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**Final Grant Report  
No Suspect DNA Backlog Reduction for Connecticut  
Grant # 2002-DN-BX-K004**

Under the No Suspect DNA Backlog Reduction Program for 2001-2002, the State of Connecticut Forensic Science Laboratory, upon review of its DNA testing protocols and caseload, identified two areas that needed assistance and improvement:

- (1) **Processing Additional No-Suspect Cases.**  
It was estimated that approximately 300 backlogged no-suspect sexual assault cases and other violence against persons cases were awaiting STR analysis in the laboratory's archived "trace" materials. It was the goal of the laboratory to solve more serious violent crimes by examining more case materials.
- (2) **Additional Analytical Equipment**  
The human DNA quantitation method (QuantiBlot) at the time of application was labor intensive. We evaluated the Promega AluQuant system for casework DNA analysis, and found it considerably faster.

The goals for this project were achieved, in spite of the fact that we were unable to contract with an outside consultant to complete the clerical and organizational phases of this project.

**A. An Effective Plan for the analysis of DNA Evidence for No-suspect Cases in the State of Connecticut**

The processing of no-suspect cases will be carried out in three phases:

- |            |                                |
|------------|--------------------------------|
| Phase I:   | Case Identification and Review |
| Phase II:  | Sample Analysis and Search     |
| Phase III: | Inter-agency Coordination      |

Phase I, case identification and review, involved several steps to identify those cases suitable for DNA analysis and entry into the state and national database. The original proposal requested funds for a contractor to review case materials and determine those cases which would be suitable for additional screening for biological materials, if necessary, and subsequent DNA analysis. A subcontractor was identified who was well qualified for the work and a contract was written and submitted for approval to the Department of Administrative Services. Because of procedures and freezes placed on personal service contracts the application was not considered until September 2003. At that time we were required to interview any persons still on the state layoff list to see if they would qualify to complete those services. One person appeared to have sufficient training but was not comfortable working with biological materials; thus, state justification requirements and red tape prevented us from hiring this individual.

Step 1-3: In spite of the fact that the contract could not be awarded, the forensic science laboratory was able to review most of the no suspect materials on file in the laboratory as proposed. Laboratory personnel reviewed those file using overtime funds. A preliminary list of cases, prioritized on the basis of type of crime and the statutes of limitations was generated by this screening step.

- Approximately 580 case files were reviewed and checked against any biological materials that were stored at the laboratory.
- 268 cases were determined to be unsuitable for analysis because the materials had been consumed previously or no possible biological fluids were identified.
- Prior to any lab analysis, criminalists contacted submitting agencies to confirm that no suspect had been developed since the time of initial examination. Very few of the cases were eliminated by this step.
- Some cases that were negative for sperm at the time of initial examination were retested under this project. Because of the development of the more sensitive technique of RIA, samples that tested positive for AP were retested for p30 by ABACard®. This retesting led to the identification of additional samples from no suspect cases for testing.
- Scientists identified biological materials for analysis and forwarded these to other analysts for DNA processing.

Phase II, analysis of no-suspect case samples, was carried out using overtime hours and laboratory scientists. Tracking of overtime was done using a specific project number and a record of activities under that number was maintained.

Significant numbers of cases were analyzed, as previously reported during the course of the project. The following is a summary of case results:

- Cases analyzed for the DNA program included
  - 164 sexual assaults
  - 2 homicides
  - 5 violence against persons
  - 20 other (including terrorism/threatening, property, etc.)
- CODIS information
  - 128 samples entered into CODIS
  - 20 hits / cases associated

Before the CT Forensic Science Laboratory began the no suspect case backlog initiative, approximately 1 case / month hit against our offender database (limited to CT convicted sex offenders). The DNA backlog case reduction program resulted in an increase in this hit rate to more than 4 cases / month by the end of the term of the grant.

- Additional cases were in progress at the end of the grant period. Some of these cases had been through part of the process, but were not completed before 12/31/03. Those cases included:
  - 25 cases analyzed by one scientist but not confirmed or entered into CODIS
  - 30 cases screened for biological samples suitable for DNA analysis, semen confirmed, forwarded to DNA for processing.

Thus, (1) More than 250 cases were found suitable for analysis and tested.

While some DNA analyses were not completed by the end of the grant period, these cases were isolated, confirmed as no suspect evidence and tested for suitable biologicals.

- (2) In addition, more than 40 cases that had been tested prior to the availability of STR DNA analysis were reviewed and determined to have no materials available or suitable for STR testing. This is a valuable process in and of itself, since inquiries can now be answered as to whether there is any possibility of these cases going forward on the basis of STR profiles.

