Updates on OSAC, NCFS, and Recent NIST Activities

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NIST Fellow & Special Assistant to the Director for Forensic Science
Vice-Chair, National Commission on Forensic Science
Member, OSAC Biology/DNA Scientific Area Committee
Member, AAFS Standards Board DNA Consensus Body
OSAC Liaison to SWGDAM
Associate Editor, Forensic Science International: Genetics
Representative of the Working Groups, International Society for Forensic Genetics
My role as OSAC Liaison to SWGDAM

• I enjoyed visiting each of the committees yesterday – impressive work is occurring here!

• Thank you for the hospitality shown when I visited your groups

• I am committed to see both SWGDAM and OSAC be successful in their different roles
Organization of Scientific Area Committees (OSAC)

Forensic discipline-specific “guidance groups” administered by NIST

http://www.nist.gov/forensics/osacac/index.cfm
Current Hierarchy of Standards for Accrediting Bodies to Use in Auditing U.S. Forensic DNA Laboratories

International Laboratory Accreditation Cooperation (ILAC) G19:08/2014 Modules in a Forensic Science Process

ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories

The FBI Quality Assurance Standards (2011) serve as supplemental materials to ISO/IEC 17025 for DNA audits

SWGDAM guidelines (interpretation, validation, etc.) provide further information but are not audited against
OVERALL GOAL of OSAC REGISTRY:
Provide trusted discipline-specific standards (and guidelines) that accrediting bodies can use to audit accredited laboratories

1. Provides initial starting material
   - SWG documents
   - ASTM standards

2. Creates high-quality guidance materials
   - OSAC Catalog
     (718 documents initially compiled)

3. Turns OSAC materials into standards
   - SDO
     - Standards Developing Organization

4. OSAC Registry of Approved Standards

5. Accreditating Bodies audit Forensic Laboratories
   (providing “teeth” to standards)

See http://www.nist.gov/forensics/osac/osac-newsletter-february-2016.cfm#bigpicture
## AAFS Standards Board (ASB)

### DNA Consensus Body Membership

25 members appointed in June 2016

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
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<tbody>
<tr>
<td>Bicka Barlow</td>
<td>Law Office of Bicka Barlow</td>
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<tr>
<td>Howard Baum</td>
<td>NJSP Office of Forensic Sciences</td>
</tr>
<tr>
<td>Ryan Buchanan</td>
<td>Sorenson Forensics</td>
</tr>
<tr>
<td>John M. Butler</td>
<td>National Institute of Standards and Technology</td>
</tr>
<tr>
<td>Kris Cano</td>
<td>Scottsdale Police Dept. Crime Lab</td>
</tr>
<tr>
<td>Robin Cotton</td>
<td>Boston Univ. School of Med.</td>
</tr>
<tr>
<td>James Curran</td>
<td>University of Auckland</td>
</tr>
<tr>
<td>Marsha Deitz (Garcia)</td>
<td>AABB</td>
</tr>
<tr>
<td>Julie A. Demarest</td>
<td>AFDIL (contractor of ARP Sciences supporting the Armed Forces DNA Identification Laboratory, a Division of AFMES), Laboratory Automation, Biometrics and Special Projects Group</td>
</tr>
<tr>
<td>Seth A. Faith</td>
<td>NC State University Forensic Sciences Institute</td>
</tr>
<tr>
<td>Julie French</td>
<td>GE Healthcare</td>
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<tr>
<td>Jessica Gabel Cino</td>
<td>Georgia State University College of Law</td>
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<tr>
<td>Jessica Goldthwaite</td>
<td>The Legal Aid Society</td>
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<tr>
<td>Brian Higgins</td>
<td>DFSC-USACIL</td>
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<tr>
<td>Phil Kinsey</td>
<td>MT Dept of Justice</td>
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<tr>
<td>Amy Lee</td>
<td>Serological Research Institute</td>
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<tr>
<td>Steven B. Lee</td>
<td>Illumina Inc.</td>
</tr>
<tr>
<td>Heather Miller Coyle</td>
<td>University of New Haven</td>
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<tr>
<td>Amber Moss</td>
<td>Texas Department of Public Safety Crime Lab</td>
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<tr>
<td>Kimberly Murga</td>
<td>Las Vegas Metropolitan Police Department</td>
</tr>
<tr>
<td>Melisa W. Staples</td>
<td>New Hampshire State Police Forensic Laboratory</td>
</tr>
<tr>
<td>Jane Taupin</td>
<td>Self employed</td>
</tr>
<tr>
<td>Charlotte J. Word</td>
<td>Self employed</td>
</tr>
<tr>
<td>Timothy Zolandz</td>
<td>FBI</td>
</tr>
<tr>
<td>Candy Zuleger</td>
<td>Trinity DNA Solutions</td>
</tr>
</tbody>
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Chair
Kris Cano

