NEST Project
Data Confidentiality

Terry Fenger
ASCLD Annual Meeting
San Francisco, October 2006
Expert Systems For DNA Analysis

- E.S.: Software Programs or Sets of Programs Capable of Automated Review Of DNA Data
- No Human Intervention
- Expected To Eliminate or Reduce Last Remaining Bottleneck, Data Analysis And Review
- Single Source Samples, Phase 1
Appendix B Of NDIS: DNA Data Acceptance Standards

• Guidelines For Submitting Requests For Approval of an Expert System For Review Of Offender Samples

• Single Source Sample Specific

• Guidelines For Use of Expert Systems With Use Of Mixtures Not Yet Developed
NEST Objectives

• Evaluate Expert Systems Commercially Available
• Completely Housed In Laboratory (Not Network Dependent)
• Require No Programming Knowledge
• Three Expert Systems Identified
NEST Expert Systems

- GeneMapper ID v. 3.2, Applied Biosystems
- FSS- I³ Promega Corporation, FSS
- True Allele System 2, Cybergenetics
- Evaluated Based On Administrative and Technical Levels
Data Confidentiality

- Phase 1: Expert Systems Evaluation Using Single Source Samples
- CODIS DNA Data Not Identifiable To An Individual
- Representative DNA Used To Optimize Expert System
- Vendor (Non Criminal Justice) Access To DNA Data
- Phase 2: Mixture Analysis: Networked/ Free Standing System
DNA Identification Act of 1994

- Section 210304: Index to Facilitate Law Enforcement Exchange of DNA
- “DNA Records and DNA Analysis …Disclosure…to Criminal Justice Agencies for Law Enforcement Identification Purposes,
Resources: Use Of DNA Records

http://www.aslme.org/dna_04/grid/index.php

• The American Society of Law, Medicine and Ethics

• “Survey of State DNA Database Statutes”, Seth Axelrad, Research Assistant, 2004

• Each State Surveyed For Adult, Juvenile and Suspect/Arrestee Categories
ASLME Survey: Subsections

- Inclusion Criteria per State’s Database
- Retention Of DNA Samples and Records
- Authorized Uses of the Databases, Law Enforcement Purposes And Improvement of DNA Database**
- Sanction for Misuse of the Database, Includes Improper Disclosure of DNA Records and Samples
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Are All Felonies Included as Qualifying Offenses?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Are Misdemeanors included as Qualifying Offenses?</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes*</td>
</tr>
<tr>
<td>Misdemeanor Sex Crimes</td>
<td>Sexual misconduct</td>
<td>Sexual assault (4*)</td>
<td>Sexual assault of spouse (judge can downgrade to misdemeanor)</td>
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<td></td>
<td>Sexual abuse (2*)</td>
<td>Sexual abuse of minor (4*)</td>
<td>Indecent exposure (3rd violation)</td>
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<tr>
<td></td>
<td>Indecent exposure (2*)</td>
<td>Public sexual indecency (3rd violation)</td>
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<td></td>
<td>Enforcing child to enter place for immoral purposes</td>
<td>Promoting prostitution of minors (3*)</td>
<td>[Offense for which one must register as a sex offender]</td>
</tr>
<tr>
<td>Misdemeanor Violent Crimes</td>
<td>Criminally negligent homicide</td>
<td>Assault (4*)</td>
<td>Unlawful imprisonment of minor</td>
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<tr>
<td></td>
<td>Assault (3*)</td>
<td>Reckless endangerment</td>
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<td></td>
<td>Menacing</td>
<td>Stalking (2*)</td>
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<tr>
<td></td>
<td>Reckless endangerment</td>
<td>Custodial interference (2*)</td>
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<td></td>
<td>Criminal coercion</td>
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<td></td>
<td>Unlawful imprisonment (1*)</td>
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<tr>
<td></td>
<td>Unlawful imprisonment (2*)</td>
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<tr>
<td></td>
<td>Domestic violence (3*)</td>
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<tr>
<td>Misdemeanor Property Crimes</td>
<td>***</td>
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</tbody>
</table>
| Miscellaneous Misdemeanors/Notes | *** | *** | "Those convicted of a misdemeanor can petition the court for expungement of the sample from the database"

Inclusion of Juveniles

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Unclear. The statute applies to &quot;persons convicted&quot; of a qualifying offense. However, other statutes (§ 12-15-102 and § 15-20-27) provide for DNA to be taken from juveniles adjudicated delinquent of a criminal sex offense or charged with class A or B felonies. These other statutes do not specify whether such DNA samples may be included in the DNA database.</td>
<td>Yes. The statute applies to juveniles tried as adults, and juveniles 16 yrs. or older adjudicated delinquent.</td>
<td>Yes. The statute applies to juveniles adjudicated delinquent.</td>
<td></td>
</tr>
</tbody>
</table>

Are the Qualifying Offenses the Same for Adults and Juveniles?

| The qualifying offenses are the same for adults and juveniles | The qualifying offenses are the same for adults and juveniles | The juvenile qualifying offenses are more restricted than those for adults |

