

Appendices

Dr. Kessis's Report

Appendix

REPORT OF FINDINGS

People v. Gary Leiterman

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CV - Dr. Theodore D. Kessis

APPLIED DNA RESOURCES

Phone: 614-406-8136; 614-486-6934

Fax: 614-486-6935

E-Mail: applieddnaresources@columbus.rr.com

Theodore Dean Kessis, Ph.D.

Professional Experience	1998 - Present	Founder and Principal Applied DNA Resources Columbus, Ohio
	1998	Research Assistant Scientist The Johns Hopkins University School of Public Health, Department of Molecular Microbiology and Immunology, Baltimore, Maryland
	1996 – 1997	Research Associate The Johns Hopkins University School of Public Health, Department of Molecular Microbiology and Immunology, Baltimore, Maryland
	1994 - 1996	Associate The Johns Hopkins University School of Public Health, Department of Immunology and Infectious Disease, Baltimore, Maryland
	1993 - 1996	Postdoctoral Fellow The Johns Hopkins University School of Medicine, Department of Gynecologic Pathology
	1983 - 1989	Senior Research Technician The Johns Hopkins University School of Public Health, Department of Immunology and Infectious Disease, Baltimore, Maryland
Education	1993	Doctorate of Philosophy - Molecular Biology and Virology The Johns Hopkins University School of Public Health, Department of Immunology and Infectious Disease, Baltimore, Maryland

	1983	Bachelor of Science - Biological Sciences The Ohio State University Department of Biologic Sciences
Honors and Awards	1993 - 1996	Endowed Research Fellowship The Richard W. TeLinde Endowment, Department of Pathology, The Johns Hopkins University, School of Medicine, Baltimore, Maryland
	1990 - 1993	Post Certification Scholarship - Tuition and Stipend Award The Johns Hopkins University, School of Public Health, Department of Immunology and Infectious Disease, Baltimore, Maryland
	1991	Frederik B. Bang Award Outstanding Student Research in the Area of Pathobiology, The Johns Hopkins University, School of Public Health, Department of Immunology and Infectious Disease, Baltimore, Maryland
	1989 -1990	National Research Service Award Scholarship National Institutes of Health, Bethesda, Maryland

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DAB Standards



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Introduction

This document consists of definitions and standards. The standards are quality assurance measures that place specific requirements on the laboratory. Equivalent measures not outlined in this document may also meet the standard if determined to be sufficient through an accreditation process.

Mechanism to Recommend Changes to Standards

Once the Director of the FBI has issued standards for quality assurance for forensic DNA testing, the DNA Advisory Board may recommend revisions to such standards to the FBI Director, as necessary. In the event that the duration of the DNA Advisory Board is extended beyond March 10, 2000, by the FBI Director, the Board may continue to recommend revisions to such standards to the FBI Director. In the event that the DNA Advisory Board is not

extended by the FBI Director beyond March 10, 2000, the Technical Working Group on DNA Analysis Methods (TWGDAM) may recommend revisions to such standards to the FBI Director, as necessary.

Effective Date

These standards shall take effect October 1, 1998.

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**17. Subcontractor of Analytical Testing
for Which Validated Procedure Exist**

1. Scope

The standards describe the quality assurance requirements that a laboratory, which is defined as a facility in which forensic DNA testing is performed, should follow to ensure the quality and integrity of the data and competency of the laboratory. These standards do not preclude the participation of a laboratory, by itself or in collaboration with others, in research and development, on procedures that have not yet been validated.

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2. Definitions

As used in these standards, the following terms shall have the meanings specified:

Administrative review is an evaluation of the report and supporting documentation for consistency with laboratory policies and for editorial correctness.

Amplification blank control consists of only amplification reagents without the addition of sample DNA. This control is used to detect DNA contamination of the amplification reagents.

Analytical procedure is an orderly step-by-step procedure designed to ensure operational uniformity and to minimize analytical drift.

Audit is an inspection used to evaluate, confirm, or verify activity related to quality.

Calibration is the set of operations that establish, under specified conditions, the relationship between values indicated by a measuring instrument or measuring system, or values represented by a material, and the corresponding known values of a measurement.

Commercial test kit is a preassembled kit that allows the user to conduct a specific forensic DNA test.

Critical reagents are determined by empirical studies or routine practice to require testing on established samples before use on evidentiary samples in order to prevent unnecessary loss of sample.

Examiner/analyst is an individual who conducts and/or directs the analysis of forensic casework samples, interprets data, and reaches conclusions.

Forensic DNA testing is the identification and evaluation of biological evidence in criminal matters using DNA technologies.

Known samples are biological material whose identity or type is established.

Laboratory is a facility in which forensic DNA testing is performed.

Laboratory support personnel are individuals who perform laboratory duties and do not analyze evidence samples.

NIST is the National Institute of Standards and Technology.

Polymerase chain reaction (PCR) is an enzymatic process by which a specific region of DNA is replicated during repetitive cycles that consist of the

following:

- Denaturation of the template;
- Annealing of primers to complementary sequences at an empirically determined temperature; and
- Extension of the bound primers by a DNA polymerase.

Proficiency test sample is biological material whose DNA type has been previously characterized and is used to monitor the quality performance of a laboratory or an individual.

Proficiency testing is a quality assurance measure used to monitor performance and identify areas in which improvement may be needed. Proficiency tests may be classified as one of the following:

- *Internal proficiency test* is one prepared and administered by the laboratory.
- *External proficiency test*, which may be open or blind, is one that is obtained from a second agency.

A *qualifying test* measures proficiency in both technical skills and knowledge.

Quality assurance includes the systematic actions necessary to demonstrate that a product or service meets specified requirements for quality.

A *quality manual* is a document stating the quality policy, quality system, and quality practices of an organization.

Quality system is the organizational structure, responsibilities, procedures, processes, and resources for implementing quality management.

Reagent blank control consists of all reagents used in the test process without any sample. This is to be used to detect DNA contamination of the analytical reagents.

Reference material (certified or standard) is a material for which values are certified by a technically valid procedure and accompanied by or traceable to a certificate or other documentation that is issued by a certifying body.

Restriction fragment length polymorphism (RFLP) is generated by cleavage by a specific restriction enzyme, and the variation is due to restriction site polymorphism and/or the number of different repeats contained within the

fragments.

Review is an evaluation of documentation to check for consistency, accuracy, and completeness.

Second agency is an entity or organization external to and independent of the laboratory and which performs forensic DNA analysis.

Secure area is a locked space (e.g., cabinet, vault, or room) with access restricted to authorized personnel.

Subcontractor is an individual or entity having a transactional relationship with a laboratory.

Technical manager or leader (or equivalent position or title as designated by the laboratory system) is the individual who is accountable for the technical operations of the laboratory.

Technical review is an evaluation of reports, notes, data, and other documents to ensure an appropriate and sufficient basis for the scientific conclusions. This review is conducted by a second qualified individual.

Technician is an individual who performs analytical techniques on evidence samples under the supervision of a qualified examiner/analyst and/or performs DNA analysis on samples for inclusion in a database. Technicians do not evaluate or reach conclusions on typing results or prepare final reports.

Traceability is the property of a result of a measurement whereby it can be related to appropriate standards, generally international or national standards, through an unbroken chain of comparisons.

Validation is a process by which a procedure is evaluated to determine its efficacy and reliability for forensic casework analysis and includes the following:

- *Developmental validation* is the acquisition of test data and the determination of conditions and limitations of a new or novel DNA methodology for use on forensic samples.
- *Internal validation* is the accumulation of test data within the laboratory to demonstrate that established methods and procedures perform as expected in the laboratory.

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3. Quality Assurance Program

Standard 3.1. The laboratory shall establish and maintain a documented quality system that is appropriate to the testing activities.

3.1.1. The quality manual shall address, at a minimum, the following:

- Goals and objectives,
- Organization and management,
- Personnel qualifications and training,
- Facilities,
- Evidence control,
- Validation,
- Analytical procedures,
- Calibration and maintenance,
- Proficiency testing,
- Corrective action,
- Reports,
- Review,
- Safety, and
- Audits.

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4. Organization and Management

Standard 4.1. The laboratory shall do the following:

- Have a managerial staff with the authority and resources needed to discharge their duties and meet the requirements of the standards in this document;

- Have a technical manager or leader who is accountable for the technical operations; and
- Specify and document the responsibility, authority, and interrelation of all personnel who manage, perform, or verify work affecting the validity of the DNA analysis.

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5. Personnel

Standard 5.1. Laboratory personnel shall have the education, training, and experience commensurate with the examination and testimony provided. The laboratory shall do the following:

5.1.1. Have a written job description for personnel to include responsibilities, duties, and skills;

5.1.2. Have a documented training program for qualifying all technical laboratory personnel;

5.1.3. Have a documented program to ensure technical qualifications are maintained through continuing education; and

5.1.3.1. *Continuing Education:* The technical manager or leader and examiner/analyst(s) must stay abreast of developments within the field of DNA typing by reading current scientific literature and by attending seminars, courses, professional meetings, or documented training sessions/classes in relevant subject areas at least once a year.

5.1.4. Maintain records on the relevant qualifications, training, skills, and experience of the technical personnel.

Standard 5.2. The technical manager or leader shall have the following:

5.2.1. *Degree Requirements:* At a minimum, a master's degree in a biology-, chemistry-, or forensic science-related area and successfully complete a minimum of 12 semester or equivalent credit hours of a combination of undergraduate and graduate course work covering the subject areas of biochemistry, genetics, and molecular biology (molecular genetics,

recombinant DNA technology), or other subjects that provide a basic understanding of the foundation of forensic DNA analysis, as well as statistics and/or population genetics as it applies to forensic DNA analysis.

5.2.1.1. The degree requirements of section 5.2.1. may be waived by the American Society of Crime Laboratory Directors (ASCLD) or another organization designated by the Director of the FBI in accordance with criteria approved by the Director of the FBI. This waiver shall be available for a period of two years from the effective date of these standards. The waiver shall be permanent and portable.

5.2.2. *Experience Requirements:* A technical manager or leader of a laboratory must have a minimum of three years of forensic DNA laboratory experience.

5.2.3. *Duty Requirements:*

5.2.3.1. General: Manages the technical operations of the laboratory.

5.2.3.2. Specific:

- Is responsible for evaluating all methods used by the laboratory and for proposing new or modified analytical procedures to be used by examiners.
- Is responsible for technical problem solving of analytical methods and for the oversight of training, quality assurance, safety, and proficiency testing in the laboratory.

5.2.3.3. Accessibility: The technical manager or leader shall be accessible to the laboratory to provide onsite, telephonic, or electronic consultation as needed.

Standard 5.3. Examiner/analyst shall have the following:

5.3.1. *Degree Requirements:* At a minimum, a bachelor's

degree or its equivalent degree in biology-, chemistry-, or forensic science-related area and must have successfully completed college course work (graduate or undergraduate level) covering the subject areas of biochemistry, genetics, and molecular biology (i.e., molecular genetics, recombinant DNA technology) or other subjects which provide a basic understanding of the foundation of forensic DNA analysis, as well as course work and/or training in statistics and population genetics as it applies to forensic DNA analysis;

5.3.2. Experience Requirements: A minimum of six months of forensic DNA laboratory experience, including the successful analysis of a range of samples typically encountered in forensic case work prior to independent case work analysis using DNA technology; and

5.3.3. Successfully completed a qualifying test before beginning independent casework responsibilities.

Standard 5.4. Technicians shall have the following:

5.4.1. On-the-job training specific to their job function(s); and

5.4.2. Successfully completed a qualifying test before participating in forensic DNA typing responsibilities.

Standard 5.5. Laboratory support personnel shall have the following:

5.5.1. Training, education, and experience commensurate with their responsibilities as outlined in their job description.

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6. Facilities

Standard 6.1. The laboratory shall have a facility that is designed to provide adequate security and minimize contamination. The laboratory shall ensure the following:

6.1.1. Access to the laboratory is controlled and limited;

6.1.2. Prior to PCR amplification, evidence examinations, DNA extractions, and PCR setup are conducted at separate times or in separate spaces;

6.1.3. Amplified DNA product is generated, processed, and maintained in a room(s) separate from the evidence examination, DNA extractions, and PCR setup areas; and

6.1.4. The laboratory follows written procedures for monitoring, cleaning, and decontaminating facilities and equipment.

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7. Evidence Control

Standard 7.1. The laboratory shall have and follow a documented evidence control system to ensure the integrity of physical evidence. This system shall ensure the following:

7.1.1. Evidence is marked for identification;

7.1.2. Chain of custody for all evidence is maintained;

7.1.3. The laboratory follows documented procedures that minimize loss, contamination, and/or deleterious change of evidence; and

7.1.4. The laboratory has secure areas for evidence storage.

Standard 7.2. Where possible, the laboratory shall retain or return a portion of the evidence sample or extract.

7.2.1. The laboratory shall have a procedure requiring that evidence sample/extract(s) are stored in a manner that minimizes degradation.

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8. Validation

Standard 8.1. The laboratory shall use validated methods and procedures for forensic casework analyses.

8.1.1. Developmental validation that is conducted shall be appropriately documented.

8.1.2. Novel forensic DNA methodologies shall undergo developmental validation to ensure the accuracy, precision, and reproducibility of the procedure. The developmental validation shall include the following:

8.1.2.1. Documentation exists and is available that defines and characterizes the locus.

8.1.2.2. Species specificity, sensitivity, stability, and mixture studies are conducted.

8.1.2.3. Population distribution data are documented and available.

8.1.2.3.1. The population distribution data would include the allele and genotype distributions for the locus or loci obtained from relevant populations. Where appropriate, databases should be tested for independence expectations.

8.1.3. Internal validation shall be performed and documented by the laboratory.

8.1.3.1. The procedure shall be tested using known and nonprobative evidence samples. The laboratory shall monitor and document the reproducibility and precision of the procedure using human DNA control(s).

8.1.3.2. The laboratory shall establish and document match criteria on the basis of empirical data.

8.1.3.3. Before the introduction of a procedure into forensic casework, the analyst or examination team shall successfully complete a qualifying test.

8.1.3.4. Material modifications made to analytical procedures shall be documented and subject to validation testing.

8.1.4. Where methods are not specified, the laboratory shall, wherever possible, select methods that have been published by reputable technical organizations or in relevant scientific texts or journals or have been appropriately evaluated for a specific or unique application.

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9. Analytical Procedures

Standard 9.1. The laboratory shall have and follow written analytical procedures approved by the laboratory management/technical manager.

9.1.1. The laboratory shall have a standard operating protocol for each analytical technique used.

9.1.2. The procedures shall include reagents, sample preparation, extraction, equipment, and controls that are standard for DNA analysis and data interpretation.

9.1.3. The laboratory shall have a procedure for differential extraction of stains that potentially contain semen.

Standard 9.2. The laboratory shall use reagents that are suitable for the methods employed.

9.2.1. The laboratory shall have written procedures for documenting commercial supplies and for the formulation of reagents.

9.2.2. Reagents shall be labeled with the identity of the reagent, the date of preparation or expiration, and the identity of the individual preparing the reagent.

9.2.3. The laboratory shall identify critical reagents and evaluate them prior to use in casework. These critical reagents include but are not limited to the following:

- Restriction enzyme,
- Commercial kits for performing genetic typing,
- Agarose for analytical RFLP gels,

- Membranes for Southern blotting,
- K562 DNA or other human DNA controls,
- Molecular weight markers used as RFLP sizing standards,
- Primer sets, and
- Thermostable DNA polymerase.

Standard 9.3. The laboratory shall have and follow a procedure for evaluating the quantity of the human DNA in the sample where possible.

9.3.1. For casework RFLP samples, the presence of high-molecular weight DNA should be determined.

Standard 9.4. The laboratory shall monitor the analytical procedures using appropriate controls and standards.

9.4.1. The following controls shall be used in RFLP casework analysis:

9.4.1.1. Quantitation standards for estimating the amount of DNA recovered by extraction.

9.4.1.2. K562 as a human DNA control. (In monitoring sizing data, a statistical quality control method for K562 cell line shall be maintained.)

9.4.1.3. Molecular weight size markers to bracket known and evidence samples.

9.4.1.4. Procedure to monitor the completeness of restriction enzyme digestion.

9.4.2. The following controls shall be used for PCR casework analysis:

9.4.2.1. Quantitation standards that estimate the amount of human nuclear DNA recovered by extraction.

9.4.2.2. Positive and negative amplification controls.

9.4.2.3. Reagent blanks.

9.4.2.4. Allelic ladders and/or internal size markers for variable number tandem repeat sequence PCR-based systems.

Standard 9.5. The laboratory shall check its DNA procedures annually or whenever substantial changes are made to the protocol(s) against an appropriate and available NIST standard reference material or standard traceable to a NIST standard.

Standard 9.6. The laboratory shall have and follow written general guidelines for the interpretation of data.

9.6.1. The laboratory shall verify that all control results are within established tolerance limits.

9.6.2. Where appropriate, visual matches shall be supported by a numerical match criterion.

9.6.3. For a given population(s) and/or hypothesis of relatedness, the statistical interpretation shall be made following the recommendations 4.1, 4.2, or 4.3 as deemed applicable of the National Research Council report entitled *The Evaluation of Forensic DNA Evidence* (1996) and/or a court-directed method. These calculations shall be derived from a documented population database appropriate for the calculation.

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10. Equipment Calibration and Maintenance

Standard 10.1. The laboratory shall use equipment suitable for the methods employed.

Standard 10.2. The laboratory shall have a documented program for calibration of instruments and equipment.

10.2.1. Where available and appropriate, standards traceable to national or international standards shall be used for the

calibration.

10.2.1.1. Where traceability to national standards of measurement is not applicable, the laboratory shall provide satisfactory evidence of correlation of results.

10.2.2. The frequency of the calibration shall be documented for each instrument requiring calibration. Such documentation shall be retained in accordance with applicable federal or state law.

Standard 10.3. The laboratory shall have and follow a documented program to ensure that instruments and equipment are properly maintained.

10.3.1. New instruments and equipment, or instruments and equipment that have undergone repair or maintenance, shall be calibrated before being used in casework analysis.

10.3.2. Written records or logs shall be maintained for maintenance service performed on instruments and equipment. Such documentation shall be retained in accordance with applicable federal or state law.

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11. Reports

Standard 11.1. The laboratory shall have and follow written procedures for taking and maintaining case notes to support the conclusions drawn in laboratory reports.

11.1.1. The laboratory shall maintain, in a case record, all documentation generated by examiners related to case analyses.

11.1.2. Reports according to written guidelines shall include the following:

- Case identifier;
- Description of evidence examined;
- A description of the methodology;

- Locus;
- Results and/or conclusions;
- An interpretative statement (either quantitative or qualitative);
- Date issued;
- Disposition of evidence; and
- A signature and title, or equivalent identification, of the person(s) accepting responsibility for the content of the report.

11.1.3. The laboratory shall have written procedures for the release of case report information.

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12. Review

Standard 12.1. The laboratory shall conduct administrative and technical reviews of all case files and reports to ensure conclusions and supporting data are reasonable and within the constraints of scientific knowledge.

12.1.1. The laboratory shall have a mechanism in place to address unresolved discrepant conclusions between analysts and reviewer(s).

Standard 12.2. The laboratory shall have and follow a program that documents the annual monitoring of the testimony of each examiner.

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13. Proficiency Testing

Standard 13.1. Examiners and other personnel designated by the technical manager or leader who are actively engaged in DNA analysis shall undergo, at regular intervals of not to exceed 180 days, external proficiency testing in accordance with these standards. Such external proficiency testing shall be an open proficiency testing program.

13.1.1. The laboratory shall maintain the following records for proficiency tests:

- Test set identifier,
- Identity of the examiner,
- Date of analysis and completion,
- Copies of all data and notes supporting the conclusions,
- Proficiency test results,
- Any discrepancies noted, and
- Corrective actions taken.

Such documentation shall be retained in accordance with applicable federal or state law.

13.1.2. The laboratory shall establish at a minimum the following criteria for evaluation of proficiency tests:

- All reported inclusions are correct or incorrect.
- All reported exclusions are correct or incorrect.
- All reported genotypes and/or phenotypes are correct or incorrect according to consensus genotypes/phenotypes or within established empirically determined ranges.
- All results reported as inconclusive or uninterpretable are consistent with written laboratory guidelines. The basis for inconclusive interpretations in proficiency tests must be documented.
- All discrepancies/errors and subsequent corrective actions must be documented.
- All final reports are graded as satisfactory or

unsatisfactory. A satisfactory grade is attained when there are no analytical errors for the DNA profile typing data. Administrative errors shall be documented and corrective actions taken to minimize the error in the future.

- All proficiency test participants shall be informed of the final test results.

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14. Corrective Action

Standard 14.1. The laboratory shall establish and follow procedures for corrective action whenever proficiency-testing discrepancies and/or casework errors are detected.

14.1.1. The laboratory shall maintain documentation for the corrective action. Such documentation shall be retained in accordance with applicable federal or state law.

