

U.S. Department of Justice
Federal Bureau of Investigation



THE FBI's COMBINED DNA INDEX SYSTEM PROGRAM

CODIS

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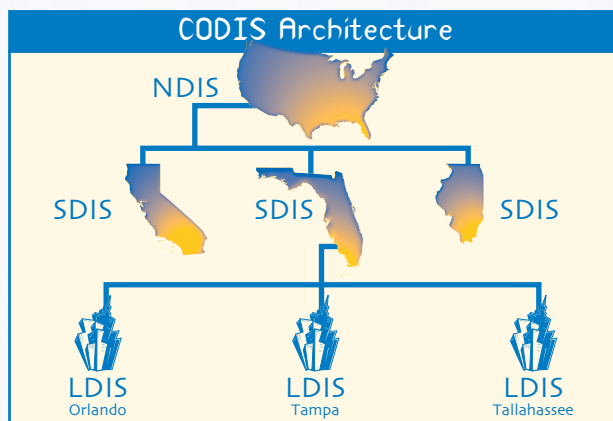
A Federal/State Partnership Fighting Violent Crime

MISSION

The FBI Laboratory's **CO**mbined **DNA** Index **S**ystem (CODIS) blends forensic science and computer technology into an effective tool for solving violent crimes. CODIS enables federal, state, and local crime labs to exchange and compare DNA profiles electronically, thereby linking crimes to each other and to convicted offenders.

BACKGROUND and STATUS

CODIS began as a pilot project in 1990 serving 14 state and local laboratories. The DNA Identification Act of 1994 (Public Law 103 322) formalized the FBI's authority to establish a national DNA index for law enforcement purposes. In October 1998, the FBI's National DNA Index System (NDIS) became operational. CODIS is implemented as a distributed database with three hierarchical levels (or tiers) – local, state, and national. NDIS is the highest level in the CODIS hierarchy, and enables the laboratories participating in the CODIS Program to exchange and compare DNA profiles on a national level. All DNA profiles originate at the local level (LDIS), then flow to the state (SDIS) and national levels. SDIS allows laboratories within states to exchange DNA profiles. The tiered approach allows state and local agencies to operate their databases according to their specific legislative or legal requirements.



The FBI provides CODIS software, together with installation, training, and user support, free of charge to any state and local law enforcement labs performing DNA analysis. Today, CODIS is installed in more than 100 laboratories. NDIS already contains more than 210,000 profiles from 24 states and the FBI. In addition, all 50 states have passed legislation authorizing the collection of biological samples from convicted offenders for DNA databasing.

INDEXES

CODIS generates investigative leads in crimes where biological evidence is recovered from the crime scene using two indexes: the forensic and offender indexes.



The **Forensic Index** contains DNA profiles from crime scene evidence.



The **Offender Index** contains DNA profiles of individuals convicted of sex offenses (and other violent crimes) with many states now expanding legislation to include other felonies.

Matches made among profiles in the Forensic Index can link crime scenes together; possibly identifying serial offenders. Based on a match, police in multiple jurisdictions can coordinate their respective investigations, and share the leads they developed independently. Matches made between the Forensic and Offender Indexes provide investigators with the identity of the perpetrator(s). After CODIS identifies a potential match, qualified DNA analysts in the laboratories responsible for the matching profiles contact each other to validate or refute the match.

DNA DATABASE LEGISLATION

On a parallel course with the acceptance of DNA evidence in the United States, states have enacted DNA database legislation requiring the collection of blood samples from convicted offenders and storage and analysis of such samples in State DNA databases.

In 1991, the FBI Laboratory issued Legislative Guidelines with recommended provisions to be included in State laws, such as definition, access and disclosure, compatibility, expungement, and penalties for unauthorized disclosure.

The complete coverage of State DNA database laws occurred in 1998 with all 50 states having enacted legislation. This legislation requires persons convicted of felony sex offenses (and other crimes, depending on each state's statute) to provide biological samples for DNA analysis. These samples are analyzed and entered into the CODIS database. The FBI hopes that eventually, all 50 states will include all felony offenses.

MEASURING SUCCESS

Ultimately, the success of the CODIS program will be measured by the crimes it helps solve. CODIS's primary metric, the "Investigation Aided" is defined as a case that CODIS assisted through a hit (a match produced by CODIS that would not otherwise have been developed). As of December 1999, CODIS has produced over 600 hits assisting in more than 1,100 investigations.

QUALITY ASSURANCE

The FBI takes an active role in assuring the quality of the results in the database. For example, the DNA Identification Act of 1994 established a DNA Advisory Board (DAB) to develop, revise, and recommend standards for quality assurance. The DAB fulfilled its mission by recommending two quality assurance documents to the Director of the FBI, resulting in the issuance of the *Standards for Forensic DNA Testing Labs* and *Standards for Convicted Offender Labs*.

THE FUTURE

There has been a sharp increase in the demand for CODIS services due to two factors – (1) advances in the technologies supporting human genome research and (2) increased awareness of the crime reduction potential of forensic DNA by executive and legislative bodies at the State, Local, and National levels, as well as by the general public. In fact, many law enforcement officials consider forensic DNA analysis the most significant advance in forensic science since fingerprints. As a result, states are rapidly expanding the scope and size of their CODIS databases.