Coordination Needed in Forensic Science Standards Development
FBI Quality Assurance Standards (QAS) and OSAC Registry

- The FBI Director is Congressionally mandated by the DNA Identification Act of 1994 (Public Law 103-322) to set requirements for participation in the National DNA Index System (NDIS), which was done through creation of the QAS in 1998/1999 by the DNA Advisory Board (DAB)
  - When the DAB’s term expired in 2000, SWGDAM was given responsibility for revising the QAS and accompanying audit documents, which has been done in 2009 and 2011
- However, SWGDAM and the FBI are not recognized SDOs (Standards Developing Organizations) nor has the QAS gone through a full SDO-process
- Currently, OSAC has decided that the QAS will not go through the OSAC Registry Approval process as it has to be maintained by the FBI (according to Congressional mandate) and does not meet the SDO-process (as defined by the OSAC Quality Infrastructure Committee)
- The FBI QAS do not prevent the development and implementation of OSAC standards/guidelines that will complement the quality and integrity of the discipline that is currently viewed as the gold standard of forensic science.
Recent or Upcoming OSAC Events

- **February 22-23, 2016** – Second public meeting with presentations by SAC and subcommittee chairs in Las Vegas, NV as part of AAFS

- **August 23-26, 2016** – Third in-person meeting of SAC Biology/DNA and subcommittees (Phoenix, AZ)

**January 2016** – first posting to OSAC Registry of Approved Standards
**March 2016** – NIST statement; **July 2016** – Joint FSSB & NIST Statement
SAC Biology/DNA Public Meeting
held February 22, 2016 in Las Vegas, NV

• Biology Data Interpretation and Reporting Subcommittee

• Biological Methods Subcommittee

• Wildlife Forensics Subcommittee
One of the OSAC's objectives is to inform the forensic science community of research needs that are uncovered during the OSAC's standards development activities. These research needs recommendations may be considered by other agencies and organizations when they develop their own agency research needs, and when soliciting funding for forensic science research.

The OSAC encourages the respective funding agencies to consider these research needs recommendations when developing new solicitations so that research efforts can be strategically advanced in areas where they are most needed. Practitioner feedback that arises during research gap analysis is documented, consolidated, and shared with the broader community. This research list will encompass inputs from the all of the 24 subcommittees and five Scientific Area Committees (SACs).

Title of research need: To Improve the Analysis of Serological Evidence: ID of Body Fluid

Keywords: Body Fluid Stains, Serology, Saliva, Semen, Blood

Submitting subcommittee(s): Biological Methods SC - DNA  Date Approved: 1/28/16

(If SAC review identifies additional subcommittees, add them to the box above.)

Background information:
1. Description of research need:

Considerable research has been conducted to improve DNA analysis techniques but little has changed for the front end, the classical serological analysis of evidence. Research is underway to make improvements but the emphasis of the NIJ research portfolio should address the need to make real transformational change to how evidence is examined. It would be beneficial to add methods which would decrease the serological analysis time on items like sheets, clothing, etc.
OSAC Biology/DNA SAC Summary

- **Regular conference calls (virtual meetings)**
  - SAC and subcommittees each meet at least monthly
  - Task groups meet sometimes multiple times per month

- A public SAC meeting/public comment session was held as part of the ISHI meeting in Grapevine, Texas on October 15, 2015

- A Biology/DNA Scientific Area Committee Public Status Reports & Open Discussion was held February 22, 2016 as part of the AAFS meeting in Las Vegas, Nevada

http://www.nist.gov/forensics/osac/nist-scientific-area-committee-meetings-february-2016.cfm

- **George Herrin, chair of SAC Biology/DNA, will be giving an update on OSAC projects at ISHI on September 29, 2016**

- Several documents are close to being completed for submission to a Standards Developing Organization (SDO)

- AAFS Standards Board (ASB) is a newly formed SDO; the current plan is to use this route for SAC Biology/DNA documents
SAC Biology/DNA Activities

Subgroups (19)