15. Audits

Standard 15.1. The laboratory shall conduct audits annually in accordance with the standards outlined herein.

15.1.1. Audit procedures shall address, at a minimum, the following:

- Quality assurance program,
- Organization and management,
- Personnel,
- Facilities,
- Evidence control,
- Validation,
- Analytical procedures,
- Calibration and maintenance,
- Proficiency testing,

- Corrective action,
- Reports,
- Review,
- Safety, and
- Previous audits.

15.1.2. The laboratory shall retain all documentation pertaining to audits in accordance with relevant legal and agency requirements.

Standard 15.2. Once every two years, a second agency shall participate in the annual audit.

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16. Safety

Standard 16.1. The laboratory shall have and follow a documented environmental health and safety program.

17. Subcontractor of Analytical Testing for Which Validated Procedures Exist

Standard 17.1. A laboratory operating under the scope of these standards will require certification of compliance with these standards when a subcontractor performs forensic DNA analyses for the laboratory.

17.1.1. The laboratory will establish and use appropriate review procedures to verify the integrity of the data received from the subcontractor.

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Appendix (3)

REPORT OF FINDINGS

People v. Gary Leiterman
No. 04-2017-FC

Exemplars - Corrective Action File



ORCHID
CELLMARK

Report of Quality Problem Corrective Action and Preventive Action

Date	Check one	Routing: Signature/Date
Case No.: [REDACTED]	Customer-related	QA Manager: [Signature] 01/23/03
	X Lab. or Casework-related	Director, Technical FS: [Signature]
	Safety-related	Other(s): [Signature]
	Other	

DESCRIPTION OF DEFICIENCY

The victim standard sample for [REDACTED] was contaminated with DNA from the victim standard sample for [REDACTED]. After evaluating the situation, it was determined that the contamination most likely occurred during the extraction or preparation for slot blot step. This was determined due to the following facts: The samples were extracted adjacent to one another; [REDACTED] was concentrated while [REDACTED] was not; the samples were not amplified adjacent to one another; the samples were run on a 377 gel with other samples in between.

Assigned to: Elizabeth Ballard	Date: 01/06/03
Response Due Date: 01/14/03	

CORRECTIVE ACTION (Include the impact of deficiency, if any, on past work and corrective action taken)

The victim standard for [REDACTED] was re-extracted, amplified and run.

CA taken by: [Signature]	Date: 1-14-03
--------------------------	---------------

Attach Action Plan for significant or protracted Corrective Action, if needed. Attach or cite evidence that Corrective Action has been successfully completed.

Date Plan accepted:	Supervisor/Lab. Director and QA Manager (initials):
Date CA completed:	Supervisor/Lab. Director (signature):

PREVENTIVE ACTION

Elizabeth will take extreme care in the future so as not to allow for contamination. Extra attention will be paid to details such as changing pipet tips between samples, opening only one tube at a time, and changing gloves often throughout the process.

PA taken by: [Signature]	Date: 01/14/03
Supervisor/Lab. Director (signature): [Signature]	Date: 1-20-03

Report of Quality Problem

Date: <u>3/25/02</u>
Case No: <u>Various</u>
Spec attached below
Extraction batch # <u>8130</u>
ES 5/25/02

CHECK ONE
<input checked="" type="checkbox"/> Customer-related
<input checked="" type="checkbox"/> Laboratory or casework-related
<input type="checkbox"/> Safety-related
<input type="checkbox"/> Other

SIGNATURE/DATE - ROUTING
<u>Brandi L. St. O. A Manager</u>
<u>Jeanne P. Lab Director(s)</u>
<u>Deputy Director</u>
<u>General Manager</u>
<u>Lia) Forensic Supervisor</u>
<u>Accounting</u>
<u>Marketing/Sales</u>
<u>Others</u>

Describe situation - being specific about events causing the problem.
Specify name and type of customer, if appropriate.

Victim standards, suspect standards, and evidence samples were extracted together in Chelms extraction batch # 8130. However, no evidence or standards from the same case were extracted together.

CORRECTIVE ACTION : What actions were taken to remedy the situation or assist the customer?

I met Jennifer Reynolds of the situation. The evidence profiles were compared against all standards profiles to check for contamination. The profiles were clean; the standards profiles were checked to make sure they were clean.

PREVENTIVE ACTION : What can be done to prevent reoccurrence of the problem described?

Received SOP P050 "Laboratory Setup for PCR Analysis".

Be aware to keep evidence and standard separate when processing.

ADDITIONAL COMMENTS:

Submitter's signature Ryan Pottebaum
CELLMARK DIAGNOSTICS\Cellmark User Manual\QUALITY.RPT

Date 3/25/02

Report of Quality Problem

3/26/02
No. [REDACTED]

CHECK ONE

Customer-related
 Laboratory or casework-related
 Safety-related
 Other

SIGNATURE/DATE - ROUTING

[Signature] 3-26-02 QA Manager ✓
[Signature] 3-26-02 Lab Director(s) ✓ (LWD)
Deputy Director
General Manager
Forensic Supervisor
Accounting
Marketing/Sales
[Signature] 3-26-02 Others (LWD) ✓

Describe situation - being specific about events causing the problem. Identify name and type of customer, if appropriate.

JA from hair root extraction tube was added to filter amp tube for hair shaft sample (O1c). Sample in shaft extraction tube was added to root amp tube (O1c). This resulted in profile obtained from the shaft control and no profile (O1c) for the root sample. Involves analyst + witness error.

CORRECTIVE ACTION : What actions were taken to remedy the situation or assist the customer?

Sample - O1 and O1s were re-amplified for O1c.

PREVENTIVE ACTION : What can be done to prevent reoccurrence of the problem described?

• Double check samples for transfer.

ADDITIONAL COMMENTS:

Profile Plus profiles for O1 + O1s were okay.
D3 and D7 for O1P matched D3 and D7 results for O1c.

Submitter's signature Lori H. Measuring Date 3/26/02
CELLMARK DIAGNOSTICS\Cellmark\Other data\AD-S10QUALITY.RPT



ORCHID
CELLMARK

Report of Quality Problem Corrective Action and Preventive Action

Date: 03.14.03	Check one	Routing: Signature/Date
Case No.: [REDACTED]	<input type="checkbox"/> Customer-related	QA Manager: <i>Jennifer Konkel 3.17.03</i>
	<input checked="" type="checkbox"/> Lab. or Casework-related	Director, Technical F.S.
	<input type="checkbox"/> Safety-related	
	<input type="checkbox"/> Other	Other(s):

DESCRIPTION OF DEFICIENCY

On February 19, 2003, amplified sample tubes labeled " [REDACTED] 01E2 B" and " [REDACTED] 01E2 C" were inadvertently switched during 310 sample preparation. Jennifer Konkel was the scientist with Lyn Belisle as the "Samples to List" witness.

Assigned to: Jennifer L. Konkel	Date: 03.14.03
Response Due Date: 03.21.03	

CORRECTIVE ACTION (Include the impact of deficiency, if any, on past work and corrective action taken)

Samples were re-run on February 25, 2003 with Jennifer Konkel as the scientist.

CA taken by: <i>Jennifer Konkel</i>	Date: 03.14.03
-------------------------------------	----------------

Attach Action Plan for significant or protracted Corrective Action, if needed. Attach or site evidence that Corrective Action has been successfully completed.

Date Plan accepted:	Supervisor/Lab. Director and QA Manager (initials):
Date CA completed: 2/25/03	Supervisor/Lab. Director (signature): <i>Jennifer Konkel P.E.C.</i>

PREVENTIVE ACTION

Be more observant to sample order during preparation and witnessing.

PA taken by: <i>Jennifer Konkel & Lyn Belisle</i>	Date: 03.14.03
Supervisor/Lab. Director (signature): <i>Jennifer Konkel</i>	Date: 3/14/03

Report of Quality Problem

Date: 4-17-02
Case No: [REDACTED]

CHECK ONE

Customer-related
 Laboratory or casework-related
 Safety-related
 Other

SIGNATURE/DATE - ROUTING

LSR 5-3-02 QA Manager
DML 5-3-02 Lab Director(s)
Deputy Director
General Manager
Forensic Supervisor
Accounting
Marketing/Sales
Others

Describe situation - being specific about events causing the problem.
Specify name and type of customer, if appropriate.

The Cifler sample [REDACTED]-02 appeared to be uncontaminated b/c it was a mixture, while the Profiler Plus of the same sample appeared to be a single source sample

CORRECTIVE ACTION : What actions were taken to remedy the situation or assist the customer?

Both the Cifler and the Profiler Plus of this sample were re-amplified and upon amplification both appeared to be single source, clean samples with no contamination. The original contaminated sample was re-run on 377A to confirm that the contamination didn't occur during sample prep. The contamination seen in the sample was checked against lab staff, and other samples to try and find the source of the contamination, but no source was found.

PREVENTIVE ACTION : What can be done to prevent reoccurrence of the problem described?

Be sure to follow all proper SOP's for evidence handling and amplification of samples

ADDITIONAL COMMENTS:

Submitter's signature Leslie R. Lewis Date 4-17-02
CELLMARK DIAGNOSTICS\Cellmark\user\data\LABS\QUALITY.RPT

Report of Quality Problem

Date: <u>3/25/02</u> Case No: <u>Various</u> See attached check sheet from batch # 8079	CHECK ONE <input type="checkbox"/> Customer-related <input checked="" type="checkbox"/> Laboratory or casework-related <input type="checkbox"/> Safety-related <input type="checkbox"/> Other	SIGNATURE/DATE - ROUTING <u>JAN 25 2002</u> QA Manager <u>Apr 2002</u> Lab Director(s) Deputy Director General Manager <u>LA</u> Forensic Supervisor Accounting Marketing/Sales Others
---	--	---

Describe situation - being specific about events causing the problem.
Specify name and type of customer, if appropriate.

Victim standards, suspect standards, and evidence samples were extracted together in this extraction batch # 8079. However, no evidence or standards from the same case were extracted together.

CORRECTIVE ACTION : What actions were taken to remedy the situation or assist the customer?

Informed Jennifer Reynolds of the situation. The evidence profiles were compared against all standards profiles to check for contamination. The profiles were clean; the standards profiles were checked to make sure they were clean.

PREVENTIVE ACTION : What can be done to prevent reoccurrence of the problem described?

Reviewed SOP POSO "Laboratory Setup for PCR Analysis"
Be aware to keep evidence and standards separate when processing samples.

ADDITIONAL COMMENTS:

Submitter's signature Ryan Satche
CELLMARK DIAGNOSTICS\Cellmark Molecular Quality APT

Date 3/25/02

Report of Quality Problem

Date: 8/29/02
Case No: [REDACTED]

CHECK ONE

Customer-related
 Laboratory or casework-related
 Safety-related
 Other

SIGNATURE/DATE - ROUTING

Aug 29/02 QA Manager
Aug 29/02 Lab Director(s)
____ Deputy Director
____ General Manager
____ Forensic Supervisor
____ Accounting
____ Marketing/Sales
____ Others

Describe situation - being specific about events causing the problem.
Specify name and type of customer, if appropriate.

- 1) Evidence sample 05 was being used as a standard in this case. Samples 03(vaginal swab) and 04(vaginal swab) were extracted with sample 05(cervical swab).
- 2) RB#2 0731Q2 C was ramped at 1ul when it should have been ramped at 1.5ul. Samples 03E2C, 04E2C, and 05E2 C were all affected by this RB.

CORRECTIVE ACTION: What actions were taken to remedy the situation or assist the customer?

- 1) Once samples 03(vag. swab), 04(vag. swab), and 05(cerv. swab) all came from the same person and all of the types matched in both PP+C, sample 05 will be used as a standard.
- 2) More care will be taken in the future when amping RB's

PREVENTIVE ACTION: What can be done to prevent reoccurrence of the problem described?

In the future more care should be taken when extracting evidence and standards, and amping RB's

ADDITIONAL COMMENTS:

Submitter's signature James K. Bef Date 8/29/02
CELMARK DIAGNOSTICS INC. QUALITY RPT

Report of Quality Problem

- Date: <u>3-26-02</u> Case No.: <u>[REDACTED]</u>	CHECK ONE <input type="checkbox"/> Customer-related <input checked="" type="checkbox"/> Laboratory or casework-related <input type="checkbox"/> Safety-related <input type="checkbox"/> Other	SIGNATURE/DATE - ROUTING <u>JRC</u> <u>3-26-02</u> QA Manager <u>JRC</u> <u>3-26-02</u> Lab Director(s) <u>JRC</u> <u>3-26-02</u> Deputy Director <u>JRC</u> <u>3-26-02</u> General Manager <u>JRC</u> <u>3-26-02</u> Forensic Supervisor <u>JRC</u> <u>3-26-02</u> Accounting <u>JRC</u> <u>3-26-02</u> Marketing/Sales <u>JRC</u> <u>3-26-02</u> Others
---	--	--

Describe situation - being specific about events causing the problem.
Specify name and type of customer, if appropriate.

This case had a PP E2 that appeared to be a big star while the Coflier of the same E2 was only a slight star. Because the PP E2 looked bad and the results were off, a deduced profile was made using only Coflier data only. At the request of Mike Brown from Metro East, this case was looked into for further questioning to why PP results weren't reported. Further testing and investigation into the matter showed the original PP E2 was in fact contaminated by an analyst at Orchid Cellmark.

CORRECTIVE ACTION : What actions were taken to remedy the situation or assist the customer?

After plus E2 was re-injected on the bio to confirm that the contamination was not from my PP prep. The sample was then re-amplified in both systems, as well as re-cut and re-extracted. re-cut/re-extracted sample was ampl'd in both systems, and this data was used to create an amended report, and tables. The original E2 that was re-ampl'd in both systems, was used to help determine what the original contaminant was from, and as an additional information that the final data reported is good, valid data.

PREVENTIVE ACTION : What can be done to prevent reoccurrence of the problem described?

Better communication between the first and second reviewer, specifically by ^{making sure} having ~~having~~ only one all changes made to the table and report by the second reviewer looked over and discussed with the first reviewer before a final report is made and sent out will help prevent questionable results going out for a final report. This has already been implemented via ^{gfe} implementation to our paperwork check sheet for in contract cases ^{gfe}

ADDITIONAL COMMENTS: The Coflier results originally reported were shown to be good data that was replicated upon re-amplification and re-testing of the sample therefore despite the fact that only one plus system was reported, the results that were questionable and should not have been reported, were not reported, and the results submitted ^{from} were fine.

An amended report is being sent to LC on 3/29/02. JRC ^{to CODIS} JRC

Submitter's signature Kylie R. Frazier Date 3-26-02
CELLMARK DIAGNOSTICS\Cellmark User Data & Quality.RPT

Memo

To: Staci Bennett *AK 7.17.05*
From: Jacquelyn Kuriger
CC: Ann Gross *JMK*
Date: April 29, 2005
Re: S04-09900 Contamination (extracted 1/18/05)

Identification of the problem: A weak profile that indicated a mixture was obtained from one sample in this case. A search of the employee database revealed that the predominant profile in this mixture matches BCA Laboratory employee 000053. This profile was not detected in any of the other samples extracted in this case, in other cases on the same day, or in any of the controls.

Actions taken: The sample was reextracted. The result was that no DNA profile was obtained. The entire biology laboratory including the extraction and amplification areas was thoroughly cleaned. The laboratory adopted a policy of monthly cleaning of all laboratory surfaces with 10% bleach and ethanol. The employee that matched this predominant profile is now wearing a mask while working in the laboratory.

All data showing the profile obtained and the results from the search of the employee database is attached.

State Match Detail Report
Match Date: 02/19/2005 12:04

Locus	Target MNBCA0000 QS04-09900-6B KEYBOARD	Candidate MNBCA0000 EMP-00053 Employee	Locus Match Stringency
D8S1179	12, 13, 16	13, 16	Moderate
D21S11	28, 29	29	Moderate
D7S820	9, 10	9, 10	High
CSF1PO	10, 11	10, 11	High
D3S1358	14, 16, 18	14, 16	Moderate
TH01	6, 8, 9	8, 9	Moderate
D13S317	10, 12	12	Moderate
D16S539	11	11	High
D2S1338	18, 19		
D19S433	10, 13, 16		
vWA	16, 17	17	Moderate
TPOX	10, 11	10, 11	High
D18S51	16	16	High
D5S818	12, 13	12, 13	High
FGA	20	20	High
Amelogenin		X	

Source ID:	N/A	N/A
Partial Profile:	No	No
Disposition:	Candidate Match	Candidate Match
Invest. Aided:	0	0

Match Summary:

13 Locus Candidates: 1
 Total Candidates: 1

Match Details:

13 Loci Match
 Match Stringency: Moderate
 Search Program: Searcher

Minimum number of loci required to report a match: 8
 Include Candidate specimens that match on all but 3 loci.
 Maximum number of candidates to return from search: 0

Index	Total Searched
Employee	114
Totals	114

Match Detail Report
Match Date: 02/19/2005 11:59

Locus	Target MNBCA0000 QS04-09900-6A KEYBOARD	Candidate MNBCA0000 EMP-00019 Employee	Locus Match Stringency
D8S1179	13, 14	13	Moderate
D3S1358	14, 15, 16, 17, 18	15	Moderate
TH01	6, 7, 9, 3	6	Moderate
D16S539	9, 10, 12	9, 12	Moderate
D19S433	10, 2, 13, 14, 14, 2	14, 14, 2	Moderate
vWA	14, 15, 16	15, 19	Not a match
TPOX	6, 8, 11	8	Moderate
D5S818	11, 12, 13	11, 12	Moderate
Amelogenin		X	
CSF1PO		10, 12	
D13S317		12	
D18S51		15, 20	
D21S11		29, 30	
D7S820		11	
FGA		21, 23	
D2S1338		17	

Source ID:	N/A	N/A
Partial Profile:	No	No
Disposition:	Candidate Match	Candidate Match
Invest. Aided:	0	0

Match Summary:

7 Locus Candidates: _____ 2
 Total Candidates: _____ 2

Match Details:

7 Loci Match
 Match Stringency: Moderate
 Search Program: Searcher
 Minimum number of loci required to report a match: 7
 Include Candidate specimens that match on all but 1 loci.
 Maximum number of candidates to return from search: 0

Index	Total Searched
Employee	114
Totals	114

State Match Detail Report
Match Date: 02/19/2005 11:59

Locus	Target MNBKA0000 QS04-09900-6A KEYBOARD	Candidate MNBKA0000 EMP-00109 Employee	Locus Match Stringency
D8S1179	13, 14	14	Moderate
D3S1358	14, 15, 16, 17, 18	16	Moderate
TH01	6, 7, 9, 3	6, 9, 3	Moderate
D16S539	9, 10, 12	9, 12	Moderate
D19S433	10, 2, 13, 14, 14, 2	14, 17	Low
vWA	14, 15, 16	17	Not a match
TPOX	6, 8, 11	11	Moderate
D5S818	11, 12, 13	11	Moderate
Amelogenin		X, Y	
CSF1PO		12, 13	
D13S317		8, 12	
D18S51		11, 16	
D21S11		29, 30	
D7S820		7, 9	
FGA		21, 24	
D2S1338		17, 25	

Source ID:	N/A	N/A
Partial Profile:	No	No
Disposition:	Candidate Match	Candidate Match
Invest. Aided:	0	0

Match Details:

7 Loci Match

Match Stringency: Low

Search Program: Searcher

Minimum number of loci required to report a match: 7

Include Candidate specimens that match on all but 1 loci.

Maximum number of candidates to return from search: 0

Index	Total Searched
Employee	114
Totals	114

not a match.
 No match to batch!
 cont los JMK

Appendix (4)

REPORT OF FINDINGS

People v. Gary Leiterman

No. 04-2017-FC

Exemplars - Laboratory Error

The Arizona Republic

Phoenix police lab errs on DNA

9 cases under review after mistakes found

Carlos Miller

The Arizona Republic

May. 6, 2003

Phoenix police crime lab technicians blundered nine cases while analyzing DNA evidence to be used against murder, rape and aggravated assault suspects.

The errors, which dated to August 2001, were made when the technicians miscalculated the likelihood that a person's DNA, or genetic material, was present on evidence.

Although the discovery leaves the fate of the nine suspects in limbo, police said they have plenty of other evidence, including witness statements, confessions, gunshot residue and other DNA samples.

"I don't expect any of these people to get out of jail or prison," Phoenix police Sgt. Randy Force said.

Maricopa County Attorney Rick Romley, who was informed of the situation last week, is reviewing the cases. Defense attorneys, meanwhile, are informing their clients of the lab mistakes.

Two of the suspects have pleaded guilty and were sent to prison. A third suspect was sent to prison after a jury found him guilty. Charges were never filed against a fourth suspect and five other suspects are awaiting trial.

Police said insufficiently trained lab technicians using a rare method of DNA testing were to blame for the "statistical computation errors." The method, called the "likelihood ratio system," involves the use of swabs on pieces of evidence. It is used in fewer than 10 percent of the department's cases involving DNA sampling, Force said.