Inclusion of Suspects/Arrestees

| Are Suspects or Arrestees included in the Database? | No | No | No |

www.aslme.org/dna_04/grid/index.php

With Permission
<table>
<thead>
<tr>
<th>References Regarding Authorized Uses of the DNA Database</th>
<th>Alabama</th>
<th>Alaska</th>
<th>Arizona</th>
<th>Arkansas</th>
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<tbody>
<tr>
<td>Alg. Code § 36-18-20</td>
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<td>Alg. Code § 36-18-24</td>
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<tr>
<td>Alg. Code § 36-18-31</td>
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<tr>
<td>Alaska Stat. § 44.41.035</td>
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<td>Ark. Code Ann. § 12-12-1111</td>
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<td>Ark. Code Ann. § 12-12-1112</td>
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<td>Ark. Code Ann. § 12-12-1105</td>
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<tr>
<td>Authorized Uses Other Than Law Enforcement and Development of Forensic Methods / Quality Control</td>
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<tr>
<td>ID of missing, deceased, or unidentified persons</td>
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<tr>
<td>ID of human remains from natural or mass disasters</td>
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<tr>
<td>Other humanitarian purposes</td>
<td>***</td>
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</tr>
<tr>
<td>Population Statistical Database Created?</td>
<td>Yes (provided individually identifiable info is removed)</td>
<td>Not expressly, but &quot;statistical blind analysis&quot; is authorized.</td>
<td>No provision</td>
<td>Yes (provided individually identifiable info is removed)</td>
</tr>
<tr>
<td>Genetic Research Allowed? (e.g., medical research or testing for certain physical traits)</td>
<td>Population statistical database is expressly authorized for medical research use, provided that all individual identifiable information is removed.</td>
<td>Statute neither expressly authorizes nor prohibits genetic research.</td>
<td>Statute neither expressly authorizes nor prohibits genetic research.</td>
<td>Statute neither expressly authorizes nor prohibits genetic research.</td>
</tr>
<tr>
<td>Notes</td>
<td>***</td>
<td>Statute prohibits the inclusion of a crime victim's DNA into the database if he hasn't committed a qualifying offense.</td>
<td>***</td>
<td>***</td>
</tr>
<tr>
<td>References:</td>
<td>Alabama</td>
<td>Alaska</td>
<td>Arizona</td>
<td>Arkansas</td>
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</tr>
<tr>
<td>Criminal Penalties for Tampering with DNA Samples and Records</td>
<td>Class B felony: Intentional destruction, mutilation, concealment, removal, impairment of the veracity or availability of records, knowing one lacks authorization</td>
<td>No provision</td>
<td>No provision</td>
<td>No provision</td>
</tr>
<tr>
<td>Criminal Penalties for, or Consequences of, Improper Entry of DNA Samples and Records Into the Database.</td>
<td>Class B felony: Knowing falsification of entries or alteration of records</td>
<td>No provision</td>
<td>No provision</td>
<td>The detention, arrest, or conviction of a person based on a database match or database information is not invalidated if the sample was obtained or placed in the database by mistake</td>
</tr>
<tr>
<td>Criminal Penalties for Unauthorized Access to DNA Samples and Records</td>
<td>Class C felony: Knowing and willful obtaining of individually identifiable information without authorization; conspiracy of improper obtaining</td>
<td>Class C felony: Knowing possession of DNA samples or records without authorization</td>
<td>No provision</td>
<td>Class A misdemeanor: Knowing obtaining of individually identifiable DNA information from the database or databank without authorization</td>
</tr>
<tr>
<td>Criminal Penalties for Improper Disclosure of DNA Samples and Records</td>
<td>Class C felony: Knowing and willful disclosure of individually identifiable information to an unauthorized recipient; conspiracy of improper disclosure</td>
<td>Class C felony: Knowing allowance of access to DNA samples or records without authorization</td>
<td>No provision</td>
<td>Class A misdemeanor: Knowing disclosure of individually identifiable information from the DNA database or databank, knowing the recipient is unauthorized; disclosure to unauthorized recipient for pecuniary gain</td>
</tr>
<tr>
<td>Private Cause of Action for Individuals Aggrieved by Misuse of DNA Samples and Records</td>
<td>No provision</td>
<td>No provision</td>
<td>No provision</td>
<td>The State Crime Lab or any aggrieved individual or agency can sue to enjoin any criminal or noncriminal justice agency, organization or individual from violating the database provisions and to compel them to comply with the provisions</td>
</tr>
<tr>
<td>Immunity from Liability Despite Misuse of DNA Samples and Records</td>
<td>Forensic employees free from civil liability when taking, collecting, storing, analyzing, or testing of DNA is performed pursuant to rules &amp; regs, and alleged injury was not caused by willful and wanton behavior</td>
<td>No provision</td>
<td>No provision</td>
<td>No provision</td>
</tr>
<tr>
<td>Other Penalties or Notes</td>
<td>Class B felony: Refusal to deliver a forensic record upon proper request by a lawfully authorized recipient.</td>
<td>***</td>
<td>***</td>
<td>The computer software and database structures used to implement the database are confidential</td>
</tr>
</tbody>
</table>