- Biological Data & Reporting
  - BDIRC - Probabilistic Genotyping Task Group
  - BDIRC - Software Validation Standards Task Group
  - BDIRC - Statistical Interpretation Task Group
  - BDIRC - Mixture Interpretation Verification Task Group

- Biological Methods
  - Education & Training
  - Sample Identification and Collection
  - Terminology
  - Validation/Method

- Bio Terminology Task Group

- Wildlife Forensics
  - Education and Training TG
  - OSAC Wild Admin
  - Report Writing TG
  - Standards and Guidelines TG
  - STR Panels TG
  - Terminology TG
  - Validation TG

Projects

Assigned Projects:
- Bio Terminology Task Group
  - SAC All, Vr1 1 Sub, RA-1 (Standard), ISO/IEC 17020:2012
  - SAC All, Vr1 1 Sub, RA-2 (Standard) ISO/IEC 17025:2005
  - SAC Bio, Bio Terminology Task Group Part 2
  - SAC Bio, SDC-0, Best Practices for Assessing Education Requirements
  - SAC Bio, SDC-0, Wildlife Sub, Research Need - Geographic Assignment
  - SAC Bio, Wildlife RA-1 (Standard) - ASTM 12345 Test

Visible Projects:
- Multiple SACs VSC#2 RA-1 (Standard) ANSI/NIST
- SAC Bio, Internal Validation Standards for STR Profiling on CE Platforms
- SAC Bio, Biological Data Interpretation and Reporting Sub, SDO-1 (Guideline)-BioDNA Software Validation Guidelines
- SAC Bio, Biological Data Interpretation and Reporting Sub, SDO-2 (Standard)-Mixture Interpretation Verification
- SAC Bio, Biological Data Interpretation and Reporting Sub, SDO-3 (Standard)-Validation Standards for Probabilistic Genotyping Systems
- SAC Bio, Biological Data Interpretation and Reporting Sub, SDO-4 (Standard)-Validation Standards for Statistical Analysis of Autosomal STR DNA Typing Results
- SAC Bio, SDC-0, General Standard for Training DNA Analysis
- SAC Bio, SDC-0, Standard for General Forensic Laboratory Training
- SAC Bio, SDC-0, Standards for Serological Analytical Procedures
- SAC Bio, SDC-0, Standards for the Validation of Serological Methods
- SAC Bio, SDC-0, Standards for Training in Serological Methods
- SAC Bio, SDC-0, Training Standard for DNA Isolation and Purification Methods
- SAC Bio, SDC-0, Training Standard for Mitochondrial DNA Sequencing Analysis
- SAC Bio, SDC-0, Training Standard for Real-time PCR DNA Quantitation Methods
- SAC Bio, SDC-0, Training Standard for STR Typing via Capillary Electrophoresis
- SAC Bio, Standards for Internal Validation of DNA Analysis Methods
- SAC Bio, Wildlife Sub, SDO-1 - General Standards
- SAC Bio, Wildlife Sub, SDO-2 - Report Writing Guidelines
OSAC Biology/DNA Documents Close to Completion (then will go through an SDO process)

**Biological Methods Subcommittee**
1. Best Practices Recommendations for Assessing Educational Requirements for Forensic DNA Analysts
2. Standards for Internal Validation of DNA Analysis Methods
3. Standards for the Analytical Procedures and Report Writing of Serological Methods
4. Standards for Training in Serological Methods
5. Best Practices for Training of DNA Isolation and Purification Methods

**Biological Data & Reporting Subcommittee**
1. Validation Standards for Probabilistic Genotyping Systems
2. Mixture Interpretation Verification
3. Software Validation Guidelines

**Wildlife Forensics Subcommittee**
1. General Standards
2. Report Writing Guidelines
Plan for Sharing and Getting Feedback on OSAC DNA Documents

• Biology/DNA SAC meets in Phoenix next month and hopes to complete review of many of these documents

• Once documents have cleared the SAC approval, they will be provided to the SWGDAM chair and DNA Technical Leaders as they are being sent to the ASB SDO process (to provide additional time to review before the official SDO public comments period)
OSAC Monthly Newsletter
A communication vehicle to improve interaction with stakeholders

Issues (to-date)
• August 2015
• Sept 2015
• Oct 2015
• Nov 2015
• Dec 2015
• Jan 2016
• Feb 2016
• Mar 2016
• Apr 2016
• May 2016
• June 2016
• July 2016

One of the ways to solicit public comment on standards and guidelines up for consideration on the OSAC Registries

Newsletters released around 15th of each month

http://nist.gov/forensics/osac/osac-newsletter.cfm
Nurturing Disparate Disciplines in a Long-Neglected Profession

Invited article by David Stoney for the July 2016 OSAC Newsletter

If we were to step back a bit to get a perspective on OSAC, we'd have to get pretty far away. In fact, if we were to view it from above we'd be at a dizzying height. "A collaborative body of more than 500 forensic science practitioners and other experts who represent local, state, and federal agencies; academia; and industry." We are a bit larger, and considerably more diverse in profession, than the United States Congress. If we find ourselves frustrated over the progress of our documents, coordination of our efforts, accommodating different points of view, or anything else, we might well reflect on the efforts of our representatives on Capitol Hill.