Some agencies prefer not to use it because it can be difficult to explain to a jury in layman's terms, he said.

Unlike the standard methods of DNA sampling, in which lab technicians analyze samples of blood or semen that originate from a single source, the likelihood ratio system analyzes objects that have been handled by several people.

As a result, lab technicians may end up analyzing DNA from several people before determining whether the suspect can be linked to the crime.

Once a suspect's DNA is isolated from a piece of evidence, technicians use a

mathematical computation to determine the likelihood that a suspect committed a crime by using five categories, ranging from "limited evidence to support" the case to "very strong evidence to support" it.

This is when technicians erred.

In one of the nine cases, in which a murder suspect is awaiting trial, evidence against him went from "very strong" to "limited." Evidence against another man, who is also awaiting trial on murder charges, went from "very strong" to "moderate." The names of the suspects were not released.

The blunders came to light last week after a lab supervisor discovered an error in one of the cases, prompting officials to go back three years to when the lab began analyzing DNA samples. It reviewed about 40 cases that entailed the likelihood ratio system.

"It's an honest mistake made with the best intentions," said Susan Narveson, administrator of the department's crime lab.

Police said they have taken measures to ensure this will not happen again, including inviting outside auditors to review lab operations.

"The goal of the crime lab is to guarantee 100 percent accuracy, 100 percent of the time," Force said. "We have fallen short of that goal."

Reach the reporter at carlos.miller@arizonarepublic.com or (602) 444-8208.

Junk Science

Truth in Justice

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Story last updated at 8:42 a.m. Thursday, June 5, 2003

KBI director apologizes for evidence mixup in suspect's DNA

TOPEKA (AP) -- The director of the Kansas Bureau of Investigation apologized Wednesday for the agency's handling of a piece of evidence 12 years ago involving a man who now faces several counts of murder.

In a statement, Larry Welch said the apparent mismarking of a blood sample belonging to Douglas S. Belt in October 1991 may have contributed to a "significant delay" in identifying Belt as a suspect in several sexual crimes.

As a result, Welch said in the statement, the investigation moved away from Belt. He called the mistake "simply a case of human error. Even the best people aren't perfect."

He added, "The even more terrible consequences are the later, additional crimes Mr. Belt has been charged with committing." Welch has scheduled a Thursday news conference in Topeka to discuss the issue.

Belt, 42, of Wichita, is being held in the Sedgwick County Jail on a charge of first-degree murder in the June 2002 killing and decapitation of Lucille Gallegos, 43, at the apartment complex where she worked as a maid.

Months after his arrest last November, Belt was charged with seven rapes that took place between 1989 and 1994 in four Kansas counties, including one in Thomas County.

Belt also was charged Dec. 20 in Madison County, Ill., with three counts of aggravated criminal sexual assault stemming from a Nov. 22, 1992, attack on a 21-year-old mother of two near Granite City, Ill.

Before Wednesday's announcement and apology, KBI spokesman Kyle Smith said a DNA sample from Belt received on Jan. 17, 2002, had not been processed. That sample arrived at the KBI lab five months before

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Gallegos' death.

Belt was on probation at the time for a 1990 burglary. As a convicted felon, he was required by state law to provide fingerprints, blood and saliva samples. Smith said Belt's was one of nearly 30,000 samples received by the KBI.

According to the Department of Corrections, Belt has been convicted in Kansas three times between October 1995 and March 1999.

Welch said additional safeguards would be put in place at the KBI lab though use of an automated information management system.

On the Net:

Kansas Bureau of Investigation:
<http://www.ink.org/public/kbi>

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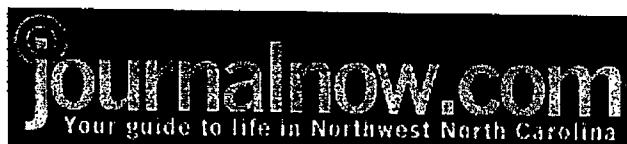
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Sunday, August 28, 2005

DNA mislabeled in murder case

Error at SBI lab erases key part of the state's case, but trial is set to proceed for woman charged in killing her mother

By Phoebe Zerwick
JOURNAL REPORTER

GREENVILLE - On the Sunday before her death, Arlene Lincoln and her son, Duffy, watched N.C. State play Connecticut in the NCAA basketball tournament.

Duffy Lincoln left about 4:30, after State had lost. His sister, Leslie, stopped by later. She was the last person known to have seen Arlene Lincoln alive.

The next night, March 18, 2002, Duffy Lincoln found his mother's body on the floor by the bed. There was a deep stab wound in her neck. She was 74.

Within a week, the police were

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focused on Leslie Lincoln as the suspect. They arrested her six months later with information from confidential informants.

The clincher came in July 2003, more than a year after the crime, when a DNA report came back. A bloodstain on her mother's bedsheets matched Leslie's DNA.

The evidence seemed to seal the case - even for those who wanted to believe that she was innocent.

"When it first came back ... I really was thinking, 'She must have done this,'" said Sharla Lincoln, Leslie Lincoln's sister-in-law. "You think something coming out of the state lab is going to be right. Knowing how much DNA means to people now, if the DNA says you did it, then you did it."

Except the lab was wrong.

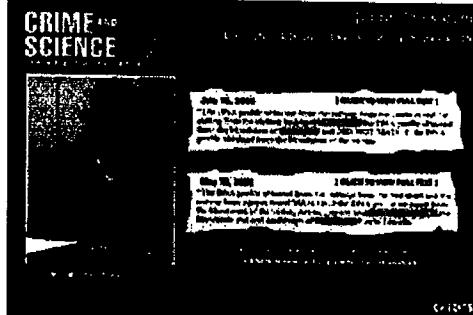
The test tubes holding the DNA samples had been mislabeled. The evidence actually showed that the blood on Arlene Lincoln's bed was her own.

Today, Duffy Lincoln believes that police focused on his sister as the prime suspect for the simple reason that she was the last to see their mother alive. What he doesn't understand is why prosecutors decided to charge Leslie Lincoln with murder and try her for her life, and why, despite a lack of evidence, they continue to keep her locked up without bail.

The police and prosecutors declined to comment on almost anything

PRESENTATION

Crime and Science:
The weight of evidence



View JournalNow's multimedia presentation

The online flash presentation includes photographs, audio clips, and the original lab reports from the State Bureau of Investigation.

JOURNAL ARTICLES

November 19, 2005

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August 29, 2005

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- Lab Work Suppressed
- Trial on hold, defendant out on bond, SBI on defensive

August 28, 2005

- DNA mislabeled in murder case
- Error at SBI lab erases key part of the state's case, but trial is set to proceed for woman charged in killing her mother

having to do with the case, but a Winston-Salem Journal review of search warrants and affidavits shows that nothing seized from Leslie Lincoln or her home has provided any physical link to her mother's death.

In addition, interviews with some of the confidential informants police relied on describe interrogation methods that include implicit threats, among other tactics, designed to get the witnesses to support the police theory - that Leslie Lincoln killed her mother.

In motions filed last week, Lincoln's attorneys alleged that the state has no physical evidence, eyewitnesses or confession tying Lincoln to her mother's death. Instead, the motions allege, the state is relying on jailhouse informants to make a case against her, with a promise to at least one informant to drop felony charges in exchange for testimony.

When it learned of its mistake on the DNA test, the State Bureau of Investigation removed the lab technician on the case from her duties. The prosecutor later took the death penalty off the table.

Leslie Lincoln, 50, remains in the Pitt County Detention Center. Her trial is scheduled to begin Sept. 12.

Prime suspect?

Leslie Lincoln is the youngest of Arlene and Abe Lincoln's three children. Duffy, the eldest, is a high-school guidance counselor. The middle son, Howard, died in a car accident. Leslie married an electrician in 1983. When the marriage ended in 1997, she moved in with her mother until her divorce was settled and she could afford her own place.

By 2002, she had her life back on track. She had found a job as the administrator at The Meadows at Red Oak rest home, not far from her mother's condo. She bought a house and kept her three horses nearby. She began dating Richard "Max" Manning, the maintenance man at the rest home.

Leslie Lincoln spent the afternoon of Sunday, March 17, running errands. She bought a bluegrass CD at Circuit City before dropping in to see her mother. According to a motion filed by her attorneys, she left her mother's about 7:30 p.m. On her way home, she bought dog food at Wal-Mart. Her lawyer filed receipts with the court as proof of her movements.

Arlene Lincoln led an active life growing flowers in her front yard,

keeping a garden at the First Freewill Baptist Church, and shopping for bargains at estate auctions. So that Monday, when neighbors noticed that she hadn't been out working in her yard or even picked up her newspaper from the walkway, one of them called Duffy Lincoln, and he drove over.

"I went down the hall to her bedroom and when I got to her bedroom I saw her on the floor," he said.

He called 911. Rescue workers arrived first. By the time they confirmed that she was dead, they had trampled through the crime scene, Lincoln said.

His mother was wearing a pair of blue slacks and a pink pullover. There were three footprints in the blood by her body. The top drawer of her dresser was on the floor. Her pocketbook, which she normally kept in the closet by the front door, lay on the seat of the living-room couch. Along the couch's top edge lay three \$1 bills. Her glasses were on the floor by the couch.

Later, Duffy Lincoln realized that the paisley bedspread was missing from her bed. So was a concrete squirrel she kept on the stoop by the front door. Police later learned that her credit card was missing. Someone had used it at 3 a.m. Monday to buy gas at a nearby convenience store.

Police took various items from the condominium for testing, including the bloodstained sheets, a crumpled paper towel, a cutting from the couch cushion and the dollar bills. They let Duffy Lincoln take his mother's pocketbook home. Later they asked ask him to return it for testing.

Leslie Lincoln met her brother at their mother's home that night. According to a defense motion, later in the week the police checked Duffy and Leslie Lincoln for wounds and found none.

Duffy Lincoln's wife, Sharla, remembers the day, a week after her mother-in-law's death, when Leslie Lincoln realized that she was the prime suspect.

"They think I killed Mama," Leslie Lincoln told Sharla Lincoln shortly after Leslie's four-hour interview with police. "They were freaking me out. The investigator was telling me the guilt was going to kill me. They got me so paranoid, I think I need to throw all the knives in the pond."

Greenville police arrested Leslie Lincoln on Sept. 19, 2002, and the district attorney soon filed notice that he would seek the death penalty.

Mistaken lab report

The strongest evidence linking the daughter to her mother's murder was the most irrefutable evidence there is in a criminal prosecution - a DNA test tying the defendant to the crime.

According to a July 2003 lab report by the State Bureau of Investigation, DNA extracted from bloodstains on the bedsheets in the mother's bedroom and from a couch cushion matched Leslie's DNA.

Lincoln's attorney, Ernest "Buddy" Conner, didn't believe the testing. As he explained to her family, she didn't have any wounds after the murder that would have bled on her mother's bedsheets or couch. On top of that, she had passed a polygraph exam that Conner arranged in November 2002 with a retired polygraph operator from the SBI.

By late 2004, Conner was asking the court to pay for the evidence to be retested by a private laboratory. District Attorney Clark Everett didn't object, and he also asked the SBI to retest the evidence itself. In March, Brenda Bissette, a DNA analyst who has since retired, called Everett to let him know that her first round of testing was wrong.

Later in March, LabCorp. in Research Triangle Park retested the bloody sheet and cushion previously tested by the SBI. The lab also tested a bloody paper towel. The lab was unable to extract a DNA profile from the couch cushion. The other evidence all matched Arlene Lincoln's DNA.

The state crime lab did not make any public announcement of its mistake, but it continued to work the case. The lab tested additional evidence in May, looking for blood and DNA. According to a May 17 report, the lab found no human blood on any of the knives the police seized from Leslie Lincoln's house or truck. DNA testing also failed to turn up a match between Leslie Lincoln and any of the bloodstained evidence taken from her mother's house. The blood all matched her mother's DNA.

Conner has filed motions asking the state crime lab to explain the mistake. Until the lab provides an explanation, his motion says, its work is suspect. A lawyer's group also has filed a complaint about Lincoln's case with the accrediting agency for crime laboratories.

"Leslie is innocent," Conner said. "And the SBI made a mistake in this case. Is that a coincidence? I don't know. Leslie is certainly entitled to an answer to that question."

In an interview this month, SBI officials said that Bissette mislabeled the test tubes she used to extract DNA from the blood samples, labeling Leslie Lincoln's DNA as her mother's and Arlene Lincoln's as her daughter's.

"From then on, all her interpretations were flawed," said Michael Budzynski, the special agent over the lab's DNA section. "She is very aware of what she did. She is aware of the gravity of the situation. It eats at people."

The SBI removed Bissette from her laboratory duties. She retired May 1, 2005. She did not return a telephone message left with a relative.

The SBI is reviewing its procedures in the wake of Bissette's mistake, but it has yet to make any changes, Budzynski said.

He said he also is reviewing the files for all 50 DNA cases that Bissette analyzed since 2002. He said he does not intend, however, to redo the analyses. The SBI also said it would redo DNA testing in any case that Bissette handled, if requested by the prosecuting or defense attorney. But the SBI has not sent out any formal notice to lawyers about the error.

Legal experts say that a mistake of such magnitude, especially in a capital-murder case, calls for a clear and prompt explanation from the SBI. It should have immediately explained what happened to reassure the public, and lay out what it intends to do to prevent such mistakes from happening again, they said.

The Journal, in April, requested public records about laboratory errors. The SBI's response did not disclose the error. SBI Director Robin Pendergraft said that must have been an oversight.

William Thompson, a professor of criminology and a DNA expert at the University of California at Irvine, said that labeling mistakes have happened at other laboratories.

"The test of whether a lab is doing adequate work isn't whether they make errors. It's how they respond when errors come to light," he said. "You can't expect a lab to be error-free. You can expect a good lab to be open about what they are doing."

Confidential informants

Beyond the discredited DNA report, the police, the district attorney and

Lincoln's attorneys declined to discuss the evidence. But affidavits by police Detective Ricky Best, filed to obtain search warrants for Lincoln's house and pickup truck, reveal his reliance on confidential informants to make a case.

Best said in the affidavits that he had two informants who heard Lincoln say that she may have killed her mother during an argument over her boyfriend, and a third who heard her say she may have killed her mother. A fourth informant told Best about throwing her hunting knife in the pond. Sharla Lincoln believes that she is the informant on that piece of information, though she does not believe that her sister-in-law said it as an admission of guilt.

"She argued with her mother and she thinks she killed her mother," Best wrote in one of the affidavits, quoting one of his informants. "She told (confidential informant A) that she was going to throw her knife into a farm pond before the police search for it because there may be evidence on the knife to link her to her mother's death."

Police seized a long list of items from Leslie's house, including a hunting knife, a penknife, a journal, a 2002 calendar and carpet samples. They also searched her blue pickup truck, finding a bottle of anti-anxiety medicine, a bottle of a painkiller called oxycodone prescribed in her name, another knife, a checkbook, \$234 in cash and an insurance card. Police also searched the pond near her house, but according to the search warrant, found nothing

Police declined to identify their confidential sources, but former rest-home employees said that Best relied on, and pressed, several of them for information.

Patsy Jefferson worked nights at the rest home, but transferred to a day-shift job after Best persuaded her to help with the investigation, she said.

Jefferson said that Lincoln's obsessive interest in Manning, even after her mother's death, made her suspicious of her boss. She remembered, too, she said, how Leslie Lincoln had once referred to her mother as "the bitch," and thought it strange that Lincoln bragged about the diamond ring she wore that had belonged to her mother.

"She would never give it to me, but look, I got it anyway," Jefferson recalled Lincoln telling her one day while they were taking a cigarette break together.

Jefferson said that Best also told her that a word had been written in blood at the crime scene, leading her to believe that the killer had written "bitch" somewhere on the body.

"He just said, 'Think of a word she liked to say a lot,'" Jefferson recalled. "It put a chill on me, and this was in the summertime."

Nothing in the court record mentions anything written in blood at the crime scene. Dr. Paul Spence, the medical examiner, examined the body at the scene. His report notes three footprints but says nothing about any words written in blood.

"I didn't find any such word written on her," Spence said this month. "It would have been pretty obvious."

After she switched to the day job, Jefferson said she never learned anything concrete linking Leslie Lincoln to her mother's death.

Catherine McCabe, who also worked with Lincoln at the rest home, said that she was another of Best's confidential informants.

She said she went to Lincoln's home several times after the murder to comfort her. One afternoon in late August or early September, McCabe said, she and another woman from the rest home visited Lincoln. She said that Lincoln was upset about the way the investigation into her mother's death had focused on her.

"She was basically (saying) that police were hounding her, and she couldn't understand why they were focusing on her and not trying to look at anyone else," McCabe said.

"I think that was the point where she made the statement that maybe she had killed her mother and just blocked it out."

Steve Drizin, a law professor at Northwestern University who has studied police interrogative methods, said that Lincoln's statement indicates that she was under stress from the interrogation.

"The daughter was telling people she began to think maybe she committed this crime in a blackout," he said. "That suggests to me that she was interrogated by the police and she was beginning to doubt her memory."

McCabe said she didn't take Lincoln's statement as an admission of guilt, but several days later, Best came to the rest home and asked to speak

with her.

He took McCabe to the police department and asked her about her conversations with Leslie Lincoln. McCabe said that Best told her that he had already heard about the "blocking it out" statement from other sources, and asked her to repeat what she had heard.

McCabe said she felt pressured to cooperate with Best out of fear of losing her job.

"If she (Leslie Lincoln) went through anything like what I went through when I was down there talking to them, I can see how she would not know what to think. It is a very intense experience to be part of an investigation, and you have someone yelling at you...."

She said that Best told her that he had found a knife at Lincoln's house that he believed to be the murder weapon, and he suggested that Lincoln had found the diamond ring in the top dresser drawer of her mother's room.

Since then, McCabe has learned that Duffy Lincoln gave his sister the diamond ring after their mother's death. She said she also learned that the knife that Best referred to had been seized from Leslie's truck. McCabe said she remembered that knife because Leslie Lincoln used it at work to cut tennis balls. The rest home put those cut tennis balls on the bottom of residents' walking aids for better traction.

"I know a lot of things have gotten misconstrued, including a lot of things that I said," McCabe said.

The police declined to discuss any of the allegations about Best's tactics. Best, who is now retired from the Greenville Police Department, did not return messages left for him.

Little ray of light

After his sister's arrest, Duffy Lincoln took over her affairs. He said he tried to keep up with her house payments and her three horses, but in a year, the \$10,000 she had in savings ran out, and he was forced to sell the horses and let the bank foreclose on the house.

"Everything she worked for is gone," he said.

Lincoln and his niece, Lyn Roman, visit Leslie Lincoln in jail every Sunday. He said that most weeks his sister is optimistic. She has learned to get

along in jail. She reads mysteries and plays cards with the other women. The Pitt County Detention Center doesn't allow its inmates in maximum custody outside, so she hasn't been outdoors, except for court appearances, since the day she was arrested.

One week in July when the temperature in Greenville reached 102 degrees, Sharla Lincoln said she spoke with her sister-in-law by phone.

"Hey, there, what's up?" Leslie Lincoln asked.

"I'm trying to stay cool and out of the sun," Sharla Lincoln replied.

"That's funny," Leslie Lincoln said. "I've got this little ray of light coming through the window. I'm standing in it, and I'm trying to stay in it as long as it's here."

Lincoln is scheduled to go on trial next month. Everett has declined to say why he took the death penalty off the table.

Court records hint at evidence that the state may present and at possible motives. Drugs appear to be one motive considered by police.

After the killing, Duffy Lincoln told police that the OxyContin that his mother took for shingles was missing. OxyContin is a powerful painkiller, with a high street value. Eventually, he and his wife found his mother's OxyContin hidden away in a kitchen cabinet, they said. They said they left a message with the police department that they had found the OxyContin. In spite of that, the request for a search warrant of Leslie Lincoln's house and truck several weeks later mentions the missing OxyContin.

According to motions filed by Lincoln's attorneys, the state's case relies on statements by women who were in jail with her. One motion asks the court to prohibit testimony from such witnesses, and alleges that investigators have shown photos of the crime scene to potential witnesses and told them facts about the case that could distort their testimony. Lincoln's attorneys also allege that the district attorney's office has made a deal with at least one informant, and they asked that the state disclose any deals it makes with witnesses. Everett declined to say whether he would be using jailhouse informants.

Another defense motion alleges that police failed to investigate other leads, including one about a man seen around Arlene Lincoln's home on the Sunday afternoon of the State-UConn game and another regarding noises heard in her condo about 6 a.m. Monday.

The police theories that Duffy Lincoln is aware of have all been discredited in his mind. The missing OxyContin was found. He was the person who gave Leslie Lincoln their mother's diamond ring. And, most important, his sister's DNA was not on his mother's bloodstained sheets.

Duffy Lincoln said he always cooperated with the police in the belief that the investigation would move away from his sister.