Phase III, inter-agency cooperation, is vital to the success of the no-suspect case reduction initiative. Several informational sessions were held to assist in prosecution of database samples.

- An informational session was held as an update for the State's Attorneys in Connecticut at the Chief State's Attorney's monthly meeting in December 2002 and March 2003. At those meetings, Major Palmbach and Chief State's Attorney Morano outlined the no-suspect project, briefly reviewed the laboratory analysis of no-suspect cases, and discussed the need for confirmation of the offender source for the "hit" report. The status of the backlog reduction program and information about the case "hits" were provided. State's attorneys were given the opportunity to ask questions concerning the backlog reduction and the CODIS process.
- The annual law update for the chiefs of police was used as an opportunity to review the no suspect program with the chiefs or their representatives; every municipality and the state police were represented at the updates. The informational session was also used to notify law enforcement of the lab's pursuit of the backlogged cases and to ask for support for future initiatives and offender database expansion. Elaine Pagliaro, Assistant Director, provided the update for the chiefs of police and their staff members.
- The laboratory provided information to various State agencies and legislators concerning the increased number of completed "cold" cases and the number of hits associated with this process. Those data were used in support of the legislation that led to the recently implemented expansion

of the offender database. In 2003, the CT legislature extended the requirement for collection of a DNA sample to all convicted felons incarcerated or under probation at the time the law took effect (Public Act 03-242); until this expansion, the CT legislature require only convicted sex offenders to provide samples for the database.

- The DNA Databank advisory board (representatives from the Office of the Attorney General, Department of Public Safety, Sex Offender Registry, Division of Corrections, Office of the Chief State's Attorney, Judicial, and Laboratory personnel) held quarterly meetings to discuss the progress of the no-suspect initiative and to assist the laboratory, when necessary, in the prioritization of cases and follow up on the prosecution. The Chief State's Attorney has established a liaison at his office who will work with the Assistant Director to oversee the prosecution of the cases and to keep all concerned parties informed of the progress and disposition of the cases. This liaison will assist the lab if confirmatory samples or other needed materials are not submitted in a timely fashion.
- The no-suspect initiative and search of the offender database resulted in the identification of a serial rapist among several communities in cases that were ten years old; the STR profiles developed from evidence in these four (4) cases were not associated with any individual in the offender databank. Members of the laboratory and the law enforcement agencies that originally investigated the cases have provided information to the Chief State's Attorney who is actively pursuing "John Doe" warrants in those cases.
- One (1) of the hits on a 12 year old homicide resulted in a meeting with the police department that identified five other homicides in the city that had similar *modus operandi* and that occurred around the same time. (Four of those cases had not been submitted to the lab for analysis at the time of the incidents.) Biological evidence has been analyzed in two additional cases thus far: one case resulted in a hit on a different CT offender; one case resulted in a full 13 locus STR profile, but no hit resulted when the profile was searched in CODIS.

**B. Equipment purchased and its value to the no suspect casework program.**

Equipment items were purchased to increase efficiency, to maintain appropriate quality, and to provide sufficient areas & materials to work backlog samples.

- (1) **Turner Luminometer:** Adoption of the Promega AluQuant human quantitation system has proven to be faster and more accurate than the standard ABI Quantiblot system previously employed. Approximately 50% of the no-suspect cases processed at the CT Forensic Science Laboratory had samples that would either not have detected any human

DNA or give an unreliable human DNA quantity with Quantiblot based on results obtained previously with similar samples. The superior features of AluQuant have significantly lowered the number of STR amplification that had to be performed.

- (2) Pipette Tracker calibrator: the purchase of the Artel equipment allows the lab to calibrate quickly and with the requisite accuracy so there is less down time. This product clearly enhanced the quality program in DNA, adding to the perceived reliability of the results obtained.
- (3) Centrifuge: the additional centrifuge and rotor increased capacity of the laboratory to process no suspect samples. This reduced wait time and increased productivity in the program.

Department of Public Safety

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Forensic Science Laboratory

July 1, 2003

Jan. 1, 2004

No Suspect DNA Casework Backlog  
Reduction Program FY 2001

\$117,163

Elaine M. Pagliaro, Asst. Director

March 15, 2004

1. case information:

a. *Case statistics:*

By Type of case:

- Sexual assaults: 164
- Homicide: 2
- Other violent crimes against persons: 5
- Other: 20 (burglary, threatening, terrorism)

2. CODIS information

# of cases analyzed and entered into CODIS: 128

# of cases with  $\geq 10$  loci: 0

# of cases with  $< 10$  loci: 1

# of CODIS hits: 11 persons in CT offender database

3 persons in out-of-state offender databases (Maine, Colorado & NY)

6 cases associated by no-suspect profile