Over the past five years about one-half of the States have expanded the scope of their original DNA database legislation (e.g., six states are including all felons in their database, in the past year about five States have expanded the scope of their legislation, and one State now covers all arrested persons). There is currently a backlog of over 500,000 convicted offender samples to be analyzed simply because a majority of states' analyses efforts are unable to keep pace with the collection of these samples. Plus, many labs are doing retests using the new STR technology. The FBI Laboratory is committed to building an infrastructure throughout the U.S. to support the CODIS program and will continue to work with State and local forensic laboratories to achieve the full potential of this investigative tool.

CODIS SUCCESS STORIES



FLORIDA & IOWA;

February 2000: In 1995, an unidentified woman's body was found on an off-ramp along an interstate in Des Moines, IA. After identifying the victim, police began looking at truck drivers as suspects, due to the location of the body. The Iowa Department of Public Safety sent biological evidence left at the crime scene to the FBI Laboratory for DNA analysis. The FBI Lab analyzed the evidence, and developed a DNA profile of the perpetrator. The profile was uploaded to CODIS, where NDIS matched it to the Florida offender. At the time of the hit, the offender was incarcerated in a Florida prison for a sexual assault conviction in early 1999. After identifying the offender, police discovered that he possessed a commercial trucking license.

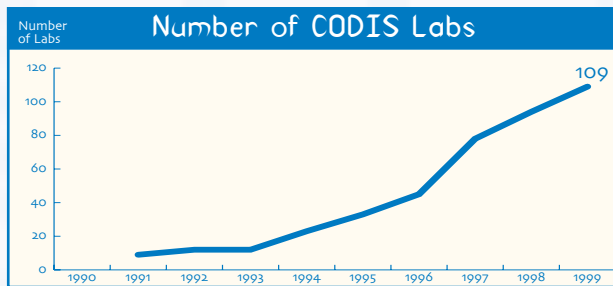
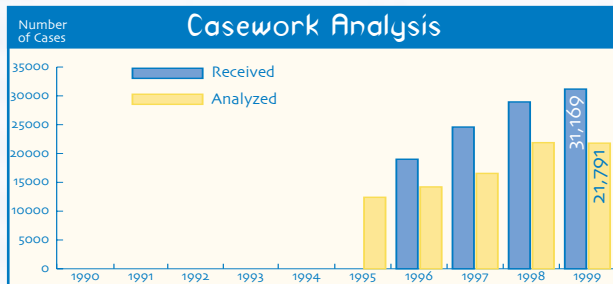
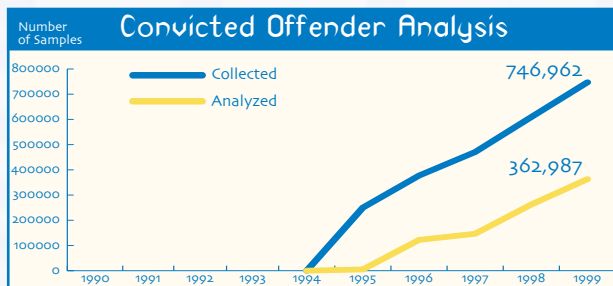
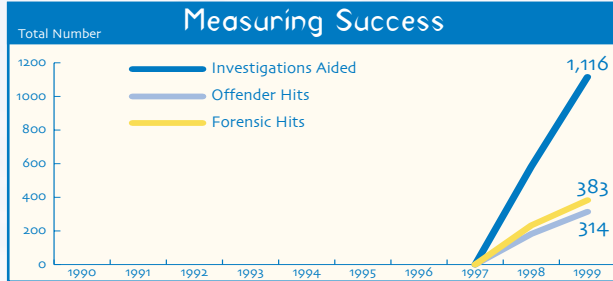
MISSOURI;

January 2000: In December 1997, the St. Louis Police Dept. had their first cold Forensic Hit using RFLP technology. The hit involved two 1996 cases where young girls were abducted from bus stops and raped. The cases occurred at opposite ends of the city, and police were unable to identify a suspect. In 1999, the St. Louis Police Dept. decided to re-run one of the cases using STR technology, hoping to develop new leads in the case. In January 2000, CODIS matched the reanalyzed 1996 case hit to a 1999 rape case. Dominic Moore, a suspect identified by police in the 1999 case, had confessed to the 1999 rape along with two other 1999 rapes. After the January 2000 CODIS hit, police were able to identify Moore as the perpetrator of the two 1996 rapes.

VIRGINIA;

March 1999: In October 1987, the Prince George County Police Department in Virginia responded to a phone call from a woman who said that she had been raped and stabbed. Police officers arrived at the woman's home shortly after the call was received, but the woman had already bled to death from multiple stab wounds. The Virginia Division of Forensic Science in Richmond developed a DNA profile from the evidence left at the crime scene. Twelve years later, CODIS matched the crime scene profile to the DNA profile of a convicted rapist who had been incarcerated in a Virginia prison since 1989.

CODIS STATISTICS



For more information, please contact the
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