"Every time I interviewed with them it seemed it always went back to Leslie," he said. "I guess in my naivete I thought they'd figure out she didn't do it and move on to who really did it."

"It was almost surreal that they were after Leslie. When I watch CSI or something, one of the investigators says, 'Don't chase the suspect. Follow the evidence.' And they never did that."

- Phoebe Zerwick can be reached at 727-7291 or at pzerwick@wsjournal.com

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The Philadelphia Inquirer

June 20, 2003

Keith Herbert & Jeff Shields, *Troopers list cases possibly tainted A forensic scientist's work has been questioned*, PHILA. INQUIRER, June 20, 2003, at B11

By Keith Herbert and Jeff Shields

Inquirer Staff Writers

Pennsylvania state police have compiled a list of 615 criminal cases handled by a forensic scientist whose crime lab analysis has become suspect.

Maj. John R. Capriotti, director of the state police Bureau of Forensic Services, confirmed yesterday the number of cases in which evidence could be called into question. On May 5, he sent a letter to prosecutors in 27 counties statewide, notifying them of a potential for error in those cases.

The evidence was handled by serologist Ranae Houtz, 32, who resigned after laboratory supervisors found she had made mistakes in four cases.

Houtz of Walnutport, Northampton County, was reached at her home last night and declined to comment.

Prosecutors and detectives have been poring over cases Houtz worked on at the state police laboratory in Bethlehem, trying to determine whether evidence she analyzed needs new forensic analysis.

"Let me put it this way: It was not welcome news when I received that news from [Maj. Capriotti]," said John Morganelli, Northampton County district attorney.

In Montgomery County, where 104 cases involved work by Houtz, First Assistant District Attorney Risa V. Ferman said a team of at least eight county detectives was reviewing cases. "We will do whatever it takes," Ferman said.

Mark Baldwin, Berks County district attorney, where Houtz handled 163 cases, described his staff as plodding though a thicket of files, one case at a time. "It's an enormous task," Baldwin said. "It's one we're giving priority to."

Morganelli said his office already had reviewed about 40 percent of its cases, which include six slayings. His office has asked state police for retesting on a pending aggravated assault case in which Houtz tested blood from the victim and the defendant.

Morganelli said the fatal cases - none of which is a death-penalty case - don't appear to be in jeopardy because they usually involve DNA testing. He said a DNA test would catch any mistakes made in the serology phase, which matches fluids such as blood and semen.

Ferman in Montgomery County said evidence in at least five homicide cases would be sent back to state police for new forensic analysis. In a pending Montgomery County rape case, Houtz examined clothing and found semen on certain items, but failed to detect it on others. The evidence will be reanalyzed, and DNA testing will be done, Ferman said.

"We already have a suspect," she said. "I'm quite confident that the DNA will come back to that suspect."

Houtz, a civilian employee, worked for the lab for about three years. She resigned after her supervisors found that she had missed evidence when conducting some of her analysis.

Linette Quinn, a state police spokeswoman in Harrisburg, said the problems with Houtz's work were found in a routine examination, part of the crime lab procedure. In each case, after analysis, evidence is reviewed by an administrator and a supervisor before it leaves the crime lab.

Houtz's superiors don't believe she fabricated evidence or lied when preparing reports about evidence, Cappiotti said.

He said that the list of cases was compiled so that prosecutors could review it and resubmit evidence to a state police laboratory for reanalysis.

State police are not aware of any problems with the cases, but they notified prosecutors "in an abundance of caution," according to the letter Capriotti mailed to prosecutors.

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May 16, 2005

Justice Under the Microscope

Television viewers relishing crime-show denouements based on airtight DNA evidence had best get a grip on reality: DNA is only as reliable as the humans testing it. Virginia's once highly touted crime lab has starkly demonstrated this in an error-ridden death-row case that was propped up repeatedly by botched DNA studies from the state's supposed experts.

Gov. Mark Warner has wisely ordered a review of more than 150 capital murder convictions involving DNA evidence. He acted in the face of an independent panel's finding that bad science and political intrusion underpinned the 17-year imprisonment of Earl Washington Jr., a mentally retarded man who came within days of execution for a vicious rape-murder.

After years of controversy and defensive denials by police and statehouse officials, independent DNA testing forced by outside critics from the Innocence Project not only cleared Mr. Washington, but also positively identified another suspect now in prison as the source of DNA evidence at the murder scene. As doubts and real evidence mounted, state officials reluctantly pardoned Mr. Washington in 2000, but they did so seven years later than they should have if the state lab had done a proper job with the latest technology. Even now, some officials ludicrously theorize that Mr. Washington could have killed the woman, despite the proof of someone else's DNA.

Behind a veneer of official expertise, the lab director refused an outside review, but Governor Warner ordered one. Specialists from the American Society of Crime Laboratory Directors faulted the lab in a searing critique that should serve as a nationwide warning about the often shoddy and unprofessional standards that can afflict the criminal justice system via the crime labs of America.

For openers, the labs must be kept truly independent and subject to credible review by scientific peers. They should be insulated by law from the sort of political pressures found to have been exerted in the Washington case by officials intent on defending the capital punishment system as error-free. More than political careers, lives are at stake - 23 of them right now on Virginia's busy death row.

As Virginia was once hailed as a role model by other state crime labs, so its dangerous flaws must serve as a recipe for badly needed improvements. And producers of television's crime lab heroics might want to consider the tortured Earl Washington case for a plot-line leap into reality.

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Appendix (5)

REPORT OF FINDINGS

People v. Gary Leiterman

No. 04-2017-FC

Exemplars - Laboratory Error

Orlando Sentinel (Florida)

August 3, 2002
Pg. A1

JUDGE RIPS FDLE SILENCE IN LAB FLAP;
A WORKER'S CHEATING ON A TEST COULD AFFECT A SEMINOLE MURDER CASE.

Rene Stutzman, Sentinel Staff Writer

SANFORD -- A judge Friday gave the Florida Department of Law Enforcement a blistering lecture for covering up a DNA-lab cheating scandal, calling its silence "a gross misjudgment" and an indictment of the lab's credibility.

"It sounds like what's happening on the financial pages," said Circuit Judge Kenneth Lester Jr. of Seminole County. "It sounds like internal audits at FDLE are not grounded in reality."

The person at the center of the debate, John E. Fitzpatrick, was not at Friday's hearing, called to determine whether the scandal has an impact on a Seminole County triple-murder case awaiting trial.

Fitzpatrick resigned -- rather than face certain dismissal -- after he was caught cheating on a competency test earlier this year.

FDLE managers insist that Fitzpatrick's cheating was limited to that one test. But since word of the scandal broke two weeks ago, they have had other DNA experts look over the paperwork of about 50 of his cases -- all that hadn't already been reviewed.

On Friday, the agency released a memo, saying the review had turned up no other evidence of cheating, sample swaps or even identification errors.

That, though, has not stopped defense attorneys across Central Florida from attacking the agency, the integrity of its Orlando crime-lab work or Fitzpatrick.

On Friday, Lester joined the critics. He was incredulous that the state's top law-enforcement agency left it to Fitzpatrick to notify attorneys about the cheating, a task he simply did not carry out.

"It's not good enough," Lester said of that decision. "It's like sex offenders. We don't trust sex offenders. We register them. Everybody here knows it's a faulty way to deal with it."

FDLE attorney Steve Brady told Lester on Friday that his agency is now trying to fix that. On May 3 -- more than three months after it ordered Fitzpatrick to stop all DNA and blood analyses

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-- the agency sent out a letter to state attorneys, telling them that Fitzpatrick had left the agency. The letter said Fitzpatrick left under a cloud, but called him "highly regarded" as a DNA expert and advised prosecutors to have "no hesitation to use his testimony."

In the letter, Brady wrote that prosecutors were under no obligation to notify defense attorneys.

On Friday, Brady said the agency is now trying to identify each assistant state attorney connected to a Fitzpatrick case and get word about what happened directly to that person.

ATTORNEYS BUSY

Already, attorneys have begun filing motions attacking evidence Fitzpatrick may have handled.

The criminal case at issue Friday was that of Michael Reynolds, a laborer facing the death penalty in the stabbing and bludgeoning to death of an 11-year-old Geneva girl and her parents in 1998.

Reynolds' DNA has been found in at least two blood splatters near the victims.

Defense attorneys Steve Laurence and Frank Iennaco are challenging those findings, the only solid evidence that links Reynolds to the crime.

On Friday, Laurence attacked the FDLE, calling its handling of Fitzpatrick a cover-up.

He held up a copy of the FDLE's internal investigation and said, "This memo says he is a liar and a cheat."

Prosecutor Stewart Stone, however, insisted that Fitzpatrick had an "exceedingly minor role" in the Reynolds case.

Fitzpatrick only double-checked one portion of the analysis by another FDLE expert, Stone said, and did not touch any evidence.

"It's much ado about nothing," Stone said.

What will happen to that DNA evidence is not clear. Lester listened to four hours of testimony before adjourning for the day. Still, attorneys have more evidence to present regarding the DNA and Fitzpatrick, so the hearing will continue later. No date has been set.

MORE PROBLEMS

Other cases are in jeopardy.

An attorney for convicted child rapist Bruce Hunsicker has asked an Orlando judge to free her

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client and is pressing for a new trial because Fitzpatrick testified at Hunsicker's trial in February without revealing he had cheated on the test and resigned in disgrace.

It's not clear how many other criminal cases will be affected, but they stretch from Pensacola to Miami.

The FDLE appears not to know the number.

Agency managers say they have or are in the process of reviewing all the cases in which Fitzpatrick was the lead analyst, about 100. But that does not include the cases -- such as the Reynolds case -- in which Fitzpatrick reportedly had only a supporting role.

It's not clear whether the agency has reviewed all the cases in which he only did blood rather than DNA analysis.

That category includes the Orange County case of Kevin Robinson, who's awaiting trial on two murder counts. The 21-year-old Orlando man is accused of stabbing to death then setting fire to Ruth MacEachon and later that week killing Pashion Morrison, a witness to the first slaying.

Fitzpatrick did blood analysis on that case, according to Assistant State Attorney Linda Drane Burdick.

Fitzpatrick, 32, of Kissimmee, a five-year FDLE veteran, has said he did nothing wrong, neither on the test nor on any criminal cases.

He is expected to talk about that Friday. He's been subpoenaed by defense attorneys to give a deposition in another Seminole County murder case, that of Arnold Satones, 23, who's charged with strangling a strip-club dancer in a Fern Park hotel two years ago.

Fitzpatrick found DNA from Satones and the victim on a liquor bottle.

Friday, April 28, 2006

NEWS

Updated July 18, 2003, 10:14 a.m. ET

Indianapolis authorities double-checking DNA evidence for errors

INDIANAPOLIS (AP) — Authorities are double-checking DNA evidence in 64 criminal cases from Marion County over concerns a lab technician may have cut corners.

Prosecutors downplayed the potential impact of any retesting, saying the technician is not accused of improper testing — rather, they allege he failed to perform additional steps to verify tests' accuracy.

"We have no evidence that any of the test results have been tainted," said John Commons, the county prosecutor's chief of staff. "We have no reason to believe the new test results will be any different."

However, any errors that are discovered could lead to new trials. None of the defendants in the 64 cases faces the death penalty. Most of the cases involve rapes or killings.

"If it ends up actually clearing someone, so be it," Commons said.

Prosecutor Carl Brizzi asked police technicians to recheck every DNA match made by Dr. Kupparedi Balamurugan, who resigned last August after six years at the Indianapolis-Marion County Forensic Services Agency. Prosecutors alleged he tried to save time by skipping additional verification steps.

Lab Director Jim Hamby said he expected the state police audit next week would validate the lab's work.

Police DNA testing procedures have also been questioned recently in Oklahoma and Houston.

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• **9:30pm:** "In Harm's Way" - Forensic scientists are presented with a rare opportunity.

• **10:00pm:** "Oily in the Morning" - Experts prove that what looked like a death by car accident was something much more

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Local News

December 19, 2004

Supervisor accused of passing off DNA test

Investigation reveals incident only occurred once

By

Record-Eagle staff writer

TRAVERSE CITY - A former supervisor in the Michigan State Police Crime Lab's DNA analysis unit had a subordinate take a required proficiency test for him last year, an internal investigation found.

A state police commander said the incident doesn't affect the integrity of the hundreds of DNA tests done by the Lansing lab each year. But prosecutors statewide are cautiously taking a hard look at past cases.

"I would consider this possibly exculpatory information I should provide to the defense," said Marquette County Prosecutor Gary Walker, chairman of the Prosecuting Attorneys Association of Michigan.

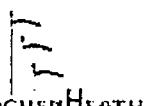
Added Antrim County Prosecutor Charles Koop: "We're trying to figure out our damage."

State police and attorney general's office officials declined to name those involved in the bogus test. But sources familiar with the investigation, speaking on condition of anonymity, identified Charles Barna as the former laboratory administrator alleged to have improperly passed off the test. The name of the

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Attempts to reach him for comment were unsuccessful.
State police forensic science division commander
Capt. Michael Thomas, while not naming Barna, said the
administrator involved "was not involved in casework."



<http://www.chicagotribune.com/news/local/chi-060202wrongfulconviction,1,2168839.story?coll=chi-news-hed>

Ex-Chicago police DNA expert under probe

The Associated Press

February 2, 2006, 9:48 AM CST

GRAND RAPIDS, Mich. -- A Michigan State Police DNA expert is under investigation in a case that led to Chicago reaching a \$9 million settlement with a man who served more than 11 years in prison before being cleared.

Joel Schultze, head of the DNA unit of the crime lab in Grand Rapids, acknowledged that his former employer, the Chicago Police Department, is investigating his role in the case, The Grand Rapids Press reported.

Lafonso Rollins said that he confessed to the crime after being struck and threatened by police. Robert Fioretti, a lawyer for Rollins, said documents kept by Schultze in his East Grand Rapids home played a key role in the decision to settle the lawsuit. The settlement was reached Friday.

"He had papers in his basement that clearly showed this guy was ... not the individual who committed the crime," Fioretti said.

Chicago police asked for an investigation into Rollins' case and wants prosecutors to review cases of defendants who were convicted before the police department regularly started using DNA testing.

An examination is also planned into the city's former crime lab, which merged with the Illinois State Police lab in 1996, because of documents unearthed in connection with Rollins' lawsuit, officials said.

When he was 17, Rollins was arrested for the 1993 sexual assault of an elderly woman in Chicago. He was found guilty and sentenced to 75 years in prison, but was freed after being cleared by DNA.

Gov. Rod Blagojevich pardoned Rollins in January 2005.

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HoustonChronicle.com -- <http://www.HoustonChronicle.com> | Section: Local & State

Feb. 13, 2004, 12:27AM

HPD to reopen part of crime lab

Analyst who was disciplined will again test samples

By ROMA KHANNA

Copyright 2004 Houston Chronicle

The Houston Police Department is prepared to reopen part of its toxicology division in about two weeks, with one of the analysts disciplined in the DNA lab fiasco assigned to test blood and urine for alcohol, the crime lab director said Thursday.

Meanwhile, more than three months after HPD suspended toxicology testing because the division supervisor failed a competency test, little progress has been made toward retesting cases with evidence that she analyzed.

Joseph Chu was a key member of HPD's DNA division when it was shut down in December 2002 after an independent audit exposed serious problems with its protocols and personnel. He was one of nine crime lab employees disciplined in June after an internal investigation.

Chu, who has been with the crime lab for nearly 15 years, recently completed toxicology training at the Harris County medical examiner's office, crime lab director Irma Rios said. He will be the only analyst in the division as HPD gradually resumes toxicology -- the testing of blood and urine for drugs and alcohol.

The decision to tap Chu to restart the division comes just two weeks after a review panel reinstated fired DNA analyst Christy Kim. It immediately raised concerns among observers who say HPD may never correct problems at its crime lab if it continues to use such analysts.

"The fact that they can't fire anybody means they will have to shuffle people from one job to another," said William Thompson, a University of California-Irvine professor who helped expose some of HPD's lab errors. "But it doesn't matter where you put the weak link, the chain will still break."

The DNA lab investigation cited Chu for such errors as presenting incorrect statistics in court, mixing up evidence and failing to properly document his work. HPD recommended that he be suspended for

14 days, but Chu appealed and was issued a written reprimand.

Chu, who has a bachelor's degree in botany and a master's in chemistry, once falsely stated in a deposition that his degree was in molecular biology.

Rios, who has spent her first three months on the job conducting competency tests for employees and stepping up training, said she thinks Chu is qualified and has received the necessary training.

"I am confident, otherwise I wouldn't believe the medical examiner's office would sign off on him," she said. "His (DNA work) is not relevant here with the new training and competency tests."

Attempts to reach Chu Thursday were unsuccessful.

HPD shut down the toxicology division of its crime lab in October after the supervisor, Pauline Louie, failed a competency test. Louie, a 28-year HPD veteran, was one of the lab's highest ranking analysts. She worked in and oversaw numerous areas such as arson and breath analysis of suspected drunken drivers.

Louie was suspended in October. She remains out of the lab as internal affairs investigates her work and prosecutors make slow progress of the effort to identify and retest evidence from cases that included her toxicology work. Phone calls to Louie and her attorney were not returned Thursday.

To date, the police department has identified about 475 cases in which Louie performed toxicology tests. But prosecutors have not begun to match those case numbers to actual defendants, who must be notified of the review, or to select from that list which cases warrant new tests.

"It's not going as quickly as I'd like," District Attorney Chuck Rosenthal said of the review. "I want to resolve it as quickly as we can because we are facing situations where people may have been convicted on evidence that was not there."

Toxicology retests will be performed by a U.S. Department of Defense laboratory, the Armed Forces Institute for Pathology, in Maryland. But retesting toxicology work has proven more complex than retesting DNA evidence.

"This is just more of a mess," said Assistant District Attorney Marie Munier, who is overseeing the review. "We are having to ask whether things can be retested because some of these substances are not as stable as DNA."

For example, Munier said, alcohol in an open container dissipates over time. She also worries that the district attorney's office may not have files for some of the older cases -- misdemeanor files are retained for only two years -- and that tracking down defendants, many of whom are no longer in prison, may be complicated.

Meanwhile, critics of the lab continue to voice concerns that the review is limited to toxicology tests that Louie performed and that no independent party is identifying which cases should be scrutinized.

"She is the person who set the standards in this city for toxicology testing and she oversaw people and she trained them," said Stanley Schneider, president-elect of the Harris County Criminal Lawyers Association. "You can't trust these interested parties to make the right decisions. An independent review is vitally important here."



HoustonChronicle.com -- <http://www.HoustonChronicle.com> | Section: Local & State
This article is: <http://www.chron.com/cs/CDA/ssistory.mpl/metropolitan/2400762>

Army criminal DNA results in question

Civilian worker said to admit falsifying results in one case; probe under way

AP Associated Press

Updated: 5:56 p.m. ET Aug. 26, 2005

WASHINGTON - The Army is investigating allegations that a civilian forensic examiner at the Army Criminal Investigation Laboratory at Fort Gillem, Ga., falsified DNA test results.

The allegations, if true, would throw into doubt hundreds of criminal cases dating back at least a decade.

The examiner on June 2 admitted to making a false entry on a control sample used during one DNA examination, and the laboratory is now reviewing 479 or more cases the accused examiner has worked on since he began in 1995, according to an announcement Friday by the Army Criminal Investigation Command, or CID.

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The examiner was suspended from duty in May after the allegations surfaced. His name was not released.

The Gillem lab is now reviewing all cases that the unidentified examiner handled, including an unspecified number that led to criminal convictions, officials said.

The top lawyers of the Army, Air Force, Navy and Marine Corps have been notified by letter of the "identified deficiencies" in the DNA testing. Also, the CID is alerting all Pentagon criminal investigation organizations so that custodians of evidence from cases that the accused examiner handled can preserve that evidence.

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The lab at Fort Gillem is the only Army facility that performs forensic examinations in support of military criminal cases. It provides services to all military investigative agencies and is the only accredited full-service crime lab in the federal government outside the FBI.

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This was not the first indication of potential problems at Fort Gillem. The examiner now under investigation was temporarily suspended from DNA case work in January 2004 when contamination was detected in his testing process, officials said. After "remedial action and retraining" he was returned to work in September 2004.

No other details of the earlier suspension were released Friday.

"We are taking every step necessary to ensure we have an independent, impartial review of the issues at hand," said Chris Grey, a CID spokesman. "At this time the incident appears to be isolated to one individual examiner, but we want to take very step necessary to make certain that is the case."

The CID investigation is being led by the command's Standards of Conduct Office, and the Pentagon's inspector general has been asked to conduct an independent review of the CID probe once it has been completed.

