



The Future Direction of the National Institute of Justice's Expert Systems Testbed Project

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NIJ

FRN
Forensic Resource Network
A program of NIJ



Today's Presentation

- Summary of Phase I
- Demonstrations
- Phase II: Mixtures



Top 4 Systems of Samples to be Processed and/or Analyzed in 2005

- 3100 Identifiler
- 3100 Profiler Plus/COfiler
- 377 Profiler Plus/COfiler
- 3100 PowerPlex 16

Top 81% Responses

Results from survey conducted at the CODIS Administrator Meeting, May 2005



Number of Samples and Alleles Evaluated

Kit	Number of samples	Number of alleles
Identifiler	620	11,675
Profiler Plus	540	9,897
COfiler	504	6,317
PowerPlex 16	547	17,504
Total	2,211	51,728



Information from NEST Project Phase I

- Information shared with community:
 - NIJ Grantee's Meeting (2005 and 2006)
 - Promega Meeting (2005 and 2006)
 - Applied Biosystems' HID University (Spring 2006)
- Workshop at the Virginia Institute of Forensic Science and Medicine (2006)
- 6 Demonstration Sessions
 - Offered at Marshall University
- Sourcebook Summarizing Features and Limitations
- Publications



NEST Project Introduction:



National Institute of Justice's Expert Systems Testbed (NEST)

Project

Marshall University Forensic Science Center (MUSFC) is the host site of the National Institute of Justice Expert Systems Testbed (NEST) Project to evaluate commercially available expert systems for the national forensic DNA community. The NEST Project Implementation Team is on the cutting edge of supplying the latest information on expert systems through presentations, demonstrations and references.

Three expert systems are being evaluated by the NEST Project Implementation Team, comprised of NIJ and MUFSC personnel and under the guidance of the NEST Project Advisory Committee. Current NEST Project evaluations are

[Project Introduction](#)

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NEST Project

Project Information:

[Project Abstract](#)

[Advisory Board](#)



NEST Project Introduction:



National Institute of Justice's
Expert Systems Testbed (NEST)

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<http://forensics.marshall.edu/>

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Reference Materials



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Accreditations

NEST
Project

NEST Project Reference Materials:

The materials below have been provided for your information. Please download or print any of the materials based on your interest in the NEST Project. Please let us know if there is additional information you would like made available.

Presentations:

2006 NIJ Applied Technologies and Partnership Conference, February 2006	.pdf
11th International CODIS Meeting, November 2005	.pdf
NIJ Grantee's Meeting, June 2005	.pdf

Documents:

"The National Institute of Justice's Expert Systems Testbed Project" Proceedings of the Sixteenth Symposium on Human Identification: 2005	.pdf
"Evaluating expert systems for forensic DNA laboratories" Forensic News, 2005	.pdf
"Appendix B. Guidelines for Submitting Requests for Approval of an Expert System for Review of Offender Samples" (revised May 4, 2005) National DNA Index System (NDIS), DNA Data Acceptance Standards Operational Procedures	.pdf

Tools:

Section 1 - Gene Mapper ID	.pdf
Section 2 - FSSi Cubed	.pdf

[Project Introduction](#)

[Demonstrations](#)

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NEST Project

You will need Adobe Reader to view and print the information on the left:



References

Websites



Required Information in Choice of Software/System

- Throughput Needs
- Management/Structure of Agency
- Budget
- Human Resources
- IT Support
- QA/QC Program



Conclusion

- The Expert Systems produce concordant results based on our analysis at this time
- Each ES has its own features, benefits, and limitations
- It is imperative that you evaluate your individual laboratory's needs prior to purchase
- Expert Systems can assist in assurance of quality data entered into NDIS