The forensic science profession in the United States developed without coordination, across hundreds of jurisdictions, and over more than a century, in response to meeting explicit needs of law enforcement and the courts. While showing many components of a mature profession, its academic component has remained rudimentary, failing (despite notable individual efforts) to provide leadership and fundamental development for the profession. Working for decades within this void, and virtually ignored by the legal and broader scientific communities, practitioners bore responsibility for development of the forensic sciences.

That period is clearly behind us. We now have everybody's attention and, not surprisingly, there are plenty of gaps to fill. OSAC fits within this context, remarkable for its size, its structure and its membership. For the first time the broader scientific community, legal community and forensic science critics are meaningfully engaging with forensic scientists. Likewise, for the first time, the diverse forensic science disciplines are engaging with one another. OSAC has brought this about within a structure that keeps practitioners largely in control, but requires meaningful interactions, consideration of progressive views, and standardization across disciplines. Following decades of benign neglect, it is a fruitful time for improvements in forensic sciences; expectations are high and the range of possible contributions, paralleling the diverse capabilities of our membership, is extraordinarily broad.

Amidst this great potential, our greatest challenge is the management of frustration – and there is necessarily considerable frustration. It could not be otherwise. Other professions have grown gradually, with practitioners adjusting to new ideas, academic contributions and opposing views over many years. We are condensing this process, simultaneously seeking contributions from many perspectives, and practitioners cannot help but feel frustrated and nearly overwhelmed. At the same time, other OSAC members with challenging views and meaningful contributions (often obvious within their own disciplines) find it frustrating to work with a profession that has developed empirically, and whose primary experience with scientific criticism has been in a confrontational and unforgiving legal arena.

The maintenance of our enthusiasm for this process is critically important. OSAC is a volunteer organization and we need all components of OSAC to work together. Accepting our frustration and keeping a proper perspective on this remarkable effort will help us recognize that small gains, along with the guarantee of continuing iterative improvements, will result in steady, and ultimately revolutionary, progress.
Membership Renewal or Replacement

• Starting in October 2016 (and each subsequent year), one-third of current OSAC members will be replaced or renewed for a three-year term (with a two-term limit)

• NIST accepts applications for participation in OSAC on a continuous basis

• Complete application at https://nist.gov/forensics/osac-application.cfm
An OSAC Annual Report is in Development
On Jan. 11, 2016, the OSAC Forensic Science Standards Board (FSSB) voted to elevate ASTM Standard E2329-14 “Standard Practice for Identification of Seized Drugs” to the OSAC Registry of Approved Standards. The standard is used by forensic laboratories as a protocol for testing seized drug evidence to determine if drugs of abuse such as cocaine or heroin are present. This is the first standard posted to the registry.

ASTM E2329-14 contains the following sentence: “It is expected that in the absence of unforeseen error, an appropriate analytical scheme effectively results in no uncertainty in reported identifications.” The FSSB and NIST agree that the term “effectively results in no uncertainty” means different things to different readers of the document. While this language was deemed appropriate by its authors, it was deemed inappropriate by others including NIST. Consequently, NIST, OSAC, and ASTM have agreed to work together on new language that conveys clear meaning. This process is expected to take approximately 6 months. The OSAC will consider the revised ASTM document as quickly as possible for updating the current document on the registry. It is important to note that the concern over ASTM E2329 is in regards to the specific language used in the standard; neither the FSSB nor NIST is contesting the analytical results obtained from seized evidence using the standard.