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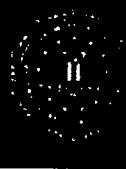
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For Immediate Release

May 27, 2004

Press Release

Washington D.C.
FBI National Press
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The FBI DNA Laboratory Report : A Review of Protocol and Practice Vulnerabilities

Today, the Office of Inspector General (OIG) released a report entitled: The FBI DNA Laboratory: A Review of Protocol and Practice Vulnerabilities. This report is a comprehensive assessment of the misconduct of former DNA technician Jacqueline M. Blake as well as a review of the FBI DNA Laboratory's protocols and practices. The significance of the OIG's report cannot be overstated in that it identified potential vulnerabilities which will create opportunities for improvement.

In April of 2002 the FBI Laboratory detected discrepancies, within Blake's analysis, regarding the proper use of negative controls for DNA testing. After an expeditious and thorough review of all active casework within the Unit, it was confirmed that the discrepancies were limited exclusively to Blake's work product. The FBI Laboratory immediately developed and implemented corrective measures to address Blake's actions and subsequently self reported Blake's misconduct to the OIG through the FBI's Office of Professional Responsibility.

The FBI Laboratory has been accredited by the American Society of Crime Laboratory Directors Laboratory Accreditation Board (ASCLD/LAB) since 1998. A purpose of laboratory accreditation is to attain a higher level of quality operations that is reflected within the laboratory services provided to the criminal justice community. The report released today has taken yet another step in that direction by enabling the FBI Laboratory to incorporate additional improvements to the operation of the DNA Laboratory. A few of the more significant improvements include:

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- Incorporation of the corrective measures instituted to address Blake's misconduct within DNA I operational procedures and manuals.
- Incorporation of suggestions offered by the OIG to improve the clarity and augment the detail in selected manuals and operational protocols.
- Enhance the current DNA training program to further capture the institutional knowledge of senior examiners and reflect advancements in emerging DNA technologies.
- Acquisition of a Laboratory Information Management System (LIMS) within the FBI Laboratory. Implementation of LIMS will provide managers, evidence control personnel, examiners, and technicians the tools necessary to electronically track evidence, provide chain of custody logs, and produce final reports.
- Establishment of a Process Map of all DNA Unit 1 operations. Through external facilitation and extensive internal staff participation, a more uniform operational plan for evidence processing was developed. This included work-flow diagrams and decision trees, in an effort to assist examination teams with analytical processing decisions and potentially increase both the efficiency and effectiveness of operations.

The FBI Laboratory also implemented significant operational improvements and is benefited by its relocation to a state-of-the-art forensic science laboratory. The facility encompasses nearly 500,000 square feet, houses 25 specialized units, and contains the most contemporary instrumentation available to support the FBI Laboratory's critical mission.

The FBI Laboratory recognizes the benefits of obtaining outside scrutiny and review as represented by this OIG report. This report is yet another example of the laboratory's commitment to support and participate in various external endeavors. This includes the National Academy of Sciences report on Bullet Lead Analysis which was commissioned by the FBI Laboratory, the administration of Scientific Working Groups, partnerships with state and local agencies for technology advancements, participation in annual external DNA audits, externally provided proficiency

tests as well as continued accreditation through ASCLD/LAB. Additionally, the FBI Laboratory has worked closely with ASCLD/LAB toward raising the existing national accreditation program to an international level.

The FBI Laboratory is committed to the continual process of self-improvement through input obtained both internally and externally. It is only through this process that the FBI Laboratory can remain a leader in forensic science services. The FBI Laboratory appreciates the considerable efforts extended by the OIG and its external scientists which have significantly contributed to this process.

See <http://www.usdoj.gov/oig/igwhnew1.htm> for a copy of the report.

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**Los Angeles
Daily News**

Lab used by LAPD falsified DNA data

**By Rick Orlov
Staff Writer**

Thursday, November 18, 2004 - Los Angeles County officials scrambled Thursday to review at least 27 -- and possibly dozens -- of pending criminal cases to determine whether critical evidence was tainted or falsified during analysis by the nation's largest private DNA lab.

Orchid Cellmark, based in Maryland, notified the county recently that DNA results in an unknown number of cases might have been falsified.

The Baltimore Sun reported Thursday that Cellmark notified the Los Angeles Police Department that it had fired an analyst, Sarah Blair, on accusations that she had mishandled data for some control samples. Blair denied any wrongdoing.

But the information prompted concern throughout the Los Angeles legal system, with both prosecutors and deputy public defenders reviewing all cases that might be involved.

Jane Robison, a spokeswoman for the District Attorney's Office, said officials have checked three pending murder cases, including one involving Julian Beltran of Sun Valley, who is awaiting trial in the slaying of his former girlfriend.

"We went back and looked at the evidence there and don't believe there is a problem with the evidence," Robison said. "We continue to have confidence in Cellmark. It was Cellmark who discovered the problem, so their procedures did work."

Robison said lab results also were determined to be correct in the two other murder cases reviewed -- those involving defendants Omar Chavez and Nahki Holmes, both of Los Angeles. No details of the cases were available.

In addition to the murder cases, Robison said, officials were reviewing cases involving a variety of charges. LAPD officials said the cases involved some homicides, but that most were rape cases.

"From what we can determine, none of these cases have gone to trial," Robison said.

Public Defender Michael Judge said he has assigned two of his top officials to review all the cases to determine whether there are problems.

"There is nothing that could be worse. It's not just if people are on trial, but we could have people being held without bail because of DNA tests that were falsified.

"It's so disturbing when you have inaccurate lab results for any reason, but when they are falsified, it undermines people's trust in the justice system."

Jennifer Friedman, forensic science coordinator and a deputy public defender, said Judge's office was notified by Cellmark of only two of its cases involving the fired analyst -- one case a homicide and the other a sex-offenses case.

"We were assured that the tests were redone and everything turned out the same, but we aren't so sure. We in the defense community have had problems for years getting full discovery so we can test the results. What this has done is prompt more concerns about how the tests are conducted."

Friedman said Judge's staff is going over not only the two cases on which Cellmark sent notice, but all cases in which Cellmark was used to determine if there are any problems.

"We don't know how many cases this could be -- perhaps in the dozens. We have asked all our attorneys to review their cases to see if Cellmark was used as a lab."

Steve Johnson, commanding officer of the LAPD's Scientific Investigation Division, said the department continued to have confidence in Cellmark after it disclosed the problems.

"Even though we believe there is questionable data in 11 of the 27 cases brought to our attention, they are retesting all 27 cases. Ten of those have come back already, and they showed the original findings were correct."

Johnson said Cellmark sent out its lab director to meet with LAPD officials in September to explain the problems and the steps that had been taken to correct the situation.

"Their internal procedures discovered this and they took steps to correct it immediately," Johnson said. "We're satisfied they are doing all they can."

Cellmark has a three-year, \$2.7 million contract to help the LAPD clear up a backlog of cases while the agency trains its own DNA lab analysts.

"Last year, we sent them about 250 cases, and we'll send them about the same number this year," Johnson said. "We are hoping at the end of this contract to have our own people in place to do the testing."

Cellmark Chief Executive Paul J. Kelly issued a statement voicing confidence in the firm's work and saying full disclosure was made to all law enforcement agencies and defense attorneys.

"The company does not expect that any criminal case will be adversely affected by the analyst's actions. We regret that this incident occurred, but we want to assure all our stakeholders that we believe it demonstrates that our rigorous quality-assurance procedures are working as intended. We do not expect this incident to have a material impact on our business."

Cellmark does laboratory analysis for law enforcement agencies throughout the world and has worked on a number of prominent investigations, including the O.J. Simpson, Jon Benet Ramsey and Unabomber cases.

Company officials said they discovered the problem through their own testing procedures and believe Blair failed to follow proper procedures for retesting when problems developed.

Friedman said she was told the testing protocols were not followed and that the analyst substituted results and changed computer records.

"It seems like this person went to an awful lot of trouble to avoid extra work."

Junk Science

Truth in Justice

Appendix (6)

REPORT OF FINDINGS

People v. Gary Leiterman

No. 04-2017-FC

Exemplars - Laboratory Error

Sun-Sentinel (Fort Lauderdale, FL)

June 24, 2003

Pg. 1A

**CRIME LAB BOTCHES MURDER INQUIRY;
PROSECUTORS MUST DROP CHARGES AFTER DNA EVIDENCE IS CONTAMINATED.**

Paula McMahon Staff Writer

Prosecutors dropped a first-degree murder charge Monday in a brutal Fort Lauderdale slaying after a Broward County Sheriff's crime lab error contaminated DNA evidence.

Saying that Kevin Hoffman got "the break of 10 lifetimes," prosecutor Howard Scheinberg announced in court that the state had to drop the murder and robbery charges against him. Hoffman, 27, had been looking at life in prison.

The Sheriff's Office has reassigned the analyst who made the mistake, started an internal investigation and asked for both independent and internal audits of the crime lab's work to try to find out if the problem extends beyond this case.

But experts said it will surely throw other cases into question at a time when the agency has been struggling to assure the public that it has weathered recent controversies where DNA testing led to overturned convictions and exonerations.

"It was human error in the handling of a DNA sample ... someone squeezing the eye-dropper into the wrong vial," said Jim Leljedal, a spokesman for the Broward Sheriff's Office. "As far as we can tell this is the only mistake she's made."

DNA evidence from the murder case was mixed in with DNA samples taken from a Pembroke Pines rape victim, he said.

The analyst in question, Lynn Baird, is a 10-year veteran of the lab who has testified in numerous high-profile murder cases. She is highly regarded by both defense attorneys and prosecutors.

The tests on the murder and rape cases were run in the lab on the same day, Leljedal said.

Hoffman and Geoffrey Sean Kennedy were charged with beating warehouse manager Michael Sortal, putting a plastic bag over his head and asphyxiating him with a belt in March 2001. They also were charged with attempted first-degree murder in a similar attack on another Fort Lauderdale man, Timothy Thorne. Prosecutors said the pair targeted gay men.

Kennedy is serving four life terms for the murder, the attempted murder, robbery and kidnapping charges. He escaped getting the death penalty by just one juror's vote last year. His conviction will not be affected because there was other evidence against him.

The evidence against Hoffman in the Sortal murder was purely circumstantial and his attorney Hilliard Moldof was fighting it strenuously.

Initially, Kennedy confessed and said Hoffman was an equal participant in the murder. But later, he changed his story and said he would testify that Hoffman was not there at the time of the killing, the prosecutor said. Kennedy's word was also suspect because of his conviction in the case.

Leads prove useless

Investigators at first thought they had both Kennedy and Hoffman's DNA on a cigarette butt left in an ashtray at the scene, Scheinberg said. But there were problems with that evidence because, when it was tested, the results excluded Hoffman as a source of that DNA, Scheinberg said.

Hoffman also left a footprint in the bathroom at the apartment. But that did not prove he was involved in the murder because Hoffman and Kennedy met Sortal at a bar several days before the murder and several witnesses testified they saw both men socializing with the victim at his apartment.

And DNA from a then-unidentified source was found on swabs taken from the murder victim's genitals and nail scrapings. That later turned out to be DNA from the Pembroke Pines rape victim.

The prosecutor said he decided to drop the charges because there was insufficient evidence against Hoffman, not because of the DNA mistake. He considers Hoffman to be "incredibly dangerous."

"There was nothing linking Hoffman to the scene of the murder," Scheinberg said. "The state can't prove he was there at the time."

The legal standard to get a circumstantial case to a jury is that the state must be able to rebut any hypothesis of innocence. Scheinberg said he could not meet that standard.

If other evidence surfaces to implicate Hoffman, he would present it to a grand jury.

The Sheriff's Office and Hoffman's attorney disagree on who found the error.

The Sheriff's Office said the lab discovered the error last month when it re-tested re-tested the evidence preparing for trial.

Moldof, the defense attorney, said that during an April 8 deposition he pushed hard to get a prosecution DNA expert to explain who was the source of the unidentified DNA.

As he continued to ask questions, the statistical expert asked for a break and then indicated that he thought Moldof had a valid point, Moldof said.

Several hearings were canceled after that, Moldof said, but he still has not received a full explanation.

"I've been doing this for 28 years and I've never heard of something like this happening," he said.

Hoffman is still in the Broward County Jail and will not go free yet because he pleaded guilty to attempted first-degree murder in the severe beating of the victim in the other case, Thorne. But even that is in question for other reasons.

Request stirs anger

In a controversial plea agreement, Hoffman was sentenced to two years of house arrest, 28 years of probation and his parents will pay \$20,000 restitution to the victim, Thorne. The victim requested the deal, Moldof said.

The defense asked Circuit Judge Susan Lebow on Monday to allow Hoffman to leave Broward County and return to Indiana, where his parents live, to complete his house arrest.

The prosecutor's frustration burst out of him in court when the defense made the request.

"I'm just amazed," Scheinberg told the judge. "He got the break of 10 lifetimes and now he doesn't want to do prison time at home."

The defense said it "was setting him up for failure" to keep Hoffman in Broward where he has no family and no support.

Later, Scheinberg said he was concerned at the message it would send if Hoffman was allowed to leave Broward.

"Mr. Hoffman was in a position where he had parents ready, willing and able to pay a victim of an extremely violent crime," Scheinberg said. "And because of the family's status, he received an incredible break."

Scheinberg said he would be very disturbed if the judge allowed Hoffman to leave Broward, where he would be closely monitored. A hearing is scheduled for Wednesday when Hoffman's parents will testify. His mother works in a courts-related job in Indiana.

Hoffman has not fared well on house arrest previously. He was released on bond after his arrest, but was jailed again after just a few months when he violated the terms of his house arrest.

Court documents show that Hoffman was not at home when he was supposed to be there; he tested positive for cocaine use; and co-workers said they saw him buying liquor -- all of which were

violations.

The victim's brother, Nick Sortal, a reporter for the South Florida Sun-Sentinel, said he and his parents, Mike and Violet, are devastated that Hoffman will not stand trial for Michael Sortal's murder.

"I think an ordinary jury of normal people would understand human error but Judge Lebow would not," Nick Sortal said.

Broward defense attorneys said they were shocked by the crime lab mistake and said it is inevitable the error will be used to throw other cases into question. But even Moldof said he was surprised that Baird was responsible for the mix-up.

Raag Singhal, a former president of the Broward Association of Criminal Defense Lawyers, said he thought the lab was very good. Before he knew that Baird was the analyst in question, he brought up her name as someone he particularly trusts. "When you're looking at an accredited crime lab where procedures failed, questions are certainly going to be asked about other cases," Singhal said. "I think people should be looking at this kind of evidence more closely than they have been."

Chicago Tribune, July 27, 1999
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July 27, 1999 Tuesday, CHICAGO SPORTS FINAL EDITION

SECTION: NEWS; Pg. 1; ZONE: N

LENGTH: 1189 words

HEADLINE: DNA SAMPLE ERROR PUTS CASE ON LINE, LAB ON SPOT

BYLINE: By Ken Armstrong and Steve Mills, Tribune Staff Writers.

BODY: After 15 years in prison for a rape and murder he insists he didn't commit, Anselm Holman thought DNA testing would finally set him free.

Instead, a blunder by the Illinois State Police crime laboratory not only threatens to cost Holman a chance to prove his innocence, but almost certainly will bring additional scrutiny by defense attorneys who say the lab has made repeated mistakes in recent years.

In the Holman case, a forensic scientist at the crime lab committed what forensic scientists call an extraordinary error: contaminating a semen smear on a microscope slide by somehow transferring his own DNA into the evidence. The situation has confounded experts, who note that one of the nation's premier crime labs, based in Connecticut, even tried and failed in an experiment to deliberately contaminate DNA evidence by sneezing into a sample and by putting hair, blood and skin cells into it.

It's unclear how the contamination in this case occurred, but Holman's lawyers say the scientist who performed the test told them he was not wearing gloves. That, according to experts, violates fundamental laboratory procedures for such testing.

For Holman, the error by the Illinois crime lab caps an odyssey through the criminal justice system that he claims is marked by allegedly illegal police conduct and a bewildering omission by the attorney who handled Holman's initial appeal.

While Holman's co-defendant won his freedom when the Illinois Appellate Court ruled that Chicago police arrested him illegally, Holman's attorney failed to raise that claim on appeal even though the circumstances of the two defendants' arrests were so similar the appeals court expressed wonder that the issue hadn't been raised.

"It's like he lives under this dark cloud like that character in Peanuts," said Tom Betten, one of Holman's current attorneys. "It's all dumped on Anselm's head."

Prosecutors acknowledge the mistake occurred but say they will continue to assume Holman is guilty in the absence of evidence that exonerates him.

Holman, now 32, was one of the first inmates in Illinois to take advantage of a new state law that took effect last year granting certain defendants who were convicted when DNA testing hadn't been developed the opportunity to have it done now.

He was arrested in 1984 at the age of 17 and charged with the rape and murder of Mary Brackenridge, a 75-year-old woman killed in her apartment on the city's West Side. He was convicted the next year based on a statement he gave to detectives in which he allegedly admitted committing the crime.

But Holman, serving a life sentence without the possibility of parole, testified in a pretrial hearing that he provided a false confession because police were beating him--a claim the officers have denied.

Holman's attorneys now plan to ask a Cook County Circuit Court judge to allow them to have the evidence recovered from the victim tested by an independent laboratory. Still, they fear the contamination has made it impossible to discern the rapist's identity from the small amount of physical evidence remaining in the case.

According to a representative of the Cook County state's attorney's office, the state's test identified DNA from only two people--the victim and the analyst. The analyst's DNA was compared with the test result after officials excluded at least two other possible suspects in the case as the source of the semen, lawyers involved with the case said.

Ralph Ruebner, a professor at John Marshall Law School, has been representing Holman during the last 11 years of his appeal. Ruebner believes the error in this case could also have a ripple effect on other DNA cases handled by the state lab, whose employees have come under fire for what critics say is shoddy work with such forensic testing as hair comparison and blood-typing evidence.

"Imagine what this will do for other individuals either awaiting trial or already convicted, where there's an open admission of contamination in the state lab," Ruebner said. "This could open up an incredible dilemma for prosecutors in Illinois."

Other legal experts said the effect would likely be more limited to cases handled by the analyst who contaminated the evidence.

Moses Schanfield, chief of a forensic genetics lab in Denver, said he had never heard of a case in which a DNA sample had been contaminated by the analyst's own DNA.

"This shouldn't happen," Schanfield said. "It should cast a good deal of questions about the people doing the profile as well as the laboratory."

Added John Gerdes, a Denver scientist who testified for the defense in the O.J. Simpson criminal trial: "I can't believe that he didn't wear gloves. And it's not only to protect yourself, but also to prevent contamination. That's absolutely standard. It's unbelievable."

Crime lab officials and Cook County prosecutors disclosed the contamination error to Holman's attorneys at a meeting two weeks ago.

"They were very embarrassed; they were ashen," Betten said. "It was a dark day."

Crime lab officials couldn't say how it happened, but the forensic scientist who performed the tests, Aaron Small, offered a possible explanation during that meeting, the lawyers said.

"I said to him, 'How did your DNA get into this evidence?' " Ruebner said. "And he said, 'I handled the slide without gloves. I may have touched my nose and then the slide.' He did not believe he was bleeding at any time when he handled the slide, but he thought perhaps he may have had a small cut that could not be seen or wasn't bleeding due to the roughness of the slide."

Small, 29, has worked for the state since 1992, according to state records. He declined comment Monday, referring questions to a supervisor.

James Kearney, laboratory director for the Illinois State Police Forensic Science Center in Chicago, declined to talk about the specifics of the Holman case because it's still under appeal. But he said he does not believe this incident reflects on the lab's overall competence.

"We've worked dozens of cases, into the hundreds of cases, and not seen contamination," Kearney said. "Does that mean there might be a case out there where contamination might occur? Yes, I think that's possible."

Kearney said he doesn't know of any other case where contamination like this has occurred in the Illinois lab.

Richie Cole, then 16, was arrested along with Holman and likewise convicted of taking part in the crime. But Cole's conviction was thrown out three years later when the Illinois Appellate Court found that his confession, which Cole claimed was coerced, should have been suppressed because police had arrested him without probable cause. Cole was not retried.

In reversing Cole's conviction, the appellate court noted that Holman "might also have a colorable" claim of unlawful arrest, but said that was waived since Holman's attorney hadn't raised it on appeal.

Holman's former attorney ultimately filed an affidavit saying that a claim of unlawful arrest had been considered but for whatever reason he didn't think it would prevail.

Holman's appeals have subsequently been denied.

Star Tribune (Minneapolis , MN)

David Chanen, *Defense attorneys raise concerns about DNA sample mix-up*, Star Tribune (Minneapolis , MN), May 20, 2004 , at 1B

A DNA sample in an Anoka County rape case accidentally got mixed into another sample during testing by the state Bureau of Criminal Apprehension lab, and some defense attorneys have raised concerns about how frequently that happens.

A Hennepin County public defender presented evidence by a BCA scientist in a trial two weeks ago that showed the lab had five similar mistakes - in addition to the rape case -in the last year.

Questions about the lab stand in stark contrast to the reputation for quality that led the FBI to select it as one of four in the United States that handles a unique DNA testing procedure for the agency. The lab, which is in St. Paul , also recently passed a required audit.

