National Commission on Forensic Science (NCFS)

A Federal Advisory Committee
for the U.S. Department of Justice

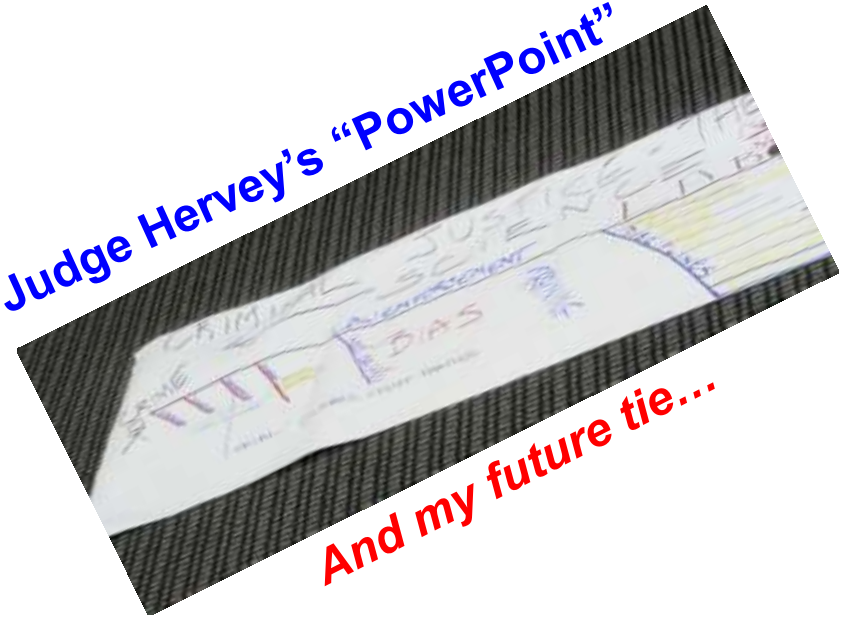
NIST
National Institute of Standards and Technology
U.S. Department of Commerce

13th Meeting: April 10-11, 2017

Wrap Up Comments from John Butler

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.

- Historical observations
- Personal reflections
- Lessons learned
- Acknowledgments



https://www.nist.gov/featured-stories/who-was-detective-x

Wilmer Souder is seen using an early comparison microscope to compare the rifling marks left on two bullets, a technique for determining whether the bullets were fired from the same gun. This technique for comparing bullets is still used today in much the same way. *Credit: Photo by NBS/NIST; source: NARA*

Lessons from History

- **Wilmer Souder** – National Bureau of Standards physicist who assisted in >800 cases for ~80 agencies from 1929 to 1953

- **1935 book "*Modern Criminal Investigation*"** (Harry Söderman & John O'Connell)
  - Chapter 29 "Police Laboratories" (p. 427) "**the personnel of the laboratory should be composed of detectives**" with a "scientific advisor" to work "hand-in-hand" with "the detective heading the police laboratory"; "**This [scientific advisor] must be carefully chosen. Much depends on him**."

National Council of Public History (April 20): I am participating with FBI, DEA, and ATF Historians

Ideals for Firearms Identification

Wilmer Souder, *Army and Navy Journal*, March 19, 1932

Are we learning from history or are we repeating it?

There should be adopted:

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

   OSAC efforts to prepare and promulgate documentary standards (moving very slowly)

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.

   NCFS Views Document on Report and Case Record Contents (not approved 10 Apr 2017)

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

   PCAST requests for data to support all conclusions made (largely being ignored)

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

   DOJ Forensic Science Discipline Review of FBI examiner testimony (just put on hold)

85 years later we are still addressing these same challenges!

Personal Reflections (1)

- My home was burglarized in June 2013 and **I have seen first-hand the challenges that exist in the criminal justice system beyond forensic science measurements**
  - e.g., sample collection problems by the detectives

- In April 2013, I moved within NIST to help with NCFS and other forensic activities
  - Leaving the laboratory environment has exposed me to a different “laboratory of learning”
  - I will likely be involved in helping with any future technical merit review & validation work conducted by NIST

Personal Reflections (2)

- I will go forward from my NCFS experience as an optimist with the belief that by small and simple things, great things can be brought to pass (but this may take longer than we would all like)

- With human nature **we are often quick to criticize**, but what will you and I do going forward to try and strengthen forensic science in the future?