NIST and the FSSB will continue to work together on OSAC process improvements to help ensure consistently high quality scientific reviews of documentary standards that the forensic science community can endorse as trusted, valuable resources.
OSAC Leadership Strategy Session (OLSS) – Held June 22, 2016

• Involved gathering of representatives from
  • The governing Forensic Science Standards Board (FSSB)
  • Resource Committees (HFC, LRC, QIC, and stats task group)
  • 5 Scientific Area Committees (SACs)
  • NIST metrologists

• Discussed ways to improve communication and clarity of purpose

• Considered obstacles and metrics for program success

• 25 recommendations for improvements have been made and are being considered
<table>
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<tr>
<th>Ideals for firearm identification</th>
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<tr>
<td>There should be adopted:</td>
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<tr>
<td>1. <strong>Minimum standards of equipment</strong> to be used.</td>
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<tr>
<td>2. <strong>Standards for records of evidence</strong> to accompany and substantiate the expert’s opinion; these to include photographs, metrological data and interpretations in permanent form.</td>
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<tr>
<td>3. <strong>Standards for qualification of experts</strong> which will include actual tests made against secretly designated materials and reported in compliance with item 2.</td>
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<tr>
<td>4. Methods for… <strong>following up [with] experts testifying in court</strong> to guarantee the highest efficiency.</td>
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National Commission on Forensic Science (NCFS)

www.justice.gov/ncfs

NCFS Leadership

Sally Q. Yates
Deputy Attorney General
DOJ Co-Chair

Willie E. May
Director of NIST
NIST Co-Chair

Nelson A. Santos
Vice-Chair (DOJ)

John M. Butler
Vice-Chair (NIST)

32 voting and 8 ex-officio members

Last meeting (9th): June 20-21, 2016
Next meeting (10th): Sept 12-13, 2016
Current NCFS Subcommittees

http://www.justice.gov/ncfs/subcommittees

where much of the Commission work occurs...

<table>
<thead>
<tr>
<th>NCFS Subcommittee</th>
<th># Commissioners</th>
<th># Non-Commissioners</th>
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<tbody>
<tr>
<td>1. Accreditation &amp; Proficiency Testing</td>
<td>8</td>
<td>13</td>
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<td>2. Human Factors</td>
<td>7</td>
<td>16</td>
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<tr>
<td>3. Interim Solutions</td>
<td>11</td>
<td>2</td>
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<td>4. Medicolegal Death Investigation</td>
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<td>5. Reporting &amp; Testimony</td>
<td>13</td>
<td>9</td>
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<tr>
<td>6. Scientific Inquiry &amp; Research</td>
<td>12</td>
<td>5</td>
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<tr>
<td>7. Training on Science &amp; Law</td>
<td>7</td>
<td>5</td>
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Sunsetted at March 2016 NCFS meeting

Most Commissioners are on multiple subcommittees

57 non-Commissioners contributing to the process

Subcommittee products are discussed and voted on by the full Commission prior to being recommended to the Attorney General
NCFS Meeting Dates

RECENT MEETINGS
• Meeting 9: March 21 – 22, 2016 (OJP/NIJ)
• Meeting 10: June 20 – 21, 2016 (OJP/NIJ)

FUTURE MEETINGS
• Meeting 11: September 12 – 13, 2016 (NIST)
• Meeting 12: January 9 – 10, 2017 (OJP/NIJ)
• Meeting 13: April 10 – 11, 2017 (OJP/NIJ)

CONTINGENT UPON CHARTER RENEWAL
• Meeting 14: July 17 – 18, 2017
• Meeting 15: November 6 – 7, 2017
Commission Work Products

• The Commission is a Department of Justice Federal Advisory Committee and therefore only has direct authority to make recommendations to the Attorney General.

  DOJ has promised to respond to NCFS work products within two meetings

• It is hoped that Commission work products will be considered and adopted by other Federal agencies and within state and local jurisdictions.

  Voting is conducted electronically with a two-thirds majority required to pass
NCFS Work Products
(DOJ Response Coming Soon)

Approved at the March 21-22, 2016 NCFS meeting – to be addressed at upcoming September 12-13, 2016 meeting

Recommendations to the Attorney General
1. Testimony Using the Term “Reasonable Degree of Scientific Certainty”
2. National Code of Professional Responsibility
3. Transparency of Quality Management System Documents
4. Funding for Post-Doctoral Projects to Facilitate Translation of Research into Forensic Science Practice

Views of the Commission
1. Establishing the Foundational Literature within the Forensic Science Disciplines
2. Proficiency Testing in Forensic Science
3. Critical Steps to Accreditation
Recommendations to the Attorney General Regarding **Use of the Term “Reasonable Scientific Certainty”** (NCFS Approved 3/22/16)

- **Recommendation #1**: The Attorney General should direct all attorneys appearing on behalf of the Department of Justice (a) to forego use of these phrases when presenting forensic discipline testimony unless directly required by judicial authority as a condition of admissibility for the witness’ opinion or conclusion, and (b) to assert the legal position that such terminology is not required and is indeed misleading.