Interpreting State DNA Database Statutes

• “Because the terms used in the statutes are often vague or undefined, one cannot predict with certainty the scope of the databases’ authorized uses”

• “…reader is advised to review the text of the statute(s)…”

• Interpretation of Statues May Dictate Use Of Data For Purposes Outside Law Enforcement
Optimization of Expert Systems

Vendor Involved

- State’s DNA Data Are Made Available To Vendors: Cybergenetics and Promega
- Initial Optimization Of E.S. At Cybergenetics; In Lab. For FSS I³
- Quarterly Re-optimization Recommended By Cybergenetics; Unspecified By Promega/FSS
- Platform/Kit And Software Version Changes Require E.S. Re-optimization of E.S.
Optimization Process

- DNA Data Not Identifiable To A Person Provided To Cybergenetics (>600 DNA Profiles + 288 Variant Profiles)
- Data Representative Of Laboratory’s Analysis Parameters
Confidentiality Agreements

- Cybergenetics: Confidentiality Agreement and Confidentiality Disclosure Agreement
- Promega/FSS: Confidential Disclosure Agreement
- Evaluated Based On Security Of Submitting Agency’s Data And Legal Applicability Of Document As Whole
Review Of Confidentiality Agreement

• Requests For DNA Data For Optimization Met With Varied Responses From Data Submitting States

• Agency’s Attorneys Were Consulted To Authorize Release Of State’s DNA Data

• Laboratory Management Hesitant To Authorize Data Transfer To Third Party Vendors
Counsel’s Response To DNA Data Transfer

- Transfer of DNA Data To MUFSC and Then To E.S. Vendor Elicited Comments From Counsel
- “Stretch To Include E.S. Evaluation Using Our Datasets As Supporting ID Research And Protocol Development”
- “…Concerns About Releasing Our Dataset To Commercial Vendors Without Any Objective Way To Monitor What They Are Doing With The Data”
Other Remarks

• “It Seems To Me That It Will Be Impossible To Verify That The Vendors Will Use This Data Only For Optimization Purposes”

• Bottom-Line: Concerns Of Attorneys or Oversight Committees Need To Be Addressed
Another State’s Initial Concern With E.S. Optimization

- Co-mingling Of Data Between States
- Might Required A Separate Computer With Only That State’s CODIS Data Loaded
- Is This An Extreme Or Will It Be A Common Practice?
Current Confidentiality Agreements Provided By Vendors

• Confidentiality Agreements Written From Perspective Of Vendors, Software Security and Disclosure

• DNA Data Owned By State Submitting Data Needs To Be Secure

• C.A. Should Also Be Written From Perspective Of State Laws Of Data Submitting Agency
Other Policies Governing Data Security

- States Information Security: West Virginia Computer Crime and Abuse Act
- Privileged And/Or Confidential Information Agreement, Signed By All Employees
- State’s Security Policy, Employees Sign That He/She Read and Understands Regulations Governing Electronic Data
Vendor Specific Language: Marshall University

- Security Of Data To Third Party Access
- All Vendors and Contractors Must Sign And Abide By A Contract/Confidentiality Statement Containing All Terms And Conditions Necessary To Ensure Compliance With Data Submitting State’s Information Security Policies and Procedures
## Third Party Contracts

- Liabilities of the Third Party Vendors
- Right To Audit Contractual Responsibilities
- Restrictions On Copying And Disclosing State’s Data Information
- Mechanisms To Ensure That Security Measures Are Followed
- Measures To Prevent Infection By Viruses and Similar Hazards to Info. Resources
Review of Confidentiality Agreements

• Enlisted Assistance Of A Contract Attorney To Review Agreements
• Cybergenetics C.A. and C.D.A. Were Met With 14 and 10 Recommendations, Respectively
• Cybergenetics: Mostly Minor Recommendations
• Promega/FSS C.A. Was Broad In Its Language And Has A Number Of Exceptions (per counsel)
• Needs To Be Further Developed
C.A. Development

- Document Not Fully Inclusive Of State’s Laws Governing Data Security
- Suggest Indemnification Clause, MUFSC or Submitting Agency Held Harmless For Causing Harm Through Data Submission
- C.A. Places MUFSC Under Another’s States Jurisdiction (Commonwealth of Pennsylvania), Must Be Under Submitting State’s Jurisdiction
Template C.A. Document

• Develop A Prototype Confidentiality Agreement Based On A State’s, Agency and Federal Information Polices
• Develop Measures To Monitor Use Of Data, Assure Data Security
• Indemnify Agency Submitting Data
Team Approach

• Advisory Committee
  • John Butler, NIST
  • Cecelia Crouse, SWGDAM, Expert System Subcommittee
  • David Deuwer, NIST
  • Barry Duceman, NYSP
  • Rich Guerrieri, FBI
  • Tracey Johnson, AFDIL
  • Ken Konzak, Cal DOJ

• National Institute of Justice
  • Susan Narveson
  • John Paul Jones
  • Rhonda Roby, Consultant

• Marshall Univ. FSC
  • Bridget Tincher
  • Amy Christen
  • Amanda Web
  • Terry Fenger
  • Rebecca Hutchins
  • Alyse Hale
Questions Please