The BCA maintains the mix-up won't affect the rape case because scientists can retest the remaining DNA sample that wasn't initially used or contaminated. But Anoka County public defender Virginia Murphrey said the error affects the confidence she has in the BCA.

"We're obviously very concerned," she said after a hearing Thursday regarding the rape case in question. "When fallible evidence can get into court and it's trusted, this becomes an important factor."

Murphrey's client is 21-year-old Mohamed J. Abdullahi, a college student who is charged with raping a woman he and a friend met at a pool hall in Columbia Heights last April. His DNA profile also was found in a sample from a separate case in Blue Earth County .

The BCA scientist who was working on three separate cases somehow got some of Abdullahi's DNA sample into a sample container for the Blue Earth case. Frank Dolejsi, the lab director, said the lab discovered the mistake through internal safeguards.

The wrong result was released to the county attorney's office before it could be corrected. Dolejsi said that has never happened before. The BCA pulled the scientist's cases from the last year and didn't find any other mistakes.

Murphrey requested logs of all contaminated DNA incidents for the six months before and after the test was done in Abdullahi's case. Contamination issues are reviewed when the lab goes through the process of maintaining its accreditation, said Jerome Geurts, treasurer of the American Society of Crime Laboratory Directors.

"Contamination happens. You can't pretend that it doesn't happen, but it's also not the end of the world,"

he said.

A DNA analyst could contaminate a tube by sneezing on it or having a spilled sample on a glove, he said. More lab errors come from something getting mislabeled, he said. Mistakes like the one in the Anoka County rape case are infrequent, Geurts said.

The DNA audit of the BCA lab followed national guidelines of the Scientific Working Group, an objective organization, on DNA analysis methods. The auditors examined policies, procedures and casework in the DNA section of the lab and found no technical deficiencies.

Crime labs in Virginia and Houston have come under scrutiny in the past two years for problems with DNA testing.

Hennepin County public defender Pat Sullivan brought in a BCA scientist in a murder trial two weeks who said five cases in the last year had problems similar to the Anoka County rape case. Because it's difficult to do DNA testing without contamination, he believes the BCA should establish an error rate that could be presented to juries.

Geurts, who directs one of Wisconsin's three **crime labs**, said creating error rates has been brought up before. But nobody regularly tracks errors because once an error is found, it's corrected, he said.

"Each side in a trial tries to use information to its advantage," he said. "My position is that the lab is not an advocate in the system."

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Local

Thursday, July 22, 2004

Rare look inside state crime labs reveals recurring DNA test problems

By RUTH TEICHROEB
SEATTLE POST-INTELLIGENCER REPORTER

For the detective working the case, it looked like a sure thing. The 58-year-old suspect had confessed to raping his young niece. He had a prior sex-crime conviction.

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DNA evidence extracted from the 10-year-old girl's underwear would be the clincher.

Charged with child rape, the road-crew worker from the South King County town of Pacific faced up to 26 years in prison -- until authorities learned of startling test results coming out of the Washington State Patrol's Tacoma crime lab.

The genetic evidence excluded the victim's uncle and pointed to an unknown man. The airtight case suddenly had a gaping hole.

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A couple of weeks after that, the lab made an embarrassing discovery.

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into court and say is infallible," said William C. Thompson, a forensic expert and professor of criminology and law at the University of California-Irvine, who reviewed the incidents at the request of the P-I.

"What we're seeing in these 23 cases is really the tip of the iceberg."

That's because the lab is only catching obvious cases that likely signal more widespread problems, Thompson said.

State Patrol lab officials disagree, saying they have strict protocols in place that guarantee these incidents represent only a tiny fraction of the 1,400 DNA cases handled each year.

"We're as good as any lab and probably better than many," said Barry Logan, who as director of the crime labs -- the Forensic Laboratory Services Bureau -- oversees a \$21 million biennial budget and seven labs processing evidence for the bulk of Washington's criminal cases.

Although the labs only recently set up a mandatory reporting system for DNA mistakes, officials are "100 percent certain that with all the precautions we catch everything," said Gary Shutler, who supervises the lab system's DNA work.

That's almost impossible to measure because the overburdened lab system, faced with a rapidly expanding DNA caseload, operates almost entirely outside of state and federal legislation, like its counterparts across the country.

Even the state-of-the-art FBI crime lab in Quantico, Va., was shaken by scandal recently when a DNA analyst, Jacqueline Blake, was caught falsifying her lab reports over a two-year period. Blake skipped an important step in her DNA tests, then lied about it.

A Justice Department report two months ago said the FBI lab's testing procedures needed tightening and criticized officials for dragging their heels on retesting Blake's cases and notifying affected defendants.

Congress tried to address the gap in government oversight of crime labs a decade ago by asking the FBI to set up DNA guidelines that crime labs must follow to get federal funding and use the national DNA criminal databank.

Yet a private medical lab testing your blood-cholesterol level faces more government scrutiny than forensic scientists handling evidence that could put a defendant on death row.



The single cotton-tipped swab contained an invisible speck of DNA that would make or break the state's case against a Kirkland school bus driver accused of raping a developmentally disabled student.

What began as a straightforward test would end up in a legal tussle over the credibility of the Marysville crime lab's work.

The evidence landed on the desk of forensic scientist Brian Smelser, a four-year lab employee.

His February 2001 report pointed to suspect Kirby Wayne Lyons, a Lake Washington School District employee, as the major source of DNA. The report, however, failed to explain traces of DNA from a second male, and made no mention that Smelser had run the test three times due to problems.

Smelser had also told the prosecutor he'd used less of the sample than had actually been consumed, something the defense interpreted as a cover-up but which Smelser said was a simple error.

It was only after Lyons' attorney raised questions that the truth came out: Smelser had contaminated all three tests with his own DNA.

"Mr. Smelser's sloppy reporting techniques and concealment of botched tests cast further doubt on whether any test he performed in this case is reliable," wrote defense attorney Jeff Cohen in a pre-trial motion seeking to exclude Smelser as an expert witness.

Smelser said he would never deliberately withhold information about his work. "There is nothing worth losing my job or reputation over -- no mistake," he said yesterday.

The defense also attacked Smelser's credentials, saying studies for his bachelor's degree in biology hadn't included a biochemistry course, a minimum requirement for crime lab DNA work. When the lab asked Smelser to take a makeup course, he skipped the lab work, according to Cohen. Crime lab officials said they waived the lab time because it was too basic.

To salvage their case, prosecutors persuaded a judge to let them send what was left of the sample to a private lab in Richmond, Calif., to be retested even though usual procedure was to hand it over to defense counsel. The DNA evidence was crucial because the victim, a young woman with an IQ of 40, would not be able to testify.

"I didn't want a cross-claim at trial that there was another person out there who might

have contributed it (DNA)," said King County Deputy Prosecutor Jim Rogers.

At a cost of \$5,035, the private lab, run by renowned forensic scientist Ed Blake, matched the DNA to Lyons, and confirmed Smelser had contaminated the first tests.

"That case started out as a total unmitigated disaster," said Blake in a telephone interview. He was particularly concerned that Smelser had failed to disclose his mistakes in his report, something Blake insists on at his lab.

Lyons, then 50, pleaded guilty to a reduced charge of third-degree rape in June 2002 and was sentenced to a year in jail. He was originally charged with second-degree rape. The lab's mishandling of the evidence likely played a "significant role" in the prosecutor's decision to reduce the charges, Cohen said.

Rogers disagreed, saying that the plea was offered because the victim wasn't able to testify. Smelser's mistake, while "unfortunate," didn't affect the outcome of the case or undermine his confidence in the lab's work, Rogers said.

"There was no systemic problem in that," Rogers said. "The quality of the crime lab work has gone up tremendously. They have great scientists there."

The crime labs' forensic scientists are now required to disclose errors in their DNA-testing reports, according to Shutler, a Canadian forensic expert hired two years ago to oversee the state system's two dozen DNA analysts. He made that change about six months ago.

"The old standard was, 'Something minor happened and I won't mention it,'" said Shutler. "I'm trying to change that attitude now."

Shutler also defended Smelser, saying aggressive defense attorneys will seize upon anything to help a client.

"It's an adversarial system," Shutler said. "The forensic scientist is often caught in the middle."

Slightest contamination detected

In the late '80s to mid-'90s, the early days of DNA "fingerprinting," it was a lot harder for forensic scientists to contaminate the tests.

A decade ago, DNA tests needed a quarter-size stain of blood or semen to produce a strong match and took about six weeks to complete. Today, the lab needs only about 40 human cells, invisible to the naked eye, to produce a DNA profile using an extremely sensitive method called "polymerase chain-reaction," or PCR.

With PCR tests, DNA is extracted from a sample, mixed with special chemicals and put into computerized machines that make thousands of copies of the DNA. The process takes days instead of weeks.

The type of PCR test now in use, called "short tandem repeats," or STR, measures DNA at 13 sites, and feeds results to a computer. STR tests can predict a DNA match that has only one in a quadrillion -- a million billion -- chance of being the same as a randomly selected person.

But the sensitivity of the test also means it detects even the slightest contamination.

In January, the Seattle lab's DNA supervisor, George Chan, was chatting with a forensic scientist who was examining evidence in a child rape case. Although Chan had no other exposure to the case, a subsequent test found Chan's DNA, as well as that of the suspect, in the evidence -- a sample taken from a pair of boxer shorts. The likely culprit: saliva spewed during Chan's conversation.

DNA analysts are now required to use a Plexiglas screen, wear a mask or refrain from talking while testing DNA, Shutter said.

The lab system has been tightening up all its procedures to reduce contamination, from training staff on sterile procedures to tracking the incidents. The DNA profiles of forensic scientists are also kept on file to compare with suspicious results. Police officers who collect evidence at crime scenes could soon be asked to do the same.

"The challenge is to contain it, identify it and disclose it," Shutter said of the risk of contamination.

The occasional "contamination event" is inevitable, said Blake, the California scientist, but crime labs aren't routinely disclosing those misuses.

"We have a duty to tell people about that," he said.

Many crime labs are "stunningly ignorant" about contamination, said Janine Arvizu, an Albuquerque-based forensic scientist who has audited federal and private industry



Dan DeLong / P-I

Forensic scientist Mike Croteau

does preliminary tests for semen on a piece of clothing -- evidence in a rape case -- in the State Patrol's Marysville crime lab. Croteau is testing for acid phosphatase, which is present in high levels in semen.

labs.

"I wish they'd step up and say, 'We need help cleaning it up,'" Arvizu said. "But they won't. It's pretty scary."

The number of incidents at the State Patrol labs, she said, indicates a "significant contamination problem."

'Royal road to a false conviction'

When the mystery man's DNA showed up in evidence from the Pacific child-rape case, Detective James Pickett was mystified.

"That was a pretty big deal," he said. "We did a lot of work trying to figure out who this other guy was."

Perplexed, Pickett pushed to have the evidence retested, but the explanation came too late.

Today, he believes what happened two years ago was an aberration. "The lab does a lot of great work," he said, "(but) they are still human."

Rogers, the King County prosecutor who handled the case, called the DNA mix-up "an issue for the case," but said the No. 1 reason behind the plea bargain was to spare the victim from testifying.

The defendant, who had a previous child molestation conviction, ended up with a 16-year prison term. The P-I is not identifying him in order to protect the victim's privacy.

The forensic scientist, Dornan, was temporarily taken off casework after the mistake was discovered, a crime lab report indicated. Dornan refused to comment on the case.

The contamination was traced to Dornan failing to sterilize scissors between cutting evidence samples in the two cases. After that problem came to light, lab officials adopted more stringent sterilization procedures.

Since then, at least two more incidents of cross-contamination between cases have occurred -- one in 2003, and one this year, records show. Both mistakes were caught before a report was issued because the contamination showed up in control samples that are not supposed to contain any DNA, lab officials said.



Dornan

Contamination in control samples is the easiest type to catch and can point to more widespread problems, said Thompson, the criminology professor.

"Who can believe the only contamination they have is those (cases) where they can detect it? There's inevitably lots more," Thompson said.

That contention was recently confirmed by a study in the May 2004 Journal of Forensic Sciences that found that clean controls don't guarantee contaminant-free evidence.

If DNA from a suspect's reference sample contaminated evidence, there'd be little chance of detecting it, Thompson said.

"That's the royal road to a false conviction."

Police nearly extradite wrong person

Crime lab forensic scientist Denise Olson called Seattle police with good news in December 2002. Her DNA testing revealed a match to the suspect in a case involving a brutal rape and attempted murder. The victim suffered a fractured skull, lacerated liver and other injuries.

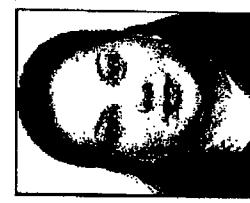
Detectives contacted a deputy prosecutor, who prepared to file charges against a former boyfriend of the military doctor attacked in the May 2002 assault. Police got ready to extradite the suspect from Denver.

Eleven days after declaring the match, Olson called back.

The test had actually ruled out the suspect. She'd misinterpreted the results, and so had a colleague who did a quick check. Another forensic scientist noticed the error during peer-review, a process in which workers double-check each other's work.

"I frankly had a brain fart," Olson said in a recent interview.

Her mistake was a "false-positive match" -- one of the worst mistakes a forensic scientist can make, said Arvizu, the auditor. "That's a classic error that reflects a bias on the part of the analyst wanting to make a match."



Olson

Records show she didn't keep notes on her calls to police, as required. She also threw out the erroneous draft report, a violation of lab policy.

Police called lab officials to complain in January 2003.

An investigation concluded that Olson had misread the test, which contained a mixture of DNA from at least two people -- a complex sample that requires careful interpretation. She missed indications in the DNA that excluded the suspect.

The lab's internal review said Olson rushed her work in order to satisfy police.

"The quality of interpretations and data review should not be compromised under pressure from the submitting agencies to prematurely release results," the internal crime lab report said.

Lab officials later issued a systemwide memo stating that cases must be reviewed by a colleague and approved by a supervisor before DNA results are released verbally.

It wasn't the first time Olson's DNA work had been criticized. Twice in the previous six months, she made mistakes, running samples in the wrong order in a robbery case and throwing out evidence swabs in a homicide.

"It was a particularly stressful time," Olson said, adding that she transferred from the Seattle to Spokane lab during that period. She had to take a backlog of six cases with her from Seattle that weren't finished.

Keeping up with the explosive demand for DNA testing is a challenge for the labs.

DNA now has the potential to help solve everything from decades-old homicides to break-ins. Even auto thefts could be solved with DNA, although the lab has to give priority to major cases right now.

Requests for genetic testing were up 60 percent in the first three months of this year compared with the same period in 2003 -- up from 305 requests to 502. The lab system has been able to cope with the increase because several staff recently finished DNA training. And six new DNA positions are proposed in next year's budget.

Right now, at least one-third of the DNA analysts are inexperienced.

Said Shutter: "They're under a hell of a lot of pressure to get it out as fast as possible and do it perfectly."

Crime lab passes 'DNA audits'

A decade ago, Congress took a stab at reform by passing the DNA Identification Act, requiring the FBI to set up a DNA advisory board to develop crime lab standards.

The law also provided funding to improve the quality of forensic labs, and money for the FBI to expand its Combined DNA Index System, or CODIS. The databank contains genetic profiles of convicted offenders and DNA from unsolved crimes.

Labs must meet the FBI's DNA standards to qualify for federal funding and have access to the national DNA databank. That is an incentive for financially strapped crime labs, including Washington's system.

In 2000, the State Patrol received \$2.1 million to hire a private lab to help clear a backlog of 30,000 DNA samples from convicted felons that had not been analyzed or entered into CODIS. An additional \$1.8 million grant in 2003 is paying for 56,000 more felon samples. The lab has also received federal grants totaling almost \$1.5 million since 2000 to upgrade lab equipment.

To satisfy FBI standards, the State Patrol must submit to an external "DNA audit" once every two years. The lab contracts with officials from other state crime labs to do the audit.

A review of three of those audits since 1997 indicated that the State Patrol labs passed most items on the checklist with flying colors.

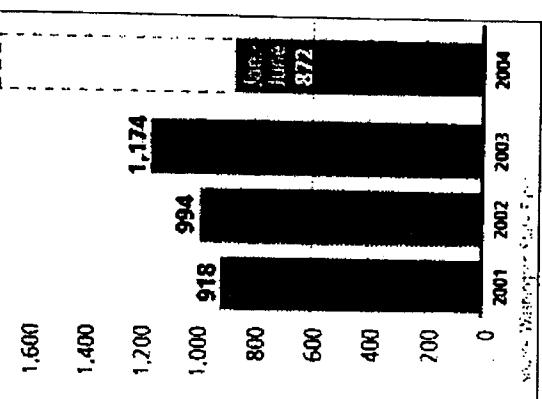
"We're audited all over the place," Logan said. "If we had any systemic problems I guess they'd come to light in the process."

The 1999 audit did note that several DNA analysts needed to verify they'd taken biochemistry courses, while the 2000 audit suggested staff needed better training in interpreting complex DNA mixtures.

SOARING CASELOADS

The number of DNA cases handled by Washington's crime labs increased dramatically after a switch was made almost four years ago to a more sensitive testing method.

PROJECTED
CASES:
1,744



The 2002 audit was done by the National Forensic Science Technology Center, a federally funded organization originally set up by the American Society of Crime Laboratory Directors. That group hires DNA experts from public and private labs to

do the audits.

The most serious problems cited during the 2002 audit were at the Spokane lab, where the inspector warned the "risk of contamination is high" because of crowding in the basement facility. A new lab is under construction.

The audit did not mention mistakes or contamination requiring "corrective action" at any of the labs, raising questions about the thoroughness of the reviews. The Marysville lab reported having no problems when records show there were at least two flawed cases in the previous year.

"It almost makes you think the whole thing is a rubber stamp," said Thompson, the criminology professor.

But Mark Nelson, who runs the audit program for the national forensic center, said auditors pull sample cases to make sure problems are corrected. "We are very thorough," he said.

A backlog of audit reports at the FBI meant the lab didn't receive proof it passed the 2002 review until three months ago.

'Nobody watching the henhouse'

Crime lab officials say the ultimate test of their work is what happens in court.

DNA results are examined by defense experts who review lab notes, analyze computer data and rerun tests to double-check accuracy. Experts also observe DNA testing at the lab when a sample is too small to divide.

Yet critics say many defense attorneys are easily intimidated by DNA cases and don't dig deeper when a suspect has been "matched" to a crime. Instead, they cut the best deal they can.

That means only a small percentage of cases are ever reviewed by defense experts, said Dan Krane, a biology professor at Wright State University in Ohio, who runs a private forensic consulting company.

"There's nobody watching the henhouse," Krane said.

Underlying this divide in the forensic community are divergent views about the role state-run crime labs play in the criminal justice system.

Crime lab employees say they are objective scientists doing their best to uncover the truth -- not biased members of the prosecution team. "We don't see ourselves that

way," said Logan, adding that one-third of their testing excludes suspects. "We have no interest in seeing the wrong person in jail for a crime."

That doesn't reassure critics, who say crime labs are primarily set up to service police and prosecutors. "That goal comes to cloud their need for scientific rigor," said Thompson, the criminology professor.

Society deserves more assurances that justice will be served when crime labs wield the powerful tool of DNA testing, he said.

"Innocent people aren't that common," Thompson said. "The question is, do they have the ability to detect when an innocent person comes along?"

TOMORROW

The crime lab system's credibility has been undermined by problem employees and lax oversight.

- See the P-I's previous crime lab investigation, *Shadow of Doubt*.

**P-I reporter Ruth Teichroeb can be reached at 206-448-8175 or
ruthteichroeb@seattlepi.com**



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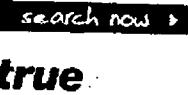
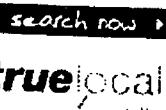
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THE NATION

DNA lab admits rape case bungle

Amanda Banks

March 16, 2006

MORE than two years after a man was charged with rape on the strength of DNA profiling, a state pathology centre has admitted it could have made a mistake when testing the evidence.

A leading defence DNA expert, NSW-based molecular geneticist Brian McDonald, says the case highlights the risks posed by databases and the reluctance of state laboratories to admit mistakes.

Dr McDonald says anything from a laboratory error to the planting of evidence might link someone on a database to a crime they did not commit.

In the West Australian rape case, PathWest has admitted it believes there may have been a "contamination event" or laboratory error in the man's case, prompting them to withdraw their report and leading prosecutors to discontinue the charges.

Defence lawyer Richard Utting said the case demonstrated potential dangers associated with an increasing reliance on DNA evidence.

His 44-year-old client was charged in December 2003 with five offences, including sexual penetration without consent and deprivation of liberty, arising from an alleged attack against a woman in November 1999.

The man denied the allegations and the woman could not identify her attacker, but the man was charged after DNA evidence was matched to his profile on the state database.

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"He said he was not there and did not know anything about it ... it all came down to DNA," Mr Utting said.