- **Recommendation #2**: The Attorney General should direct all forensic science service providers and forensic science medical providers employed by Department of Justice [FBI, DEA, and ATF Laboratories] not to use such language in reports or couch their testimony in such terms unless directed to do so by judicial authority.

- **Recommendation #3**: The Attorney General should, in collaboration with NIST, urge the OSACs to develop appropriate language that may be used by experts when reporting or testifying about results or findings based on observations of evidence and data derived from evidence.

[https://www.justice.gov/ncfs/file/839726/download](https://www.justice.gov/ncfs/file/839726/download)
Work Products Adopted by the Commission
(R) Recommendation or (V) Views of the Commission

1. **(R)** Survey of Law Enforcement Forensic Units
2. **(R → V)** Accreditation of Medical Examiner and Coroner Offices
3. **(R → V)** Certification of Medicolegal Death Investigators
4. **(V)** Scientific Literature in Support of Forensic Science and Practice
5. **(V)** Inconsistent Terminology
6. **(R)** Universal Accreditation
7. **(V)** Forensic Science and Related Terms
8. **(R)** Automated Fingerprint Identification System (AFIS) Interoperability
9. **(R)** Root Cause Analysis (RCA) in Forensic Science
10. **(V)** Pretrial Discovery of Forensic Materials
11. **(V)** Increasing the Number, Retention, and Quality of Board-Certified Forensic Pathologists
12. **(V)** Electronic Networking of Medical Examiner and Coroner Offices
13. **(V)** Documentation, Case Record and Report Contents
14. **(V)** Ensuring that Forensic Analysis is Based Upon Task-Relevant Information
15. **(R)** Forensic Science Curriculum Development
Work Products Adopted by the Commission
(R) Recommendation or (V) Views of the Commission

16. (V) Using the Term “Reasonable Degree of Scientific Certainty”
17. (R) Using the Term “Reasonable Degree of Scientific Certainty”
18. (V) Establishing the Foundational Literature within the Forensic Science Disciplines
19. (R) Fund Post-Doctoral Projects to Facilitate Translation of Research into Forensic Science Practice
20. (R) National Code of Professional Responsibility for Forensic Science and Forensic Medicine Service Providers
21. (R) Transparency of Quality Management System Documents
22. (V) Proficiency Testing in Forensic Science
23. (V) Critical Steps to Accreditation
24. (R) Pretrial Discovery
25. (V) Judicial Vouching of Experts
27. (V) Technical Merit Evaluation of Forensic Science Methods and Practices
28. (R) National Disaster Call Center
Documents that will be discussed and voted on at the September 2016 NCFS meeting

1. Report and Case Record Contents (views) [Reporting and Testimony]
2. Documentation, Case Record and Report Contents (recommendation) [Reporting and Testimony]
3. Optimizing Human Performance in Crime Laboratories through Testing and Feedback (views) [Human Factors]
4. Proficiency Testing (recommendation) [Accreditation and Proficiency Testing]
5. Accreditation Program Requirements (views) [Accreditation and Proficiency Testing]
6. Accreditation and Recognition of Forensic Science Certification Bodies (views) [Accreditation and Proficiency Testing]
7. Certification of Forensic Science Practitioners (views) [Accreditation and Proficiency Testing]
8. Formation of a National Office for Medicolegal Death Investigation (recommendation) [Medicolegal Death Investigation]
9. Communication with Next of Kin and Other Family Members (views) [Medicolegal Death Investigation]

Public comment was open June 6 to July 5, 2016
Recent Activities of the National Commission on Forensic Science

Written by John M. Butler

IN FEBRUARY 2013, the U.S. Department of Justice (DOJ) and the National Institute of Standards and Technology (NIST) announced a partnership that included formation of the National Commission on Forensic Science (NCFS) and what is now the Organization of Scientific Area Committees (OSAC). As a Federal Advisory Committee for DOJ, NCFS involves public meetings, public input on draft documents, and an open website sharing meeting materials and final documents. Video recordings of past meetings are available as well. Co-chaired by Deputy Attorney General Sally Yates and NIST Director Willie May, the Commission meets four times a year and involves energetic discussions on a variety of issues.

