The Current Policy Climate for Forensic Science Reform

John M. Butler, Ph.D.
National Institute of Standards and Technology
Special Assistant to the Director for Forensic Science
Vice-Chair, National Commission on Forensic Science
Points of view are mine and do not necessarily represent the official position or policies of the US Department of Justice or the National Institute of Standards and Technology.

Certain commercial equipment, instruments and materials are identified in order to specify experimental procedures as completely as possible. In no case does such identification imply a recommendation or endorsement by the National Institute of Standards and Technology nor does it imply that any of the materials, instruments or equipment identified are necessarily the best available for the purpose.
Cover Stories on Forensic Science

Science

National Geographic

11 March 2016
Vol. 351, Issue 6278

July 2016
Recent Forensic Problems in the News

**FBI Lab** problems with
hair comparisons
(reviewing old cases from 1980s and 1990s)

After FBI admits overstating forensic hair matches, focus turns to cases
Convicts could face challenges in getting back to court.

**DC Crime Lab** problems with
DNA Mixture Interpretation

Director of D.C.'s embattled DNA lab resigns after suspension of testing
Max M. Houck had been the director since the lab opened in 2012. Auditors found major problems there.

Keith L. Alexander and Julie Zauzmer | Local | Apr 30, 2016

District could spend nearly $1 million for outside lab to test DNA evidence
The District is scrambling to find an alternative after the D.C. lab was ordered to cease DNA testing.

Keith L. Alexander | Crime | Apr 29, 2015

National accreditation board suspends all DNA testing at D.C. crime lab
Two audits of the District lab found inadequate procedures for DNA testing and poorly trained employees.

Keith L. Alexander | Crime | Apr 28, 2015

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The FBI's Forensics Disaster

This latest failure of criminal science again highlights the need for massive reforms at law enforcement agencies.

Roger Koppl | May 5, 2015
In the preface (p. xx), Harry T. Edwards and Constantine Gatsonis, the committee co-chairs, write:

“The forensic science system, encompassing both research and practice, has serious problems that can only be addressed by a national commitment to overhaul the current structure that supports the forensic science community in this country. This can only be done with effective leadership at the highest levels of both federal and state governments, pursuant to national standards, and with a significant infusion of federal funds.”

Released February 2009
2009 …A National Research Council publication suggests the creation of a new government entity, the **National Institute of Forensic Science**, to establish and enforce standards within the forensic science community.

2009 to 2012 - National Science and Technology Council  
NIST co-chairs *Subcommittee on Forensic Science*

2013 to present  
MOU between DOJ and NIST  
Establishes a federal advisory committee for DOJ (NCFS) while NIST develops and administers the OSAC
July 13, 2016 Public Meeting

A report on Forensic Science is being written
FORENSIC SCIENCE

Forensic science is critical to an effective justice system, which in turn is a central pillar of a civil society. It is an interdisciplinary field that includes chemistry as a prime, integral component. The American Chemical Society (ACS) therefore offers a unique and wide-ranging ability to influence and contribute to the advancement of forensic science.

Physical evidence presented in courts is frequently analyzed using forensic science techniques. The credibility of the legal system critically depends on forensic tests that are consistent and scientifically valid, witnesses who are certified and recognized as forensic experts, and laboratories that are accredited by an appropriate governing agency.

Modern forensic science faces enormous challenges. The National Academies report, *Strengthening Forensic Science in the United States: A Path Forward*, enumerates the problems of the forensic science community in great detail. The report notes that due to its history, its interdisciplinary and applied nature, and its close ties to law enforcement and the legal system, forensic science has not developed a rigorous culture. Therefore, analytical method training and validation that are hallmarks of other scientific fields are often absent in forensic science.
Why is NIST involved in forensic science?

- Our assistance and technical expertise was requested by DOJ and others

  - Establishment of FBI Laboratory (early 1930s)
  - Automated fingerprint detection (1960s to present)
  - Law Enforcement Standards Laboratory (established in 1971)
  - “Starch Wars” (1977 to 1978)
  - Input on TWGDAM/SWGDAM (1988 to present)
  - DNA reference materials (early 1990s to present)
  - FBI’s DNA Advisory Board (1995 to 2000)
  - Digital forensics (late 1990s to present)
  - National Institute of Justice (NIJ) funding (1970s to present)
  - White House Subcommittee on Forensic Science (2009-2012)
  - MOU leading to NCFS and OSAC (2013-present)
WASHINGTON, Oct. 11 (AP)—A
great central laboratory for the sci-
entific detection of crime, which the
division of investigation of the de-
partment of justice, established here
a few months after the Lindbergh
kidnapping, is expected to be of con-
siderable value in the solution of
future abductions and other crimi-
nal cases.

