Forensics@NIST 2012 Symposium – DRAFT AGENDA

November 28, 2012 - Forensic Biology/DNA, Firearms Analysis & Fire Research Sessions

8:30-9:00  Introduction to Symposium and Sessions– NIST Personnel

DNA Stability, Extractions and Quantitation

9:00-9:05  Overview of DNA Programs at NIST – John Butler
9:05-9:25  Stability Studies – Margaret Kline
9:25-9:40  DNA Extraction – Erica Butts
9:40-10:00 DRAGON (NIST Forensics Grand Challenge Project) – David Ross
10:00-10:20 Digital PCR & DNA Quantitation – Ross Haynes
10:20-10:35  Break and Poster Viewing/Exhibitor Displays

STRs, mtDNA, Rapid DNA

10:35-10:55  STR Kits & New Loci – Becky Hill
10:55-11:15  STRBase and Information Resources – John Butler
11:15-11:35  Mixture Interpretation & True Allele – Mike Coble
11:35-11:55  mtDNA base composition – Kevin Kiesler
11:55-12:15  Rapid DNA – Pete Vallone
12:15-1:45  Lunch and Poster Viewing/Exhibitor Displays

Firearms Analysis: Measurement of Identification for Firearms and Toolmark Evidence

1:45-2:00  Overview of Firearms Projects at NIST – Robert Thompson
2:00-2:20  Bullet Signature Identification Using Topography Measurements and Correlations; the Unification of Microscopic and Mathematical Comparisons – Wei Chu

2:20-2:40  2D/3D Topography Comparisons of 10 Consecutively Manufactured Chisels and Punches through the Cross Correlation Function – Alan Zheng

2:40-3:00  NIST Bullet SRM 2460 Replication and Validation Using an Improved Vacuum Casting Method and Potential Evidentiary Use – Thomas Brian Renegar

3:00-3:20  Break and Poster Viewing/Exhibitor Displays

Firearms Analysis: National Ballistic Search System; Improving Accuracy and Quality Assurance


3:40-4:00  The National Ballistic Imaging Comparison Parts 1 and 2 – Alan Zheng

4:00-4:20  Statistical analysis of Manufacturer effects on Ballistics Correlation Scores – James Yen

4:20-4:40  Establish a “National Ballistics Evidence Search Engine (NBES)” Based on 3D Topography Measurements on Correlation Cells (NIST Forensics Grand Challenge Project) – John Song

Fire Research at NIST

4:40-5:00  Verification and Validation of Fire Models Used for Forensic Reconstructions – Kevin McGrattan

Posters

DNA

1. DNA Sequencing Error Estimation and SNP Validation for Microbial Forensics Applications
2. Characteristics of 24 Commonly Used Autosomal STR Loci
4. Concordance Testing Comparing STR Multiplex Kits with a Standard Data Set
5. SE33 Variant Alleles: Sequences and Implications
6. Evaluation of Additional Y-STR Loci to Resolve Common Haplotypes
7. An Evaluation of Additional Y-STR Loci in the PowerPlex Y-23 Kit
8. Direct PCR Amplification of STR Loci: Protocols and Performance
9. Rapid Amplification of Commercial STR Typing Kits
10. Validation of PowerPlex 16 HS in Comparison to Identifiler Plus on the ABI 3500 Genetic Analyzer
11. Setting Interpretation Thresholds and Results with Low-Level DNA Analysis
12. The New SRM 2391c: PCR-based DNA Profiling Standard
13. Using SRM 2372 Human Quantitation Standard: Are there differences between qPCR assays?
14. Forensic Performance of Insertion-Deletion Marker Systems
15. Candidate Reference Family Data: A Tool for Validating Kinship Analysis Software

**Firearms**


**Fire Research**

1. Analysis of a Fatal Wind-Driven Fire in a Single-Story House – Adam Barowy and Daniel Madrzykowski
2. Fire Pattern Repeatability – Daniel Madrzykowski and Charles Fleischmann

