

## A Team Effort

### THE CASE

The trail had gone cold on a vicious sexual assault.

A teenager in small-town Ontario was walking home one night in October of 1998. She was grabbed, dragged behind some trees and raped repeatedly. The attack was prolonged and violent.

The assault sparked terror in the region and police put six detectives on the case. Dozens of people were questioned and DNA samples were taken from more than twenty suspects. Not one of the suspects could be linked to the rape, however, and that only made the situation worse for community residents. With few leads to follow, the investigation slowly ground to a halt.

The detectives, refusing to give up the case, worked with the DNA specialist at Ontario's Centre of Forensic Sciences in Toronto, making sure that the DNA profile of the attacker had been entered into the Crime Scene Index of the National DNA Data Bank. This profile, along with 5000 other crime scene samples, would be routinely searched against all new cases as well as samples from convicted offenders.

### THE MATCH

In the fall of 2001, CODIS compared the known DNA profile of the convicted criminal with the thousands of unknown profiles in the Crime Scene Index. There was a match or "hit" between the 1998 crime scene profile and the newly submitted Convicted Offender profile.

This critical breakthrough was immediately relayed to the regional police through the Centre of Forensic Sciences in Toronto, where the crime scene evidence had originally been processed.

The suspect was arrested four days later at his home. A warrant was issued allowing police to seize a second DNA sample from him and subsequent

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## CASE STUDY I



### THE COURTS

Almost three years after the attack, a man in another part of Ontario was convicted of assault causing bodily harm. As required under the *Criminal Code*, the trial judge ordered the offender to provide a biological sample (blood, hair or mouth swab) for the Data Bank's Convicted Offender Index.

### THE NATIONAL DNA DATA BANK

The Data Bank operation is meticulous and highly automated. Once the biological samples are received, the donor identity is verified using fingerprints. All personal information is separated from the sample, which is then assigned a unique bar code number that is entered into a documentation control program called STaCS™ (Sample Tracking and Control System). From here on, the samples are anonymous and the privacy of the individual and resulting data is protected. STaCS™ combines scientific expertise with advanced robotics and information systems to process and track up to 96 samples at a time. The end result is a numeric

DNA profile based on 13 key "loci" or test sites for each sample, similar to a human identity bar code.

Anonymous to the staff of the Data Bank, the DNA profile of the convicted man was then entered into a database system known as CODIS (Combined DNA Index System). CODIS is the software that stores and compares DNA profiles using a secure network and an encryption process for communication between laboratories. Developed by the FBI and the U.S. Department of Justice and provided to the Data Bank at no cost, CODIS provides a universally accepted standard for forensic laboratories to compare DNA results. The system links the six RCMP forensic laboratories and the two provincial forensic science laboratories in Ontario and Quebec. This standardized approach allows law enforcement to cross-reference forensic DNA evidence across Canada and around the world. Sixteen foreign countries have accepted CODIS as their common format for comparing DNA results.

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"We had nothing connecting him," said the head of the investigation in a newspaper interview. "Without the DNA Data Bank, this predator would still be out there."

### THE RESULT

The man pleaded guilty to the attack and was sentenced to five years in prison.

"It's gratifying to see the system working so well in cases like these," said Sylvain Lalonde, CODIS Coordinator at the National DNA Data Bank. "It makes the link for local investigators but it can also save thousands of dollars in investigation and court costs when a suspect pleads guilty on the strength of the DNA evidence against him."

### MORE SUCCESS

The National DNA Data Bank, working closely with regional forensic laboratories, the police, and the courts, is heating up other investigations that