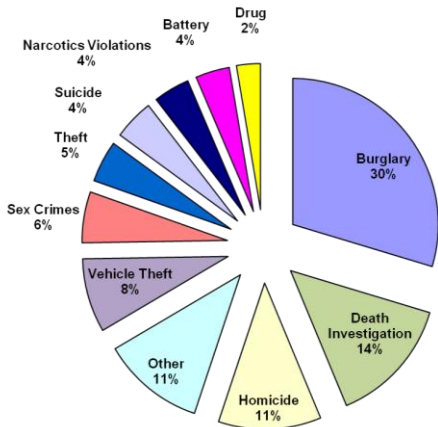
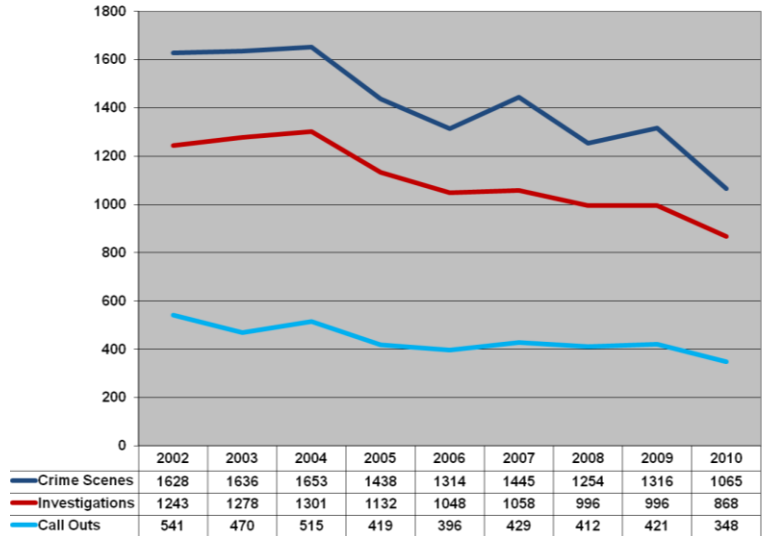
The Document Unit was able to assist the Bullitt County, Kentucky, Sheriff’s Office with an anonymous kidnapping note left in a restroom along Interstate 65 indicating a child had been kidnapped from Indianapolis. The document examiner was able to develop indented writing impressions on the note. Investigators used this information to develop a person of interest who had recently visited a food pantry and asked for a sheet of paper. This individual was located, arrested, and later confessed to leaving the note. Fortunately, there had not been a kidnapping. The investigation led to the individual being arrested for false reporting.

A member of the unit also participated in a Daubert hearing in Benton County along with a firearms examiner. At the conclusion of the lengthy testimony, the court ruled in favor of the state and the examiners were allowed to testify as experts in their fields.

Crime Scene Investigators (23 staff) provide technical crime scene processing and court testimony as required. This includes identifying and collecting potential evidence, reconstructing the events of the crime and physically linking potential suspects to the crime.

Crime scene investigators worked 868 investigations involving 1,065 crime scenes. They were called out 348 times and attended 115 autopsies. They testified 199 times with 994 court hours.

As noted in the chart below a wide variety of crime scenes were worked by the crime scene investigators. Burglaries accounted for 30% of the cases and homicides, suicides, and death investigations combined for an additional 29%.



Crime Scene Investigators (CSIs) process many types of crime scenes. Occasionally, a scene may have an unusual twist to it requiring CSIs to rely not only on their specialized training but also on their own experiences and personal knowledge. In northern Indiana, a man reportedly found his wife dead and lying on the bench of a weightlifting machine with the weight bar lying across her neck. With no physical evidence to the contrary at the scene, detectives were unable to disprove the husband's claim of accidental death. Through the CSIs own knowledge of the weightlifting machine and after

many hours of working with representatives of the weightlifting machine company, a theory was developed which indicated that a crime had actually been committed. Largely through the efforts of the CSI, the husband was charged with murder and was ultimately convicted. This case drew national media attention, and after the verdict was reached, the CSI appeared on the television show Dateline NBC.

With the closing of four Indiana State Police Posts in 2010, evidence being held at those facilities had to be moved to the posts assuming responsibility for those counties. Evidence clerks played an invaluable role in transferring the evidence. Moving the evidence resulted in over 45,000 evidence transactions, which track the chain of custody on the items of evidence. Through the efforts of the evidence clerks and the crime scene investigators, moving the evidence was accomplished smoothly.

The **Crime Scene Quality Assurance Unit** (3 staff) administers comprehensive training in crime scene processing to local law enforcement agencies as well as Indiana State Police crime scene investigators, provides quality assurance audits for all Indiana State Police evidence storage facilities, and provides proficiency testing and quality assurance assessments for Indiana State Police crime scene investigators. The unit assists the Indiana Law Enforcement Academy (ILEA) in certification of crime scene investigators for agencies throughout the state.

The Indiana Law Enforcement Academy Crime Scene Investigators Course, administered by the Indiana State Police Quality Assurance Unit, has graduated 213 students since its inception in 1999. The program is offered to all qualified Indiana police agency crime scene investigation personnel. Pictured to the right are students practicing fingerprinting at the school.



Training in forensic anthropology and forensic botany was hosted by the Indiana State Police in November. It was attended by 59 crime scene investigators from the Indiana State Police and other Indiana police agencies. The instructors were Dr. Steven Nawrocki and Susan Nawrocki both with the University of Indianapolis. Instruction was given on outdoor crime scenes involving skeletal remains, plants, and wildlife.