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**November 29, 2012 - Trace Analysis/Collection Session**

**8:30-9:00**  **Keynote Remarks: Netherlands Forensic Institute - Tjark Tjin-A-Tsoi (CEO)**

**9:00-9:30**  **Introduction to Session and Overview of Trace Analysis at NIST – Steel/Gillen**

**Trace Sampling**

**9:30-9:50**  **Enabling Forensics Investigations of Biothreat Incidents through Sampling Standards – Jayne Morrow**

**9:50-10:10**  **Surface Wipe Sampling for Trace Narcotics and Explosives Collection – Jennifer Verkouteren**

**10:10-10:30**  **Aerodynamic Sampling – Matt Staymates**

**10:30-10:50**  **Break and Poster Viewing/Exhibitor Displays**

**Standard Test Materials/Operational Protocols**

**10:50-11:10**  **Production of Seized Drug Analysis Standards by Inkjet Printing (NIST Forensics Grand Challenge Project) – Jeanita S. Pritchett**

**11:10-11:30**  **Nuclear Forensics Reference Materials (NIST Forensics Grand Challenge Project) – Kenneth Inn**

**11:30-11:50**  **Following the Scent – Development of Canine Training Aids – Bill MacCrehan**
<table>
<thead>
<tr>
<th>Time</th>
<th>Presentation</th>
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<tbody>
<tr>
<td>11:50-12:10</td>
<td>Performance Validation for Trace – Mike Verkouteren</td>
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<tr>
<td>12:10-12:30</td>
<td>NIST Trace Explosives Test Bed – Marcela Najarro</td>
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<td>12:30-12:50</td>
<td>Mass Spec Reference Libraries for Forensics: Past, Present and Future - Steve Stein</td>
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<tr>
<td>12:50-2:20</td>
<td>Lunch and Poster Viewing/Exhibitor Displays</td>
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### Technique Development for Trace Evidence

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<tr>
<th>Time</th>
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<tr>
<td>2:20-2:40</td>
<td>Automated Particle Analysis – Nicholas Ritchie</td>
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<tr>
<td>2:40-3:00</td>
<td>Combined IMS and Biometrics – Jessica Staymates</td>
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<tr>
<td>3:00-3:20</td>
<td>Atmospheric Pressure MS - Tim Brewer</td>
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<td>3:20-3:40</td>
<td>Improvements in Trace Involatile Vapor Analysis – Tom Bruno</td>
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<td>3:40-4:00</td>
<td>Unified Organic, Inorganic, and Morphological Analysis of Forensic Samples via SEM-based, High-Resolution X-ray Spectroscopy – W. B. Dorise</td>
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<td>4:00-5:00</td>
<td>Optional Open House and Trace Analysis Lab Tours of NIST Facilities</td>
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<tr>
<td>4:00-5:00</td>
<td>Poster Viewing/Exhibitor Displays</td>
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### Posters

1. **Ethanol in Water Standard Reference Materials to Support Forensic Testing**, Michele M. Schantz, Analytical Chemistry Division, NIST, Gaithersburg, MD 20899
2. **Towards improvement of trace detector screening for the analysis of illicit drugs**, L.T. Demoranville, J.R. Verkouteren, G. Gillen, NIST
3. **Nano Particle Generation from Heated Explosives**, Robert Fletcher, Marcela Najarro, Tim Brewer, Matthew Staymates and Greg Gillen, NIST
4. **Techniques for the Production of Standard Explosive Test Particles**, Matthew Staymates*, Michael Verkouteren, Jessica Staymates, Robert Fletcher, Tim M. Brewer, and Greg Gillen, NIST
6. **Forensic Applications of DART MS**, Ed Sisco, Usacil/NIST
7. **Electrostatic Effects in Swipe Sampling**, R. Fletcher, NIST
8. **Age Dating of Fingerprints**, Ed Sisco, NIST
9. **Forensic Analysis Methodology and Database of Statistically Combined HME Thermal, Mass, and Spectral Signatures** – Ashot Nazarian
10. **Surrogate Controls for Confidence in Field Measurements** – Vang
11. **HPLC for Quant of Explosives and Narcotics Standards** - Tim Brewer
12. **SRMS for Trace Explosives** – Bill MacCrehan
13. **Inkjet Printing for Trace Detection Standards** – Greg Gillen
14. **Micro CT Scanning of Explosives** – Greg Gillen