The laboratory has been devel-
oped with the assistance and advice
of Dr. Wilmer Souder, national bu-
reau of standards scientist, who for
19 years has devoted the principal
portion of his time to the identifica-
tion of handwriting, typewriting and
bullets.
A Renewal MOU Was Recently Signed between DOJ and NIST and is publicly available on the NCFS website

https://www.justice.gov/ncfs/file/761051/download


X. Signatures:

For the Department of Justice:

[Signature]
Date: 04 August 2015

For the National Institute of Standards and Technology:

[Signature]
Date: 05 August 2015
NIST Forensic Science Efforts

**National Commission on Forensic Science (NCFS)**
- Department of Justice FACA
- co-led by NIST
- setting policy

**Organization of Scientific Area Committees (OSAC)**
- NIST-administered
- >540 members of the community
- establishing standards and best practices

**NIST Funded Internal Research Programs**
- ~$7.5M/year invested

**NIST Forensic Science Center of Excellence**
- CoE: ~$4M/year invested for 5 years (2015-2020)

**International Symposium on Forensic Science Error Management**
- 432 participants (11 countries)

**Partnership with Department of Justice**
Policy – Practice – Research are all inter-related

Standards of Practice for Forensic Practitioners

Federal Policy to meet Societal Expectations

Research for new or improved methods and data analysis

Organization of Scientific Area Committees (OSAC)

National Commission on Forensic Science (NCFS)

NIST

NIJ

NSF
NCFS Co-Chairs and OSTP Director address the first Commission meeting

- NIST Director Pat Gallagher
- Deputy Attorney General James Cole
- OSTP Director John Holdren
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

Policy-focused
Commission Activities
(operates on 2-year renewal terms)

- Announcement at AAFS 2013 meeting on February 21, 2013
- Commission charter originally filed on April 23, 2013; renewed on April 23, 2015
- Commission membership announced on January 10, 2014
- Meetings held thus far:
  
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<tr>
<th>Term 1</th>
<th>Term 2</th>
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<tr>
<td>Meeting 1</td>
<td>Meeting 11  September 12 – 13, 2016</td>
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<tr>
<td>February 3 – 4, 2014</td>
<td>Future Terms are contingent on DOJ renewal; NCFS Term 2 expires April 23, 2017</td>
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<tr>
<td>Meeting 2</td>
<td>Meeting 12  January 9 – 10, 2017</td>
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<td>May 12 – 13, 2014</td>
<td>Meeting 13  April 10 – 11, 2017</td>
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<td>Meeting 3</td>
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<td>August 26 – 27, 2014</td>
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<td>Meeting 4</td>
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<td>October 28 – 29, 2014</td>
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<td>Meeting 5</td>
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<td>January 29 – 30, 2015</td>
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<td>April 30 – May 1, 2015</td>
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<td>Meeting 7</td>
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<td>August 10 – 11, 2015</td>
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<td>Meeting 8</td>
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<td>December 7 – 8, 2015</td>
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<td>Meeting 9</td>
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<td>March 21 – 22, 2016</td>
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<td>Meeting 10</td>
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<td>June 20 – 21, 2016</td>
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NCFS Meeting Materials Available
http://www.justice.gov/ncfs/meeting-materials.html

Meeting Summaries
pdf document

Meeting Summary
May 12–13, 2014
Office of Justice Programs
810 7th Street NW, Washington, DC

Speaker Slides (pdf files)

2nd National Commission on Forensic Science Webcast

National Commission on Forensic Science Meeting...