The accompanying figure is an attempt to show where the 23 NCFS documents thus far approved impact what can be termed the “forensic science ecosystem”, which involves law enforcement, forensic laboratories, scientific (academic) research, medical examiner or coroner’s offices, and the legal system. For example, NCFS work product #20 is a recommendation regarding a National Code of Professional Responsibility for Forensic Science and Forensic Medicine Service Providers, which received approval at the March 2016 meeting. The number 20 is shaded in light blue because this recommendation is currently under consideration by DOJ.

At the June 20-21, 2016 NCFS meeting, final drafts for seven work products may be introduced for a vote and approval by the Commission. These documents include recommendations regarding pretrial discovery, a request for NIST to perform developmental validation studies, accreditation of digital and multimedia forensic science service providers, and formation of a national disaster call center. Views documents under consideration cover judicial voicing of experts, notice and demand provisions, and validation of forensic science methodology.

The Commission’s vision is for all forensic evidence to support the equal and impartial application of justice. The NCFS efforts can be framed into three primary goals: (1) foundational—
Other Past and Future NIST Activities
“…Fortunately, the National Institute of Standards and Technology (NIST) came to the rescue. Alan Zheng, a mechanical engineer in NIST’s Surface and Nanostructure Metrology Group, told me about his large collection of toolmarks (impressions left by tools on surfaces). His assortment included bullets that had been shot into water tanks, thus preserving their shape and allowing researchers to study the striation marks created by the gun. This was exactly what we needed. Now I had to find the perfect photographer. …”

- Christy Steele, Photo Editor at Science
AAFS 2016 Presentation

The Best Forensic Scientist You’ve Never Heard Of

Wilmer Souder and the Early History of Forensic Science at the National Bureau of Standards

June 10, 2016
a NIST colloquium presentation was given on Souder and a NIST museum exhibit opened by his granddaughter

Kristen M. Frederick-Frost, PhD
Robert M. Thompson, BS
John M. Butler, PhD

LW1: Last Word Society
American Academy of Forensic Sciences
Las Vegas, NV (February 25, 2016)

Slides available on the NIST STRBase website:
AAFS 2016 Workshop on Forensic Science Literature

Information Does Exist Beyond the First Page of Your Google® Search!
Tools and Strategies for Forensic Science Literature Searching and Use

Chair: John M. Butler
Co-Chair: Matthew R. Wood

Transformation: Embracing Change
An International Panel Discussion on the Impact of Recent Forensic Science Initiatives and the Response of the Global Community

Plenary Program Speakers

NCFS Co-Chair

Sally Q. Yates, JD
U.S. Department of Justice
Washington, DC

Gillian Tully, PhD
Forensic Science Regulator,
UK Home Office
UNITED KINGDOM

Alastair Ross, AM
National Institute of Forensic Science,
Retired
AUSTRALIA

Reinout Woittiez, PhD
Netherlands Forensic Institute
NETHERLANDS

NCFS Co-Chair

Willie E. May, PhD
National Institute of Standards and Technology
Gaithersburg, MD

Moderator:
John M. Butler, PhD
NIST

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Forensic Science Discipline Review

- FSDR was announced by Deputy Attorney General Sally Yates during her talk at the AAFS Plenary in Feb 2016
  - Justice Dept. to expand review of FBI forensic techniques beyond hair unit (Spencer Hsu, Washington Post, February 25, 2016)
  - Justice Department frames expanded review of FBI forensic testimony (Spencer Hsu, Washington Post, March 21, 2016)
  - Justice Department issues first standards for forensic expert testimony (Spencer Hsu, Washington Post, June 3, 2016)
- Department of Justice Office of Legal Policy (OLP) is conducting the review (planning FY2008 to FY2012)
- OLP will be using what were originally called FBI ASSTRs (Approved Standards for Scientific Testimony and Report Language) → now DOJ ULTRs (Uniform Language for Testimony and Reports)
- Court transcripts will be reviewed to see if any overstatements or errors were made in testimony
- See http://www.justice.gov/forensics
DOJ Uniform Language for Testimony and Reports (ULTRs)

Disciplines (public comments received through July 8, 2016)
1. Toxicology
2. **Serology**
3. Latent Prints
4. Glass Analysis
5. Footwear & Tire Impression
6. Textile Fibers
7. General Chemistry

34-page draft methodology is open for public comment through August 1, 2016
https://www.justice.gov/dag/file/870671/download

Additional disciplines (including DNA) will be forthcoming

ULTRs and supporting documentation are available at [http://www.justice.gov/forensics](http://www.justice.gov/forensics)
DEPARTMENT OF JUSTICE
PROPOSED UNIFORM LANGUAGE FOR TESTIMONY AND REPORTS
FOR THE FORENSIC EXAMINATION OF SEROLOGY

Purpose and Scope

If adopted, this document will apply to Department of Justice personnel who perform forensic examinations and/or provide expert witness testimony regarding the forensic examination of serological evidence. This document does not imply that statements made or language used by Department personnel that differed from these proposed statements were incorrect, indefensible, or erroneous.