- **I plan to continue writing articles, books, and conducting training** (when requested and available) of forensic practitioners, prosecutors, defense attorneys, and judges

- **Beyond the U.S.:** my experience in UK last week at the Royal Society
  - Diverse stakeholder perspectives are necessary to connect across disciplines and stakeholders – otherwise we live in silos and echo chambers

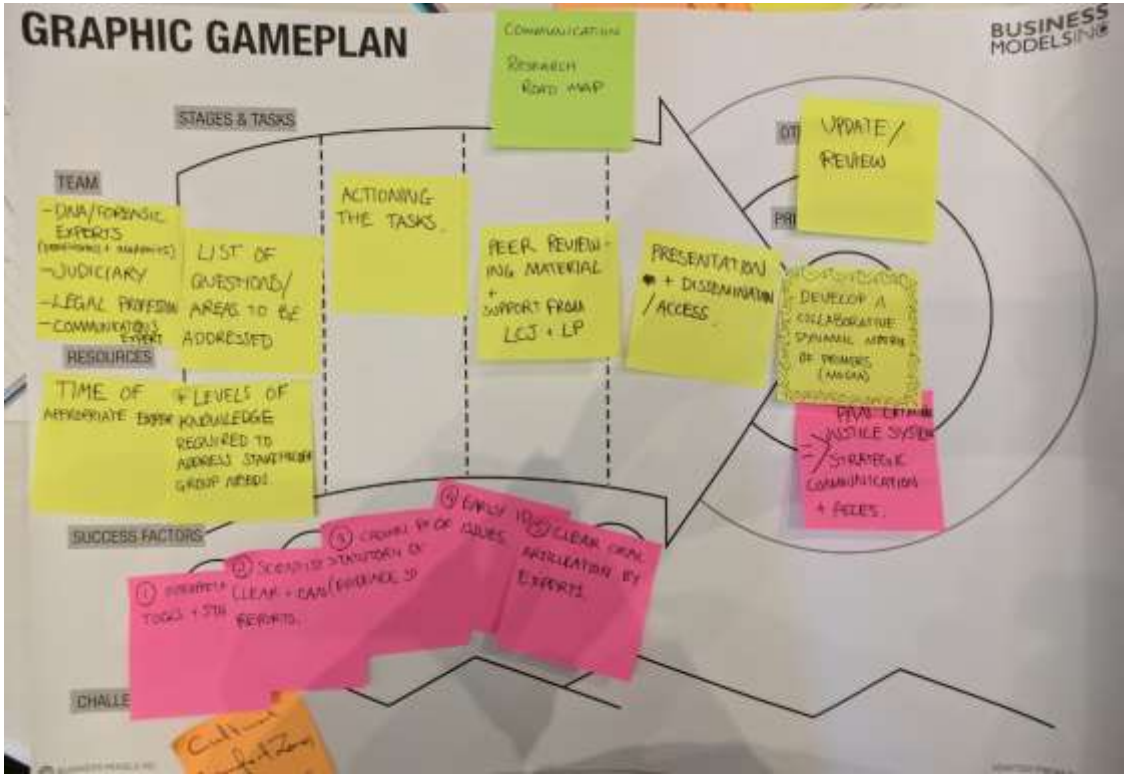
UK DNA Strategic Discussions

April 6-7, 2017 (London, UK)

- **Diverse perspectives are necessary to understand issues**
  - **Participants**: Judges (including head of the Judicial College), UK Regulator, laboratory director, forensic statistician, prosecutor, defense expert, academic researchers (multiple disciplines), documentary film maker, and a crime novelist (Val McDermid)
  - **Process**: business modeling process was used

- Training and communication are crucial to future improvements → action needs to be taken here

UK Strategic Planning on April 7, 2017 to Develop Stakeholder Primers



Goal to develop **a matrix of collaborative and dynamic training primers** (written and multi-media formats) to reach various stakeholders

An Illustrator was Present to Capture Our Discussions at this UK DNA Strategic Meeting

Commission → **a Unique Forum**

- NCFS has **enabled communication, collegiation, and collaboration** across various stakeholders to forensic science
- NCFS has benefited from the **openness and public input required** by Federal Advisory Committee Act (FACA) rules *(>600 public comments)*
- We live in an increasing polarized society (especially Washington, DC)
- There are unique challenges with forensic science operating in a legal adversarial environment
- I have personally enjoyed getting to know members of the Commission at our meetings and working collaboratively to understand one another and to reach consensus

The World Has Been Watching
What This Commission Is Doing

WORLD VIEW *A personal take on events*


JESSE WILSON

Label the limits of forensic science

This week marks a chance to curb the misuse of crime-scene evidence in US courts and spare innocent people from going to jail, says **Robin Mejia**.

