

# AGENDA

## Measurement Science & Standards in Forensic Firearms Analysis

July 10-11, 2012

National Institute of Standards and Technology (NIST), 100 Bureau Drive, Gaithersburg, MD 20899  
**Room: Building 101 – Portrait Room**

[Webcast Information](#)

**Conference Web Link:** [go.usa.gov/wZu](http://go.usa.gov/wZu)

**Twitter Hashtag:** #NISTForensics

**July 10, 2012**

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**8:30 AM – 9:00 AM**

**Arrive at NIST Portrait Room & Visit Registration Table**

- Coffee is available for purchase in NIST Cafeteria

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**9:00 AM – 9:30 AM**

**Welcoming Remarks & Framing the Issue**

- NIST Opening Remarks – Susan Ballou (NIST, Law Enforcement Standards Office, Forensic Science Program)
- Scientific Working Group for Firearms and Toolmarks (SWGUN) Opening Remarks – Doug Murphy (Federal Bureau of Investigation [FBI] Laboratory)
- Association of Firearm & Tool Mark Examiners (AFTE) Opening Remarks – Dan Gunnell (Illinois State Police [ISP])
- Moderator: John Paul Jones II (NIST)

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**9:30 AM – 10:00 AM**

**Keynote Address – 40 Years of Firearms Analysis & a Glimpse of the Future**

- John Murdock (Private Examiner)

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**10:00 AM – 11:00 AM**

**Current State of Firearms Analysis: Review of the Field including Strengths & Limitations**

- Current Technology Used in the Laboratory – William Demuth II, (ISP)
  - Human Performance Issues in Firearms/Toolmarks – Douglas Murphy (FBI Laboratory)
  - Discussion
  - Moderator: Greg Klees (ATF Laboratory)
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**11:00 AM – 11:15 AM      BREAK**

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**11:15 AM – 12:00 PM      Manufacturing Processes and Materials**

- Manufacturing and Machining – Alkan Donmez (NIST)
- Discussion
- Moderator: Greg Klees (ATF Laboratory)

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**12:00 PM – 12:30 PM      Introduction to Measurement Science Advances in Firearms Analysis**

- Optical Methods of Surface Measurement – Ted Vorburger (NIST)

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**12:30 PM – 1:30 PM      LUNCH (NIST Cafeteria – on your own)**

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**1:30 PM – 3:15 PM      Measurement Science Advances in Firearms Analysis**

- Confocal Microscopy of Bullet Surfaces – David Howitt (University of California – Davis)
- Focus Variation – Brad Etter ( Alicona Corporation)
- Surface Topography Measurement using GeSight Elastomeric Sensor – Marcus Brubaker (Cadre Research Labs)
- Application of Thermal Infrared Imaging to Ballistic Toolmark Identification – Francine Prokoski (Infrared Identification Inc.)
- Discussion
- Moderator: Ted Vorburger (NIST)

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**3:15 PM – 3:30 PM      BREAK**

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**3:30 PM – 5:00 PM      Advances in Image and Statistical Analysis in Firearms Analysis**

- Comparison and Interpretation of Impressed Marks Left by a Firearm on Cartridge Cases – Christophe Champod (University of Lausanne)
- Consecutively Matching Stria (CMS): The Development by Empirical Testing of Numerical Criteria for the Identification of Striated Toolmarks – John Murdock (Private Examiner)
- 3D Surface to 2D Barcode – David Howitt (University of California – Davis)
- Bullet Signature Identification Using Topographic Measurements and Correlations – Robert Thompson (NIST)
- Discussion
- Moderator: Eric Steel (NIST)

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**Please note that all times are in Eastern Time**

**July 11, 2012**

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**9:00 AM – 10:00 AM Advances in Image and Statistical Analysis in Firearms Analysis – cont.**

- Proposed “NIST Ballistics Identification System (NBIS)” Based on 3D Topography Measurements on Correlation Cells - John Song (NIST)
  - Principal Component Analysis and Other Methods – Nick Petraco (John Jay College of Criminal Justice and the Graduate Center)
  - Discussion
  - Moderator: Douglas Murphy (FBI Laboratory)
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**10:00 AM – 11:00 AM Measurement Uncertainty & Certainty of Conclusions**

- Uncertainty: Some Concepts and a Firearms Example – James Yen (NIST)
  - Conclusion Statements and How to Introduce Evidence (DNA Example) – Mike Ambrosino (Special Counsel for DNA and Forensic Litigation for the U.S. Attorney’s Office for the District of Columbia)
  - Discussion
  - Moderator: Douglas Murphy (FBI Laboratory)
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**11:00 AM – 11:15 AM BREAK**

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**11:15 AM – 11:30 AM ATF’s International Correlation Server Project**

- Martin Ols (ATF)
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**11:30 PM – 12:30 PM Industry Panel on Future of the Discipline: Automated Ballistic Search & Identification Systems**

- ScannBI Technology USA: Evofinder® – network based digital microscope – Sergey Perunov (via teleconference)
  - Special Business Centre Co. Ltd (SBC): What can be named a multipurpose expert’s workplace? – Yury Ilyasov (via teleconference)
  - Forensic Technologies Incorporated (FTI): The challenges of capturing and successfully comparing bullet images – Alain Beauchamp
  - Infrared Identification Incorporated (IRID): Application of Thermal Infrared Imaging to Ballistic Toolmark Identification – Francine Prokoski
  - Discussion
  - Moderator: Robert Thompson (NIST)
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**12:30 PM – 1:30 PM LUNCH (NIST Cafeteria – on your own)**

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**1:30 PM – 2:30 PM**

**Role of Standards and Validation to Extend Quantitative Measurement into Practice**

- Physical Standards, Calibrations and Traceability – T. Brian Renegar (NIST)
- Adopting New Technology within an Existing Quality Assurance System – Erich Smith (FBI)
- Discussion
- Moderator: William Demuth II (ISP)

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**2:30 PM – 2:45 PM**

**BREAK**

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**2:45 PM – 4:45 PM**

**FACILITATED DISCUSSION:**

**What does the future state of firearms analysis look like?**

**What are the barriers to implementing the future state?**

**Design a roadmap to get there.**

- *Facilitator:* Dr. James Hamby
- *Knowledge Capture:* John Paul Jones II & SAIC
- Discussion Areas include: NAS Statements, Technology, Risk, Research, Validation, Policy, Standards, Legal Admissibility, Cost, etc.

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**4:45 PM – 5:00 PM**

**Meeting Summary & Next Steps**

- John Paul Jones II (NIST)
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