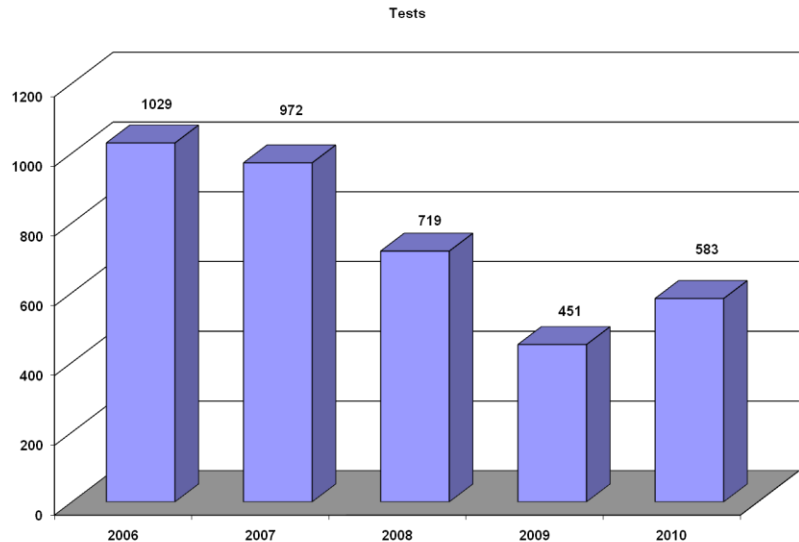
The Indiana State Police Evidence System Quality Assurance Program annually audits each of the 14 Indiana State Police evidence storage facilities. The unit participated in moving the evidence from Seymour, Terre Haute, Connersville, and Redkey when each of these posts were closed. Additionally, the unit semi-annually assesses the work of each of the Indiana State Police crime scene investigators.

The **Forensic Analysis Quality Assurance Unit** (1 staff) ensures compliance to laboratory and accreditation quality assurance standards. The unit maintains updated and secure quality assurance documentation, oversees the implementation and continued corrective action compliance, ensures laboratory adherence to proficiency testing requirements, ensures laboratory compliance to witness critique requirements, and develops and conducts quality assurance related training for laboratory staff.

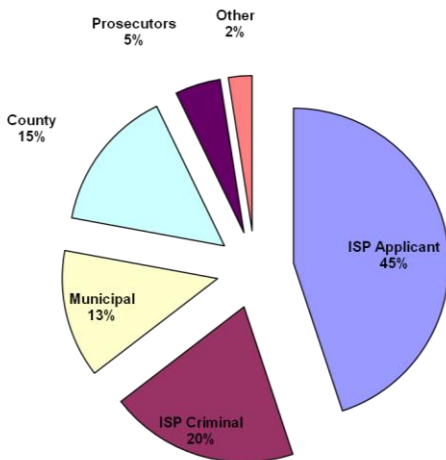
The laboratory is accredited by American Society of Crime Laboratory Directors/Laboratory Accreditation Board (ASCLD/LAB), the longest established crime laboratory accreditation program in the country. ASCLD/LAB accreditation is a voluntary program in which a crime laboratory that participates must demonstrate that its management, personnel, operational and technical procedures, equipment, and physical facilities meet established quality standards. During 2010 analysts in the laboratory successfully completed 257 proficiency tests and had 224 courtroom testimonies monitored.

The **Polygraph Unit** (5 staff) provides polygraph services to the Indiana State Police and other state, county, and local law enforcement agencies. Polygraph is used very extensively in child molestation investigations where a delay in reporting often results in no physical evidence being available.

The unit completed 583 tests during 2010. The number of pre-employment polygraphs for State Police, Commercial Vehicle Enforcement, and Capitol Police applicants was up from 13% of all tests in 2009 to 45% of all tests in 2010. The proportions of all the tests conducted in 2010 are shown in the chart below.



The Polygraph Unit also maintained the department’s leadership role in professional organizations by having three of its examiners elected into leadership positions in the Indiana Polygraph Association. This organization is devoted to professional training and enhanced standards of practice for the polygraph field.



The Polygraph Unit worked behind the scenes in many investigations and was able to help conclude some unique as well as high profile cases as exemplified below.

A municipality in central Indiana investigated an arson that led to the death of an elderly female. The investigators developed a suspect and he submitted to a polygraph examination by the Polygraph Unit. Following the polygraph examination, the suspect confessed to starting the fire at the apartment building and was subsequently arrested for murder and arson.

In the spring of 2010, a young girl was reported missing. Within hours, her body was found behind a shed on her parents’ property. Early in the investigation, detectives believed the stepfather of the young girl was involved in her death. During the pre-examination interview by the polygraph examiner, information was developed which led detectives to find physical evidence linking the stepfather to his stepdaughter’s homicide. The polygraph examination showed the stepfather was being deceptive in his answers relating to her death. The stepfather ultimately confessed to the murder during the polygraph examination.

The **Forensic Photography Unit** (2 staff) supports a statewide color uniform mug program, provides photography services for investigative personnel and the Public Information Division, and fulfills maintenance requirements for all of the department's photography equipment. The unit also processes film for the State Fire Marshal's Office and the Indiana Attorney General's Office. Digital images are uploaded from 14 different Indiana State Police Districts and the images are cataloged and archived for future reference.

The Photography Unit printed 2,425 investigative prints, 10,018 color reprints, and 20 mug photographs. Investigative prints are now routinely provided on CDs instead of hard copy photographs at a substantial cost savings. The decline in investigative prints shown in the graph below correlates to the increase in the number of images uploaded to the photo database. The photo database allows images to be previewed at the district locations. This has drastically reduced the number of photographs requiring printing. This year 158,105 digital images were entered into the photo database. There were 7 districts that entered more than 10,000 images for the year with District 16, Peru, entering 17,847.