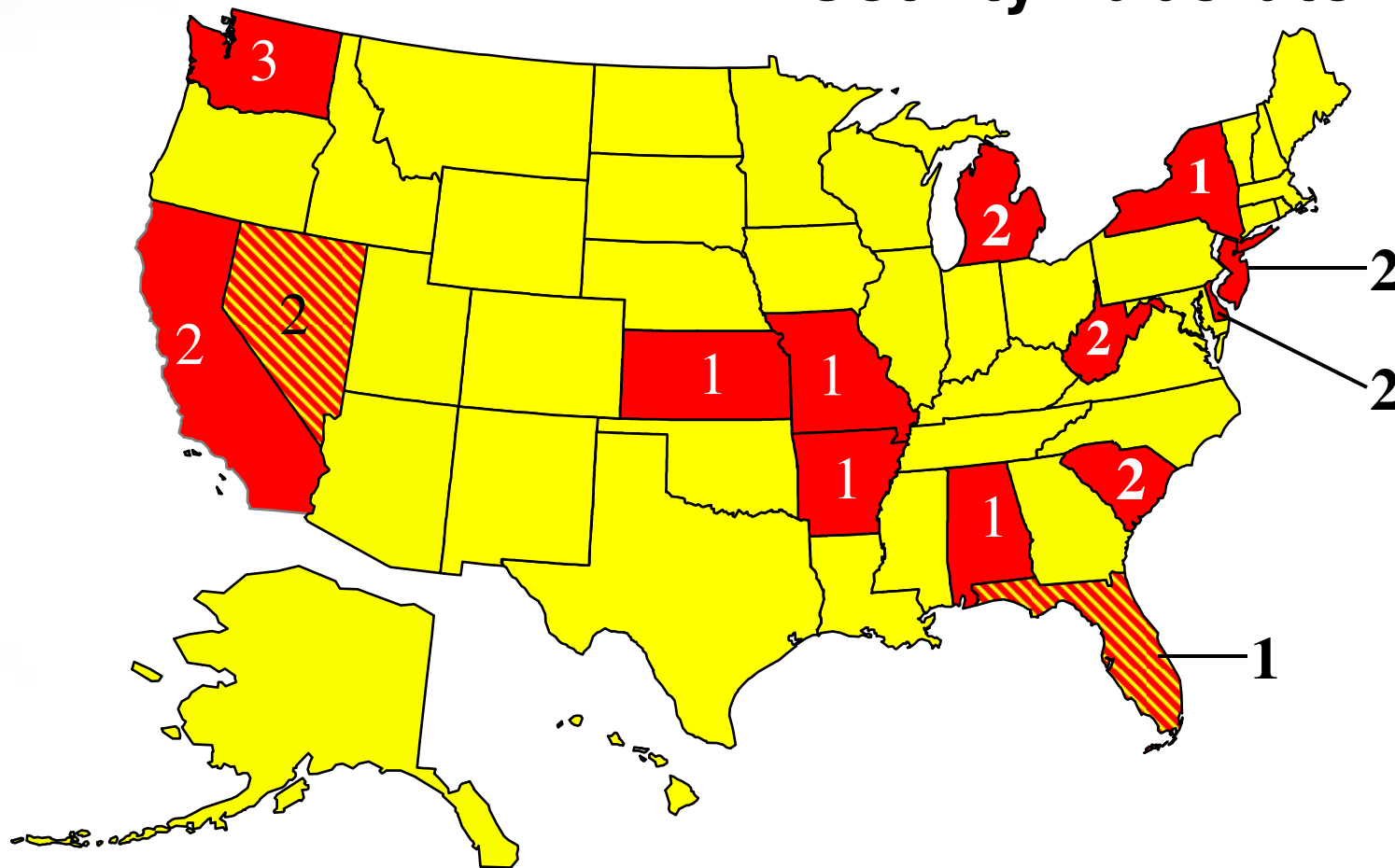
Training/Demonstration Sessions at Marshall University

- Training/Demonstrations of all systems
 - Marshall University has travel funds available
 - Please see me and/or Dr. Terry Fenger after the presentation if you are interested



Attendance at Demonstrations

12 State Laboratories 
2 County Laboratories 





Future Direction of NEST Project

- Evaluate Expert Systems for Mixed Specimens
 - Perform defined mixture experiments
 - Evaluate mixture data on different expert systems
- Workshops, Presentations, and Demonstration Sessions



Defined Mixture Experiments

M	One Peak	Two Peaks	Three Peaks	Four Peaks
	2 Homozygous (Shared Allele)	1 Homozygous & 1 Heterozygous (One Shared Allele)	1 Homozygous & 1 Heterozygous (No Shared Alleles)	2 Heterozygous (No Shared Alleles)
		2 Heterozygous (Two Shared Alleles)	2 Heterozygous (One Shared Allele)	
		2 Homozygous (No Shared Allele)		

SGM Plus



Phase II: Mixture Deconvolution in FSS-i3





Please send an email to Rhonda Roby at:

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- Interested in visiting Marshall University for demonstrations of the software systems



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