A report by PathWest found there was a one-in-10 billion chance the DNA profile found in a sperm sample taken from the woman's swabs belonged to somebody else other than the man.

"That probably would have been enough to get him convicted," Mr Utting said.

But the man continued to deny the offence and Dr McDonald was employed to assess the case.

After numerous inquiries by Dr McDonald, PathWest withdrew the earlier report and acknowledged "there may have been a contamination event or a laboratory error during the DNA extraction process".

"Here is a man who is presumed innocent and said he did not do it and yet he is facing the possibility of going to jail," Mr Utting said.

"For this sort of thing you would get at least six years."

Dr McDonald said the explanation for the mistake remained a mystery, though he suspected one of the accused man's original samples from the database had been mislabelled and confused with a sample from the rape case.

"I still have not seen an official report which, under their accreditation guidelines, they must issue," he said.

Dr McDonald said PathWest reports had been withdrawn in several other West Australian cases, which indicated the laboratory was using inappropriate statistical calculations that risked producing flawed results.

"It is quite possible people have been convicted on the strength of flawed results presented by the laboratory," he said.

"Usually in cases where reports have had to be withdrawn, there is an examination of the reasons, a correction and a review of past cases."

Dr McDonald, who has worked on criminal cases across the nation for more than a decade, said he was also alarmed by PathWest's statement that it did not have any further portions of the affected samples to enable it to verify its original findings in the rape case.

"The horror of this error relates to a problem with the databases and the failure to manage them effectively," Dr McDonald said.

The management of DNA databases should be delegated to an independent agency, he said.

PathWest would not comment yesterday as the case remained with the DPP.

Appendix (7)

REPORT OF FINDINGS

People v. Gary Leiterman
No. 04-2017-FC

Exemplars - Laboratory Error

Memo

To: Staci Bennett *AK 7.17.05*
From: Jacquelyn Kuriger
CC: Ann Gross
Date: April 29, 2005
Re: S04-09900 Contamination (extracted 1/18/05)

Identification of the problem: A weak profile that indicated a mixture was obtained from one sample in this case. A search of the employee database revealed that the predominant profile in this mixture matches BCA Laboratory employee 000053. This profile was not detected in any of the other samples extracted in this case, in other cases on the same day, or in any of the controls.

Actions taken: The sample was reextracted. The result was that no DNA profile was obtained. The entire biology laboratory including the extraction and amplification areas was thoroughly cleaned. The laboratory adopted a policy of monthly cleaning of all laboratory surfaces with 10% bleach and ethanol. The employee that matched this predominant profile is now wearing a mask while working in the laboratory.

All data showing the profile obtained and the results from the search of the employee database is attached.

State Match Detail Report
Match Date: 02/19/2005 12:04

SO4-09900
JML

Locus	Target	Candidate	Locus Match Stringency
D8S1179	MNBCA0000 QS04-09900-6B KEYBOARD	MNBCA0000 EMP-00053 Employee	Moderate
D21S11	12, 13, 16	29	Moderate
D7S820	28, 29	9, 10	High
CSF1PO	9, 10	10, 11	High
D3S1358	14, 16, 18	14, 16	Moderate
TH01	6, 8, 9	8, 9	Moderate
D13S317	10, 12	12	Moderate
D16S539	11	11	High
D2S1338	18, 19		
D19S433	10, 13, 16		
vWA	16, 17	17	Moderate
TPOX	10, 11	10, 11	High
D18S51	16	16	High
D5S818	12, 13	12, 13	High
FGA	20	20	High
Amelogenin		X	

Source ID:	N/A	N/A
Partial Profile:	No	No
Disposition:	Candidate Match	Candidate Match
Invest. Aided:	0	0

Match Summary:

13 Locus Candidates: 1
 Total Candidates: 1

Match Details:

13 Loci Match
 Match Stringency: Moderate
 Search Program: Searcher
 Minimum number of loci required to report a match: 8
 Include Candidate specimens that match on all but 3 loci.
 Maximum number of candidates to return from search: 0

Index	Total Searched
Employee	114
Totals	114

Match Detail Report
Match Date: 02/19/2005 11:59

SO4-09900
 J/K

Locus	Target	Candidate	Locus Match Stringency
D8S1179	MNBCA0000 QS04-09900-6A KEYBOARD	13	Moderate
D3S1358	14, 15, 16, 17, 18	15	Moderate
TH01	6, 7, 9.3	6	Moderate
D16S539	9, 10, 12	9, 12	Moderate
D19S433	10.2, 13, 14, 14.2	14, 14.2	Moderate
vWA	14, 15, 16	15, 19	Not a match
TPOX	6, 8, 11	8	Moderate
D5S818	11, 12, 13	11, 12	Moderate
Amelogenin		X	
CSF1PO		10, 12	
D13S317		12	
D18S51		15, 20	
D21S11		29, 30	
D7S820		11	
FGA		21, 23	
D2S1338		17	

Source ID:	N/A	N/A
Partial Profile:	No	No
Disposition:	Candidate Match	Candidate Match
Invest. Aided:	0	0

Match Summary:

7 Locus Candidates: 2
 Total Candidates: 2

not a match

no match to
 cont/batch
 J/K

Match Details:

7 Loci Match

Match Stringency: Moderate

Search Program: Searcher

Minimum number of loci required to report a match: 7

Include Candidate specimens that match on all but 1 loci.

Maximum number of candidates to return from search: 0

Index	Total Searched
Employee	114
Totals	114

State Match Detail Report
Match Date: 02/19/2005 11:59

Locus	Target MNBCA0000 QS04-09900-6A KEYBOARD	Candidate MNBCA0000 EMP-00109 Employee	Locus Match Stringency
D8S1179	13, 14	14	Moderate
D3S1358	14, 15, 16, 17, 18	16	Moderate
TH01	6, 7, 9, 3	6, 9, 3	Moderate
D16S539	9, 10, 12	9, 12	Moderate
D19S433	10, 2, 13, 14, 14, 2	14, 17	Low
vWA	14, 15, 16	17	Not a match
TPOX	6, 8, 11	11	Moderate
D5S818	11, 12, 13	11	Moderate
Amelogenin		X, Y	
CSF1PO		12, 13	
D13S317		8, 12	
D18S51		11, 16	
D21S11		29, 30	
D7S820		7, 9	
FGA		21, 24	
D2S1338		17, 25	

Source ID:	N/A	N/A
Partial Profile:	No	No
Disposition:	Candidate Match	Candidate Match
Invest. Aided:	0	0

Match Details:

7 Loci Match

Match Stringency: Low

Search Program: Searcher

Minimum number of loci required to report a match: 7

Include Candidate specimens that match on all but 1 loci.

Maximum number of candidates to return from search: 0

Index	Total Searched
Employee	114
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Jaidyn evidence contaminated, says forensic expert

By Gary Tippet
February 4, 2004[Print this article](#)[Email to a friend](#)

Clothing found with murdered toddler Jaidyn Leskie was cross-contaminated with the DNA from a rape victim during a mix-up at the Victoria Police Forensic Services Centre, a US expert claimed yesterday.

Professor William Thompson, a member of the defence team in the OJ Simpson case, told the inquest into Jaidyn's death that the chances of a clean DNA match between the rape victim and material found on the child's bib and track pants was one in 171 billion. The chances of such an "adventitious match" - where DNA from two unrelated people matches - "would be quite literally and incredibly unprecedented" and would call into question the basis of current forensic science, he said.

It would be "extraordinarily unlikely" the DNA was from anyone other than the rape victim, identified only as P.

The inquest last year heard that DNA traces from P, who had no apparent links to the Leskie case, were found on Jaidyn's clothes, recovered with the toddler's body in Blue Rock Dam, near Moe, on January 1, 1998 - six months after he disappeared from the home of his babysitter, Greg Domaszewicz. Mr Domaszewicz was later acquitted of his

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Giving evidence by telephone link, Professor Thompson, a lawyer and chair of the department of criminology, law and society at the University of California at Irvine, said he had no evidence of how contamination might have occurred. But his "guess" was that it happened during testing of materials in the two cases, most likely between February 2 and 4, 1998.

Asked if he could completely rule out an adventitious match, Professor Thompson said no. "But I consider it so extraordinarily unlikely that it's not worthy of my consideration."

The inquest before Victorian coroner Graeme Johnstone continues on Friday.

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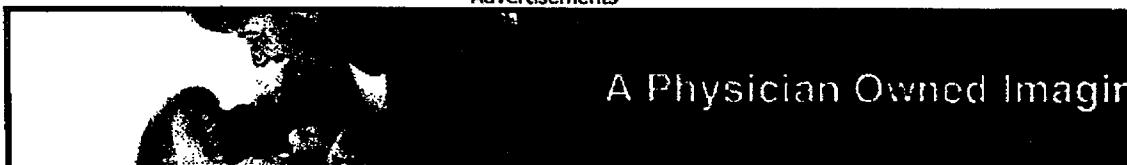
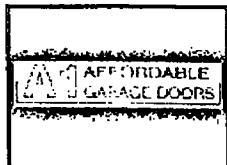
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Man accused in '68 killing freed by flaw in evidence

Posted by the Asbury Park Press ON 02/7/06

BY KAREN SUDOL
FREEHOLD BUREAU

FREEHOLD — A murder charge has been dismissed because of unreliable DNA evidence against a man charged 35 years after the 1968 slaying of a 13-year-old girl, prosecutors announced.

Jerry Lee Bellamy, 54, is expected to be released from New Jersey State Prison, Trenton, within 24 hours, Monmouth County Prosecutor Luis A. Valentin said on Monday.

The Prosecutor's Office administratively dismissed the charges in court after determining that DNA evidence linking Bellamy to 13-year-old Jane Durrua's murder on a Middletown pathway on Nov. 4, 1968, was unreliable. State Police had determined the evidence was potentially cross-contaminated.

The Middletown eighth-grader had been raped, beaten and strangled as she walked home from a football game on a path along railroad tracks, authorities have said.

"Over the last few weeks, this office has worked tirelessly to obtain the information that was necessary to make a responsible decision about the continued prosecution of Jerry Lee Bellamy. At present, all reasonable investigative possibilities have been exhausted," Valentin said in a prepared statement. ". . . Therefore, I have no choice but to secure dismissal of the murder complaint. . . . It was my legal and ethical obligation to do so."

Bellamy's June 2004 arrest — made while he was being held at a maximum-security facility for sex offenders at East Jersey State Prison in Woodbridge, days away from release for sex-crime charges unrelated to the homicide — was based on DNA evidence from a semen stain on Durrua's underwear.

Unsolved for 30 years, the case was re-examined in 1998 to take advantage of advances in DNA testing. Durrua's underwear and a slip were submitted for forensic testing with the State Police.

Evidence undermined

But as prosecutors prepared for the case in January 2005, State Police gave them

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information that raised questions about the DNA match, Valentin said in the prepared statement. While prosecutors consulted with an independent DNA agency, the State Police conducted a thorough review of the results. A pre-grand jury interview this Jan. 12 with a witness authorities wouldn't identify produced more information that undermined the reliability of the DNA match, said Valentin, which prompted an intensive investigation by prosecutors. That investigation led to the decision to dismiss the charge.

By a fluke coincidence, the clothing from Durrua's case and clothing evidence from an Atlantic City rape case had both been examined on Sept. 15, 1999, by the same criminalistic scientist at the State Police's Eastern Regional Laboratory in Sea Girt, said State Police Lt. Col. Frank Rodgers, who oversees the State Police Office of Forensic Science. The scientist prepared Durrua's stain sample to be shipped to Orchid Cellmark Laboratories for DNA analysis, said Rodgers. That lab developed a DNA profile that matched Bellamy's.

That scientist learned only in January 2005 that the two samples he had prepared ultimately matched Bellamy's DNA profile. There was no way to know in 1999 that the cases were linked via Bellamy's DNA profile, Rodgers said.

The scientist immediately notified his supervisor of the coincidence and the concern about cross-contamination. The Prosecutor's Office was then contacted, Rodgers said.

"We worked for a year trying to establish one way or another (whether any of the evidence was cross-contaminated). Unfortunately we weren't able to determine whether it (Durrua's evidence) was or wasn't contaminated," he said.

Rodgers and State Police Capt. Al Della Fave said everyone was disappointed in the results.

"We'd give anything to be able to have this back and be able to reprocess it now under today's system," said Della Fave. "We're tremendously disappointed because the bottom line is . . . they said they can't say he did it but they can't say he didn't do it." He added, "No one on either side wanted to see him walk."

Rodgers said a similar case would not happen today because the State Police now have a new forensic lab in Hamilton, which is "entirely computerized and where every piece of evidence is bar-coded."

Evidence is processed and submitted to their own DNA lab for analysis, he said. Computers would immediately notify scientists of the same DNA profiles for two different cases.

The Atlantic City case

It's not clear if Bellamy's April 1999 charge for the rape of an 18-year-old woman in an Atlantic City motel room is the case in which State Police scientists were processing evidence. In that case, Bellamy pleaded guilty to criminal sexual contact and was sentenced to 18 months in prison, but the state Supreme Court had ordered his guilty plea vacated for reasons that had nothing to do with DNA evidence.

Bellamy's lawyer, Regina Sauter, said the Office of the Public Defender notified him of the dismissed charge Monday. Sauter, who had not spoken directly to Bellamy, was not aware if he had been released Monday evening.

"We were told that the Prosecutor's Office had some concerns about the reliability of the DNA. It's my understanding that Prosecutor Valentin and (First Assistant Prosecutor) Peter Warshaw made whatever analysis they had to make. As far as my understanding, I think they acted very professionally and diligently and brought it to our attention and . . . did what they had to do."

Valentin said Durrua's family has been informed of the dismissal.

"They are an incredibly strong family," he said. "The Monmouth County Prosecutor's Office is extremely appreciative of their courtesy and support."

Appendix (8)

REPORT OF FINDINGS

People v. Gary Leiterman
No. 04-2017-FC

Laboratory SOPs and NRC Recommendations

NATIONAL RESEARCH COUNCIL

• *Mixed samples* are contaminated by their very nature. Postcoital vaginal swabs, for example, are expected to contain a mixture of semen and vaginal fluids, and shed blood from different persons might run together. Such samples are part of the territory of forensic science and must be dealt with whenever feasible. Sperm DNA can be separated from nonsperm DNA with differential DNA extraction. Detection of sample mixtures of other kinds is generally revealed with genetic typing. Mixtures show the composite of the individual types present; the proportions of the different types reflect the proportions of the contributors to the mixture. Testing samples collected from different areas of a mixed stain can sometimes allow the genetic types of the contributors to be more clearly distinguished.

• *Carryover contamination* is well recognized in PCR testing, although it is not an issue in VNTR analysis. This kind of contamination occurs when a PCR amplification product finds its way into a reaction mix before the target template DNA is added. The carryover product can then be amplified along with the DNA from an evidence sample, and the result can be that an incorrect genetic type is assigned to the evidence sample. A false match can occur if the genetic type of the contaminant matches by chance the genetic type of a principal in the case; in the worst case, the contaminant originates from another party in the case. Primary safeguards against carryover contamination include the use of different work areas for pre-PCR and post-PCR sample-handling, the use of biological safety hoods, the use of dedicated equipment (such as pipetters), and maintenance of a one-way flow of material from pre-PCR to post-PCR work areas so that PCR product cannot come into contact with sample materials. Those safeguards are outlined in the TWGDAM QC and QA guidelines (TWGDAM 1991, 1995). Sterile precautions similar to those used in handling infectious-disease agents in microbiology laboratories may also protect against carryover contamination; many of the contamination issues in PCR work and in infectious-disease microbiology are largely the same. Procedural safeguards can also be used. Genetic typing of evidence samples before the typing of reference samples protects against contamination of the former with the latter. Standard blank controls can be used to detect reagent and work area contamination. If there is any question regarding PCR carryover contamination, retained portions of the evidence item can be tested.

Analyst Bias

An analyst can be biased, consciously or unconsciously, in either direction. Genetic-typing results, however, are usually unambiguous. Appendix page One cannot make one genetic type look like another simply by wishing it so. In VNTR analysis, patterns must meet empirically defined objective match criteria to be said to match. If

DNA Section Procedures Manual

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BCI&I Crime Laboratory

Section: DNA		Approved:
Subject: Clean Technique	Issue Date:	Revision Date:

9 CLEAN TECHNIQUE

Initial Steps Prior to Starting Analysis

1. Decontaminate the surface where samples are to be processed with a 10% bleach solution. The entire laboratory should be wiped with a 10% bleach solution at least weekly. Bleach solution stored in open containers (i.e., a squirt bottle) will evaporate. If a strong bleach odor is not present, replace the bleach solution. The bleach solution should be made fresh each week.
2. Decontaminate all instruments which will be used to process forensic samples (e.g., forceps, scissors, scalpel/razor blades, bone cutting equipment, pipetters and metal probes) by autoclaving or rinsing with a 10% bleach solution. Caution: some surfaces may resist wetting and will require addition of a detergent.
3. Have clean containers or surfaces ready to place each sample on. Large glassine weighing papers work well.
4. Have a beaker of approximately 10% bleach solution available to rinse instruments between samples. Some people prefer to rinse instruments in a second beaker of distilled water.
5. Have Kim-wipes available to wipe off instruments after rinsing. The bleach may destroy the sample if not wiped off. Use a new Kim-wipe each time.
6. Do not process DNA samples on an evidence examination area, countertop or surface.
7. Have a sterile swab or piece of cotton material available to process as a manipulation blank for each extraction protocol followed.
8. Each scientist should have their own mini-stocks of DNA reagents. One large stock solution could initially be prepared and then divided.
9. Clean centrifuge rotors and housings with soapy water followed by 10% bleach solution as needed. **Caution: do not use bleach solution to remove blood from centrifuges. Staining may result.**
10. Waste from the amplified DNA area should be autoclaved prior to pickup by the cleaning staff or should be placed in a closed bag and removed from the building by the laboratory staff.

Sample Processing

1. Process questioned samples through typing prior to opening and extracting reference standards. Reference standards may be processed through typing prior to opening and extracting questioned samples in cases where it is necessary to evaluate the appropriateness of a specific DNA method.

BCI&I Crime Laboratory

Section: DNA		Approved:
Subject: Clean Technique	Issue Date:	Revision Date:

2. Process each sample individually. Put away one exhibit before opening the next. Work with very small or dilute samples prior to opening large or concentrated samples. Use this order at each step of the analysis.
3. Prepare a manipulation blank for each group of samples processed and each extraction method used..
4. Use clean instruments for each item. Use a fresh piece of glassine paper for each item.
5. Close tubes immediately after labeling, then have only one tube at a time open. (Do not process samples in a manner that would allow cuttings, flakes or aerosols of biological material to fall into tubes destined to hold another sample.) Close each tube immediately after a sample has been placed into it to prevent any cross contamination of samples.
6. Use microfuge tube openers at all times rather than fingers to open tubes. Rinse these in 10% bleach solution frequently.
7. Use ART (aerosol resistant tips) tips at all times. Place the tip on the pipettor immediately before use. If the pipettor has been set down, do not use the tip.
8. During sample extraction, pour the approximate volume of all reagents required for a set of samples into a disposable beaker. Never place a pipettor or pipette into a stock reagent bottle. If sample is present in the tubes, use a new ART tip to add the aliquoted reagent to each sample. If no sample is present in the tubes, it is not necessary to change tips. This applies to for pre-aliquoted reagents such as proteinase K and DTT as well. Discard the beaker and aliquot of reagent when finished. This does not apply to phenol/chloroform or chloroform because of the expense of disposing of hazardous chemicals. However, each analyst has their own small stocks of these reagents and is very careful not to place used pipettes or pipette tips into the stocks.

All stock reagents should be closed when processing stains for extraction.

9. DO NOT use repeating pipettors with tubes which already contain samples.
10. Process the manipulation blank sample as all other samples.
11. Use "Spin-EASE" tubes to spin stain extraction buffer from cloth or cotton.
12. Change gloves frequently during processing. Always change gloves if they become contaminated with sample.
13. Avoid getting any liquid on the lip of microfuge tubes. Whenever liquid may be on the tube cap, briefly spin the tube prior to opening.



Cellmark Diagnostics, Inc.