This document provides the acceptable range of opinions expressed in both laboratory reports and during expert witness testimony while acknowledging that this document cannot address every variable in every examination.

Full document available at https://www.justice.gov/olp/file/861901/download
ULTR for the Forensic Examination of Serology

Statements Approved for Serological Examination Testimony and/or Laboratory Reports

Identification of Blood or Semen

1. The examiner may state or imply that blood or semen was identified on an item of evidence when a positive result is obtained from the appropriate confirmatory testing procedure(s).

Statements Not Approved for Serological Examination Testimony and/or Laboratory Reports

Numerical Certainty

1. An examiner may not state or imply that a level of numerical certainty is calculated to support the identification of blood or semen.

Zero Error Rate

2. An examiner may not state or imply that the methods used in performing serological examinations have error rates of zero or that they are infallible. While the laboratory has a quality system in place to minimize and/or identify potential procedural errors, the analytical processes and procedures used to support serology testing do not have a calculable error rate due to the unpredictability of human error.

Full document available at https://www.justice.gov/olp/file/861901/download
Current Scope of the FSDR

Table 1. Instances in Which FBI Examiners Provided Testimony for Certain Disciplines, FY 2008–2012

<table>
<thead>
<tr>
<th>Latent prints</th>
<th>Firearms &amp; Toolmarks</th>
<th>General Documents</th>
<th>Shoeprint &amp; Tire Tread</th>
<th>Paints &amp; Polymers</th>
</tr>
</thead>
<tbody>
<tr>
<td>132</td>
<td>45</td>
<td>46</td>
<td>25</td>
<td>17</td>
</tr>
</tbody>
</table>

The number of testimonies provided from FY 2008 to 2015 in various disciplines was obtained from individual unit/discipline databases maintained by the FBI. The FBI has no method for ensuring complete accuracy of this data through other methods.

Department of Justice
Forensic Science Discipline Review of Testimony:
Draft Methodology

To comment, please access this document through www.regulations.gov, OLP Docket No. 158. Comment is open through August 1, 2016. For more information on the Forensic Science Discipline Review of testimony, please contact the Office of Legal Policy at 202-514-4601 or FSDR.OLP@usdoj.gov.

34-page document available at https://www.justice.gov/dag/file/870671/download
July 13, 2016 Public Meeting

A report on Forensic Science is being written
Upcoming Maryland Judges DNA Training

- Open to all judges in the state of Maryland
- **October 6, 2016** (8 hours)
- Annapolis, MD (at the state judicial institute)
- Will include presentations from
  - **Judge Sheila Adams** (Prince George’s County)
  - **Prosecutor Wes Adams** (Anne Arundel County)
  - **Defense Attorney Steven Mercer** (MD Public Defender’s Office)
  - **DNA Technical Leader Bruce Heidebrecht** (Maryland State Police Forensic Laboratory)
  - **Subject Matter Expert John Butler** (National Institute of Standards and Technology)
- Using three case scenarios (simple, medium, and challenging) to teach – **could be applicable to others**
- Plan to share slides on NIST STRBase website
Biannual Conference to Showcase NIST Research

Previous Meetings:
November 28-30, 2012 at NIST
December 3-4, 2014 at NIST

Next Meeting:
November 8-9, 2016
Gaithersburg, MD

Collaboration focuses on general issues of pattern interpretation:

- Mappings between scores/distances and likelihoods
- How much information comes from models/assumptions that is not present in the data?
- Likelihoods, likelihood ratios, generalized likelihood ratios and Bayes factors
- Relevant populations and the formation of the defense hypothesis
- Probability definitions, utility functions and decision theory
- Information transfer between individuals
Planning has started for a second Symposium
Date: July 24-28, 2017 (Tentative)
Location: Washington DC
Sponsors that have been approached
DoD, FBI, NIST

http://www.nist.gov/director/international_forensics_home.cfm


www.nist.gov/forensics

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