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15. **Confocal Raman of Single Particles** – Chris Michaels
17. **Reproducible Dynamic Vapor-Time Profiles of Explosives and Non-explosive Canine Training Aids**, Bill MacCrehan, Michele Schantz, Stephanie Moore; Chemical Sciences Division, MML

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### November 30, 2012 – Computer & Multimedia Forensics and Fingerprints & Biometrics Sessions

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
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<tbody>
<tr>
<td>8:30-9:00</td>
<td>Opening/Keynote Remarks - TBD</td>
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<tr>
<td>9:00-9:15</td>
<td><strong>Introduction to Sessions and Overview of Forensics and Information Technology at NIST</strong> – Martin Herman</td>
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**Computer and Multimedia Forensics**

<table>
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>9:15-9:30</td>
<td>Overview of Computer Forensics at NIST – Barbara Guttman</td>
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<td>9:30-9:50</td>
<td>National Software Reference Library and Diskprint Research – Mary Laamanen &amp; John Tebbutt</td>
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<td>9:50-10:10</td>
<td>File Identification in iOS – Michael Ogata</td>
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<td>10:10-10:30</td>
<td>Computer Forensic Tool Testing (CFTT) at NIST – James R. Lyle</td>
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<td>10:30-11:00</td>
<td>Break and Poster Viewing/Exhibitor Displays</td>
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<tr>
<td>11:00-11:20</td>
<td>Mobile Device Tool Testing – Richard Ayers</td>
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<td>11:20-11:40</td>
<td>Developing a Forensic Image Examination Rating Scale – Charles Fenimore</td>
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<tr>
<td>11:40-12:00</td>
<td>Instance search, copy detection, and semantic indexing at TRECVID - Soboroff</td>
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<tr>
<td>12:00-1:30</td>
<td>Lunch and Poster Viewing/Exhibitor Displays</td>
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**Fingerprints & Biometrics**

<table>
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>1:20-1:30</td>
<td>Overview of Fingerprint and Biometric Activities at NIST – Mike Garris</td>
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<td>1:30-1:50</td>
<td>Overview of the NIST Evaluation of Latent Fingerprint Technologies (ELFT) Project – Michael Indovina</td>
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<tr>
<td>1:50-2:10</td>
<td>Fingerprint Quality – Elham Tabassi</td>
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2:10-2:30 Biometrics & Forensics: The role of standards in data exchange – Brad Wing
2:30-2:50 Metrics for Enhancement of Latent Fingerprint Images (NIST Forensics Grand Challenge Project) – Andrew Dienstfrey & Mary Theofanos
2:50-3:10 Break and Poster Viewing/Exhibitor Displays
3:10-3:30 Transcending PSNR: SIVV as a Comprehensive Image Fidelity Metric – John M. Libert
3:30-3:50 Challenges in Forensic Face Recognition – P. Jonathon Philips
3:50-4:10 Human Assisted Speaker Recognition – Craig Greenberg
4:10 Conference Concludes

Posters

1. Computer Forensics (includes NSRL and CFTT)
2. Human Assisted Speaker Recognition
3. Using Attack Graph and Evidence Graph in computer Forensics Examinations
4. Instance Search, Copy Detection, and Semantic Indexing at TRECVID
5. Developing a Forensics Image Examination Rating Scale
6. Evaluation of Latent Fingerprint Technologies (ELFT)
7. Evaluation of Fusion Methods for Latent Fingerprint Matchers
11. Using Challenge Problems to Advance Face and Iris Recognition
12. Assessing Uncertainty in Measurement