20271 Goldenrod Lane • Germantown, MD 20876
1-800-USA-LABS

PCR 1994

STANDARD OPERATING PROCEDURES

PCR94 - 82

A subsidiary of Lifecodes Corporation

Title : Evidence Handling Procedure

File Location : SOPs**Originator : A. Corey****Modification : 4****K. Sheridan****Date of Issue : APR 29 1994**

- c. During extractions, sample tubes are labelled twice with case and accession numbers. When transfers are made from one sample tube to another the following witnessing procedure is performed: Only the sample DNA tube and its corresponding transfer tube are open. All other sample tubes are closed. A witness verifies that the two tubes have the same case and accession numbers prior to transfer.
- d. For RFLP analysis, the gel loading process is witnessed. During gel loading, the witness ensures that the transfer of each sample from the sample tube is made to the correct well of the gel. From the time DNA samples are transferred from the gel to the nylon membrane, the gel number is used as the identifier for witnessing correct membrane processing during hybridization and autoradiography. Once an autoradiograph is generated, the transfer of sample details to autoradiographs is verified as well.
- e. For PCR analysis, amplification tubes and DNA probe strips are labelled with the case and accession numbers. A witness verifies labelling and sample transfers for amplification and hybridization.
- f. Sample contamination during DNA extractions is avoided by using only autoclaved pipet tips, tubes and glassware, and by changing pipet tips after each pipetting. Only one DNA sample tube is open at a time. In addition, evidence samples are extracted separately from known standards to avoid any possible cross-contamination of samples.
- g. Additional specific sample handling precautions may be included in the standard operating procedures relevant to a particular type of DNA analysis (e.g., DQ α PCR analysis).

Date Written : April 8, 1992
Modification Date : April 29, 1994**Page 7 of 10**

ORCHID CELLMARK FORENSICS
2600 Stemmons Freeway, Dallas, Texas 75207
Standard Operating Procedures

Standard Operating Procedures
Forensic Laboratory
Orchid Cellmark Dallas

(Version 0105.2; Effective Date: July 1, 2005)

Approved by:

Rick W. Staub, Ph.D. _____
Senior Manager, Forensic Laboratory Director

Judith I. Floyd, BS _____
Forensic Laboratory Manager

Jamie King, MS _____
Technical Leader

16. Disposable gloves
17. Lab coats
18. Forceps
19. Shaking water bath (56⁰C)
20. Shaking water bath (50⁰C)
21. Orbital shaker
22. Vacuum source
23. Hood

SPECIAL PRECAUTIONS:

1. Change gloves frequently. Prior to leaving the lab area, always remove gloves and wash hands.
2. It is important that the DNA extraction of questioned samples be performed at a separate time or place from the DNA extraction of known samples. This precaution will help prevent potential cross-contamination between evidence samples and reference samples.
3. Whenever possible, extract samples containing high levels of DNA (for example, whole blood) separately from samples containing a low level of DNA (single hairs, small bloodstains, etc.) to minimize the potential for sample-to-sample contamination.
4. Use disposable gloves at all times.
5. Clean scissors thoroughly with alcohol wipes, 10% bleach or use fresh scalpel blades after cutting each evidence sample.
6. Use a clean cutting surface for each piece of evidence.
7. Sterilize those solutions that can be heated in an autoclave without affecting their performance or use sterile water and a sterile container. Steam sterilization under bacterial decontamination conditions degrades DNA to a very low molecular weight, rendering it un-amplifiable.
8. Use sterile disposable pipette tips and microcentrifuge tubes.

5.0 EXTRACTION PROCEDURES

All extraction steps and procedures must be performed in the extraction work area dedicated to STR analysis or mitochondrial extractions. Prepare extracts of known samples and questioned samples at different times. Record the amount of sample consumed during processing. A reagent blank is required with each batch processed. Use reagents and equipment dedicated to the operations of extraction.

5.1 WHOLE BLOOD, BLOODSTAINS, OR SALIVA

1. If the sample is a bloodstain, cut approximately 3mm² sample for extraction. If the sample is a saliva stain on filter paper or gauze, cut approximately 3-5mm². If the sample is a buccal swab, use ½ swab. If whole blood is the standard, use 10 ul. Place the sample in an *appropriately color coded* tube for the victim's standard and an *appropriately color coded* tube for the suspect's standard.
2. To the sample, add 500 ul Digest Buffer, 15 ul of 10 mg/ml Proteinase K and mix gently. Incubate at 56 degrees C for at least 1 hour but no more than 30 hr.
3. To separate DNA from protein fragments, in a fume hood, add 500 ul buffer-saturated phenol/chloroform/isoamyl alcohol (lower phase) and vortex for 15 seconds until emulsion forms.
4. Spin in a microcentrifuge for 3 to 5 min at 10,000 to 15,000 rpm.
5. Transfer the aqueous layer (*top* layer) to a new, labeled tube.
6. To the aqueous phase, add 500 ul of n-butanol saturated with water. (Top layer of n-butanol/water stock solution is the n-butanol phase.) This removes residual P/C.
7. Vortex tube to thoroughly mix n-butanol and aqueous phase. Spin 2 min. at 10,000 rpm.
8. Remove aqueous phase (*bottom* layer) to the upper reservoir of a Microcon 100. Centrifuge at 3000 rpm for 12 to 15 min. or until most of the liquid has passed through the membrane.
9. Add 500ul of sterile water (or less if necessary) to the concentrated DNA solution in the upper reservoir. Centrifuge at 3000-3300 rpm for 12 to 15 min. or until volume of solution in upper reservoir is 25 to 100ul. If all of the liquid has transferred through the membrane, add 25 to 100ul of sterile water, resuspend the sample by shaking gently from side to side, flip upside down into the collection tube and proceed with the centrifuge step.

FORENSICS



STANDARD OPERATING PROCEDURES

BRT Laboratories, Inc.
Genetic Testing/Forensics

STANDARD OPERATING PROCEDURE

Section 1.5: SAMPLE PROCESSING LABORATORY PREPARATION

File Location: SOPs

Originator: Nana Lamoué-Smith

Modification Number: 0

Date of Issue: 04.15.02

PURPOSE:

QUALITY ASSURANCE:

Refer to the *BRT Forensic Quality Assurance Manual* for more information.

SAFETY:

1. Refer to the *BRT Laboratory Safety and Exposure Control Manual* for more information.
2. Refer to the appropriate MSDS sheets.
3. All proper personal protective equipment must be worn.

PROCEDURE:

1. First, decontaminate the processing area with 10% bleach and/or cleaning solution. Place down a sheet of laboratory bench paper or a kimwipe.
2. Make sure that all tubes, reagents, and utensils are decontaminated and ready for use.
3. Samples will be processed individually. Initial and date each package when it is opened. Open the package in a place where the seal is not present (if possible). Seal, initial and date (across the seal) when finished with a package. Place aside the previous sample before proceeding.
4. The following rules should be followed for evidence processing and extraction:
 - a. Process evidence first before references. Reference samples should be extracted at a different time from evidence.
 - b. Process small/dilute samples prior to large/concentrated samples.
 - c. Process reagent blanks last as a part of a group of samples.
 - d. Avoid consuming more than half of the evidence sample unless authorized by the client to do so.
5. Use clean utensils for each new evidence item. Bleach the area and change the paper/kimwipe.
6. Open only one tube at a time. Close tube immediately after sample has been added and label appropriately (see *Specimen Numbering Protocol*). Set tube aside.

**STANDARD OPERATING PROCEDURES
FORENSIC SERVICES DIVISION,
DETROIT POLICE DEPT.
SEROLOGY UNIT
April 8, 2000**

DNA for PCR amplification and analysis may be extracted from fresh or frozen whole blood, peripheral blood lymphocytes, blood stains, sperm cells, hair, tissue, bone and other samples. Due to the varied nature of evidence samples, slightly different extraction procedures are required for each type of specimen. Protocols in this section outline a phenol-chloroform method of DNA extraction, a Chelex® method for rapid DNA extraction and a QIAamp spin column DNA extraction protocol. A Reagent Blank must be included with each run as a check for possible contamination of extraction reagents by other human DNA or amplified product. The Reagent Blank will be amplified and typed along with the test samples.

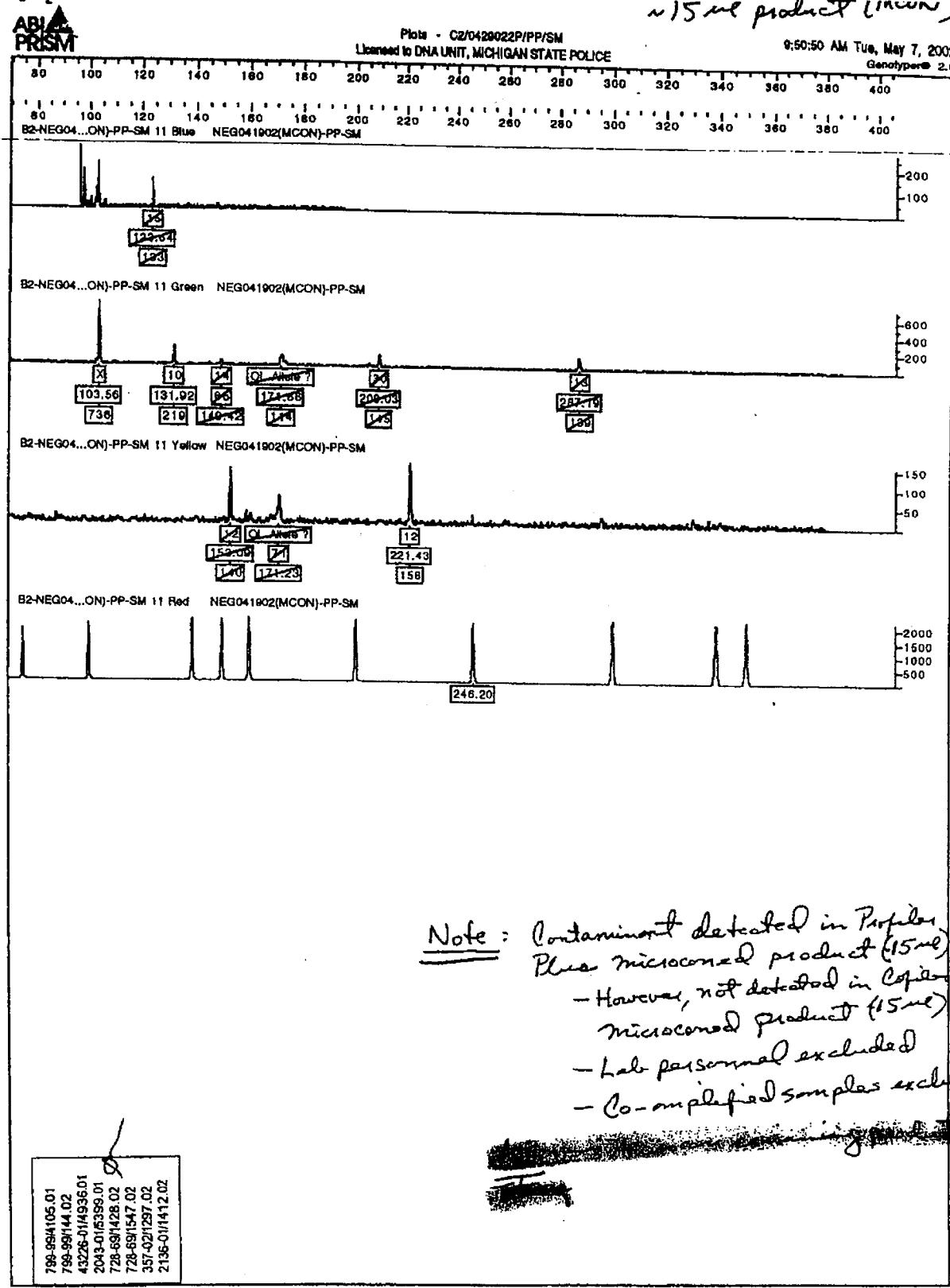
It is important to handle all samples in a manner which will prevent contamination by extraneous DNA. Evidence samples shall be prepared at a separate time from reference samples.

Warnings To Users

Analysts should read the Material Safety Data Sheet (MSDS) and label warnings furnished by the supplier of each chemical or reagent used.

1. Biological samples have the potential to transmit hepatitis or other infectious diseases, and should be handled with appropriate precautions. Never pipette by mouth. Instead use mechanical pipetting devices. Wear gloves whenever handling blood samples. To avoid generation of aerosols, steps involved in the mixing of blood or cells derived from blood will be performed in a biosafety hood. Decontaminate work surfaces before used with a 10% bleach solution. Contaminated items should be autoclaved before disposal.
2. Phenol can cause severe burns. Use safety glasses and gloves when working with phenol or phenol-chloroform. If phenol solutions come into contact with skin or eyes, wash immediately with large volumes of water. Do not wash with ethanol.
3. Ethidium bromide is a powerful mutagen. Wear gloves and a mask when weighing out. When handling solutions, wear gloves and do not mouth pipette. Avoid splashing when disposing of gel running buffers containing ethidium bromide.
4. Other substances used in these procedures, such as n-butanol and bleach, also may be hazardous.

Steps where the extractions can be discontinued temporarily without compromising the analysis are indicated by a double asterisk (**) in the margin.



For research use only

三

Not for use in diagnostic systems

Profiler-Plus / Worksheet

Friday, April 19, 2002

Analyst: JW

Laboratory / Record Number Key

799-99	/ 4105.01 \$144.02
43226-01	/ 4936.01
728-69	/ 1428.02
2136-01	/ 1412.02

I. Sample Preparation

1. Prepare 0.5-1.25 ng of target DNA in a total volume of 10 μ L. Use Sterile Water.

II. Master Mix Preparation

Kit Lot: 0201050

Number of Samples: 14

Master Mix Components	Lot Number	Volume (μ L) per Sample	Final Volume (μ L)
Rx Mix	36168001046	10.5	147
Primers	430332812022	5.5	77
Taq Gold/ 2.5 units	C08703	0.5	7

III. Final Amplification Sample Preparation

1. Dispense 15.0 μ L of master mix for each reaction into a PCR tube
2. Add the sample prepared in step I to the reaction mixture. Final volume: 25.0 μ L

Thermocycler: 123

Control DNA 9947A: 36167611024

	1	2	3	4	5	6	7	8	9	10	11	12
A	144.02	4105.01	4936.01	4936.01	4936.01	4936.01	1428.02	1412.02				
A		B	C	D	E	F	A	B				
B	4105.01		4936.01	4936.01	1412.02	NEG 0.41902	POS 0.41902					
C												
D												
E												
F												
G												
H												

IV. 310 Master Mix Preparation

Master Mix Components	Lot Number	Final Volume + 2 μ L
Formamide (24 μ L/sample)	071K1514	338
Rox 500 (1 μ L/sample)	36095702136	16

V. 310 Sample Preparation Allelic Ladder: 430834501014

1. Prepare Samples by adding 1 μ L of amplified product to 24 μ L of master mix. Prepare Allelic Ladders by adding 3 μ L of Allelic Ladder to 25 μ L of master mix.

DNA-WS-5
MSP DNA Labs

4/3/02 dm

Laboratory Number 728-69
DNA Record Number 1428.02
Forensic Scientist as

~~Stored in and removed from _____
on _____ / _____ at _____ : _____ by _____~~

EVIDENCE RECEIVED

1428.02 A

$\sim 2\frac{1}{2} \times 1\frac{1}{2}$ " cut off

One (1) microtube labeled "PANTY HOSE AS FRONT CROTCH AREA" cont. one (1) cutting.

Appendix (9)

REPORT OF FINDINGS

People v. Gary Leiterman
No. 04-2017-FC

Exemplars - Sample 1428.02A (Pantyhose)

Appendix (10)

REPORT OF FINDINGS

People v. Gary Leiterman
No. 04-2017-FC

MSP DNA SOP - Section 2.4.3.1.3

2.3.3 Control Performance Criteria - (9947A and ILC)**2.3.3.1 Genotypes must match at each locus.**

2.3.3.1.1 Relative fluorescent intensity must meet minimum reporting threshold of 150 RFU.

2.3.3.1.2 Performance failure

2.3.3.1.2.1 Incorrect genotypes - Samples must be re-amplified.

2.3.3.1.2.2 No amplification - Samples must be re-amplified.

2.3.3.1.2.3 Relative fluorescent intensity thresholds

2.3.3.1.2.3.1 The 9947A and ILC are single source samples.

2.3.3.1.2.3.2 Alleles above 4500 RFU may be interpreted if the peaks are symmetrical and sharp.

2.3.3.1.2.3.3 Alleles falling below 150 RFU will be evaluated on the merits of the profile.

2.3.3.1.2.4 If sample is available the run should be re-amplified.

2.3.3.1.2.5 If there is insufficient sample to re-amplify, the control performance will be evaluated to determine if it is isolated to a single reaction or is a trend associated with the entire run.

2.3.3.1.2.6 Control fails to meet relative intensity threshold at some or all loci.

2.3.3.1.2.6.1 If there is a trend that the entire run is showing characteristics exhibited in the control the run is voided.

2.3.3.1.2.6.2 If the other positive control(s) associated with the amplification run (ILC or 9947A) meets expected standards; and the over-all characteristics of the run do not mirror the performance of the failed control (not meeting relative fluorescent intensity criteria); the data can be reported with a written statement in the report about the failed control.

2.4 Negative Controls**2.4.1 Purpose: To provide a documented control to monitor reagents, test environment and processing procedures associated with the complete PCR analytical process.****2.4.1.1 STAIN REAGENT CONTROLS - A blank control that is processed with the stain extraction procedure.**

2.4.1.1.1 The Stain Reagent Control is set up with each set of stain extractions run concurrently on the same day.

2.4.1.2 DIFFERENTIAL REAGENT CONTROL - A blank control that is processed with the differential extraction procedure.

2.4.1.2.1 The Differential Reagent Control is set up with each set of differential extractions run concurrently on the same day.

2.4.1.3 AMPLIFICATION NEGATIVE CONTROL - A blank control that is processed with the amplification procedure.

2.4.1.3.1 The Amplification Negative Control is set up with each set of amplifications run concurrently on the same thermal cycler.

2.4.2 Negative Controls - Performance Criteria

2.4.2.1 Alleles should not be observed in these samples.

2.4.2.2 Peaks below 150 RFU and corresponding to allele positions should be evaluated carefully. If it is determined that peaks correspond to alleles and a potential genotype proceed to 2.4.3 (Failure of Negative Controls).

2.4.3 Failure of Negative Controls

2.4.3.1 Failure of negative controls can result from a variety of situations. Each failure will be evaluated on a case by case basis.

- 2.4.3.1.1 The point and source of the failure should be determined when possible.
- 2.4.3.1.2 If the alleles and/or genotypes observed in the negative control(s) for a set of reactions are the same as the genotype that supports an inclusion, the data for those related samples is voided.
- 2.4.3.1.3 If the alleles or genotype observed are not associated with a genotype that supports an inclusion, the data may be interpreted cautiously. If results are reported, the failed control must be reported in the written report.

2.5 Redundant Loci Across Two Or More STR Multiplex Systems

2.5.1 Single Source Samples (i.e. known blood samples)

- 2.5.1.1 If two or more STR systems are utilized in which redundant loci are present (i.e. Profiler Plus™ / Cofiler™), the DNA types at corresponding loci must be consistent with one another.
- 2.5.1.1.1 If a complete mismatch is observed at a overlapping locus, the samples should be rerun.
- 2.5.1.1.2 If partial consistency is observed, (i.e. allele dropout), the data will be evaluated on a case by case basis.

3. Allele Declaration (Identification)

3.1. Alleles are declared when they meet the following criteria

- 3.1.1. The allele is within a ± 0.5 -bp "window" around the size obtained for the corresponding allele in the Allelic Ladder.
- 3.1.2. The peak height is ≥ 150 RFU (Relative Fluorescent Units). This minimum peak height threshold is set to avoid typing less than 35 pg input DNA.
- 3.1.3. If the allele is in a stutter position, the peak height ratio must be greater than the stutter threshold that has been determined for that locus. Note: The major peak must be ≤ 4500 RFU to calculate the peak height ratio.
- 3.1.3.1. If the peak height ratio is greater than the stutter threshold the allele is declared.
- 3.1.3.2. If the peak height ratio is less than the stutter threshold, the allele is not declared
- 3.1.3.2.1. Percent Stutter Ranges

D3S1358	vWA	FGA	AMEL	D8S1179	D21S11	D18S51	D5S818	D13S317	D7S820	D16S539	TH01	TPOX	CSF1PO
$\leq 15\%$	$\leq 15\%$	$\leq 15\%$	N/A	$\leq 12\%$	$\leq 15\%$	$\leq 18\%$	$\leq 12\%$	$\leq 12\%$	$\leq 12\%$	$\leq 15\%$	$\leq 7\%$	$\leq 7\%$	$\leq 10\%$

4 Artifacts: Artifacts and anomalies are encountered during the fluorescent analysis of Short Tandem Repeats (STR). Many times these artifacts and anomalies exhibit characteristics that are predictable and well defined. In these instances it may not be necessary to rerun the sample. Listed below are recommendations for handling these events:

4.1. General Considerations

- 4.1.1. The position of the artifact or anomaly in relation to the allelic ladder should be considered in each instance.
- 4.1.2. Samples exhibiting single peaks at one color outside the range of the allelic ladder should be rerun to determine that the peak does not represent a potential variant.
- 4.1.3. Both the GeneScan and Genotyper data should be evaluated to make the diagnosis of the artifact or anomaly.
- 4.1.4. The characteristics of the artifact or anomaly should be carefully evaluated before changes in injection time, dilution adjustment or re-amplification are initiated.