Webcast (>9 hours of archived video)

Listing of 22 references provided to Commissioners

Human Factors and Cognitive Bias in Forensic Science
Deborah Boehm-Davis, Dean, College of Humanities and Social Sciences and
University Professor, Department of Psychology, George Mason University

John Collins, President, Forensic Foundations Group

The Need for Sequential Unmasking
Michael Risinger, John J. Gibbons Professor of Law, Seton Hall University
School of Law

David H. Kaye
Distinguished Professor of Law and Weiss Family Faculty Scholar, Penn
State University, Dickinson School of Law

On Bias in Forensic Science
National Commission on Forensic Science – May 12, 2014

The Need for Sequential Unmasking
D. Michael Risinger
John J. Gibbons Professor of Law
Seton Hall University School of Law

Ethics & Forensics: Ideals & Realities
J.C. Upshaw Downs, MD
forensX, LLC

OSAC Update
Mark D. Stolten, Director of OSAC Affairs
Office of Special Affairs
National Institute of Standards and Technology
NCFS Contacts

Andrew J. Bruck
Senior Counsel to the Deputy Attorney General
950 Pennsylvania Avenue, NW
Washington, DC 20530
Andrew.J.Bruck@usdoj.gov

Jonathan McGrath
Designated Federal Official
810 Seventh Street, NW
Washington, DC 20531
Jonathan.McGrath@usdoj.gov

Victor Weedn
Senior Forensic Advisor to the Deputy Attorney General
950 Pennsylvania Avenue NW
Washington, DC 20530
Victor.Weedn@usdoj.gov
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
Adopted by the Commission Page

We Encourage Public Comments

• Individuals wishing to submit written public comment regarding draft work products should do so by going to www.regulations.gov

• Work products are made available to Commissioners and to the general public at least 15 days before the next meeting and public comments can also be provided 15 days after a meeting (30 days total)
Recent Activities of the National Commission on Forensic Science

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 vouching 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—
Some Key NCFS Recommendations


Work Products are Developed in **Subcommittees**:

- **Accreditation and Proficiency Testing**
  - Universal Accreditation
- **Interim Solutions**
  - Transparency of Quality Management System Documents
  - National Code of Professional Responsibility
- **Scientific Inquiry and Research**
  - Technical Merit Evaluation of FS Methods & Practice (Views)
- **Medicolegal Death Investigation**
  - National Disaster Call Center
- **Reporting and Testimony**
  - Use of the Term “Reasonable Scientific Certainty”
- **Training on Science and Law**
  - Forensic Science Curriculum Development
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
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
Provides technical leadership to help develop and promulgate **consensus-based documentary standards and guidelines** for forensic science.

Promotes standards and guidelines that are **fit-for-purpose** and **based on sound scientific principles**.

Promotes the use of OSAC documents by accreditation and certification bodies.

Establishes and maintains working relationships with similar organizations.

>600 people involved in 34 operational units

The Goal of Producing Documentary Standards in Forensic Science is Not New

There should be adopted:

1. **Minimum standards of equipment** to be used.

2. **Standards for records of evidence** to accompany and substantiate the expert’s opinion; these to include photographs, metrological data and interpretations in permanent form.

3. **Standards for qualification of experts** which will include actual tests made against secretly designated materials and reported in compliance with item 2.

4. Methods for… **following up [with] experts testifying in court** to guarantee the highest efficiency.

*Wilmer Souder, *Army and Navy Journal*, March 19, 1932*
NIST research programs in forensic science are supported by Congressional appropriations and other agency funding (including FBI, DHS, and DoD).

**SIX CURRENT FUNDED FOCUS AREAS**

1. Ballistics and Associated Tool Marks  
2. Digital and Identification Forensics  
3. Forensic Genetics (DNA)  
4. Toxins  
5. Trace  
6. Statistics

A Forensic Science Center of Excellence was announced in May 2015 to supplement internal NIST research.

http://www.nist.gov/forensics/forensics-at-nist-2016.cfm

November 8-9, 2016  
Gaithersburg, MD
Planning has started for a second Symposium

Date: July 24-28, 2017
Location: Gaithersburg, MD
Sponsors that have been approached
DoD, FBI, NIST
U.S. initiatives to strengthen forensic science & international standards in forensic DNA

John M. Butler*

National Institute of Standards and Technology, Gaithersburg, MD, USA

• This review article covers recent U.S. activities to strengthen forensic science including the formation of the National Commission on Forensic Science and the Organization of Scientific Area Committees

• DNA documentary standards and guidelines from organizations around the world are also included

Butler, J.M. (2015) U.S. initiatives to strengthen forensic science & international standards in forensic DNA. *FSI Genetics* (volume 18, pp. 4-20)  