6 APRIL 2017 | VOL 544 | **NATURE** | page 7

"Even good lawyers aren't scientists, and right now prosecutors have an incentive to select forensic analysts who will assure juries that evidence is clear and convincing, not ones who will speak in appropriately cautious terms. Defense lawyers won't necessarily recognize that there's anything to refute in forensic evidence against their clients."

Commission → **a Unique Classroom**

- Example: Paul Speaker's talk this morning
- **Topics covered**: accreditation, human factors & cognitive bias, ethics, standards development, digital evidence, evidence retention & storage, training & continuing education, research, statistics, …
- **140 invited speakers** in 13 meetings

Important Observations

- The National Research Council 2009 (**"NAS Report"**) **called for changes** to strengthen forensic science (with 13 recommendations) but these are not really new issues

- **The criminal justice system**, where forensic science only plays a small part, **is not perfect**; there have been individuals wrongly convicted for a variety of reasons

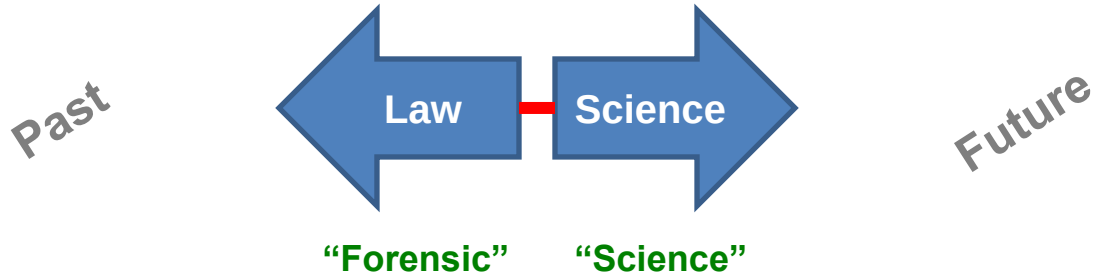
- Despite a few well-publicized examples (e.g., Annie Dookhan), **forensic scientists** generally want to do a good job and **are trying to do their best**

- **Many forces are at play** to either change things or to maintain the status quo
  → ***which changes are needed?***

Culture Clash: Science and Law

Tension exists between science and the law:

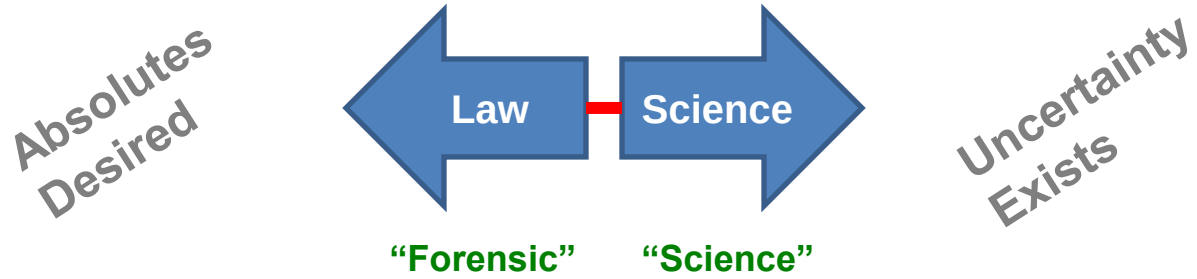
- The legal community **looks to the past** (precedence is desired)
- The scientific community **looks to the future** (evolving improvement is desired)



Culture Clash: Science and Law

Tension exists between science and the law:

- The legal community **wants finality and absolutes** (guilty or not-guilty court decisions)
- The scientific community **operates without certainty** (rarely with probabilities of 0 or 1)



Challenges to Communicating

- People like **narratives** better than **numbers**
  - **can we communicate science concepts correctly?**

- **We often talk past each other** (forensic practitioners & lawyers or practitioners & academic scientists) because we do not appreciate a subtle or significant difference in the meaning of a word or phrase – ***need for uniform terminology***

- "A reasonable degree of scientific certainty…"
  - I believe this is a legal crutch that has no scientific meaning and should not be used in court

Lessons Learned

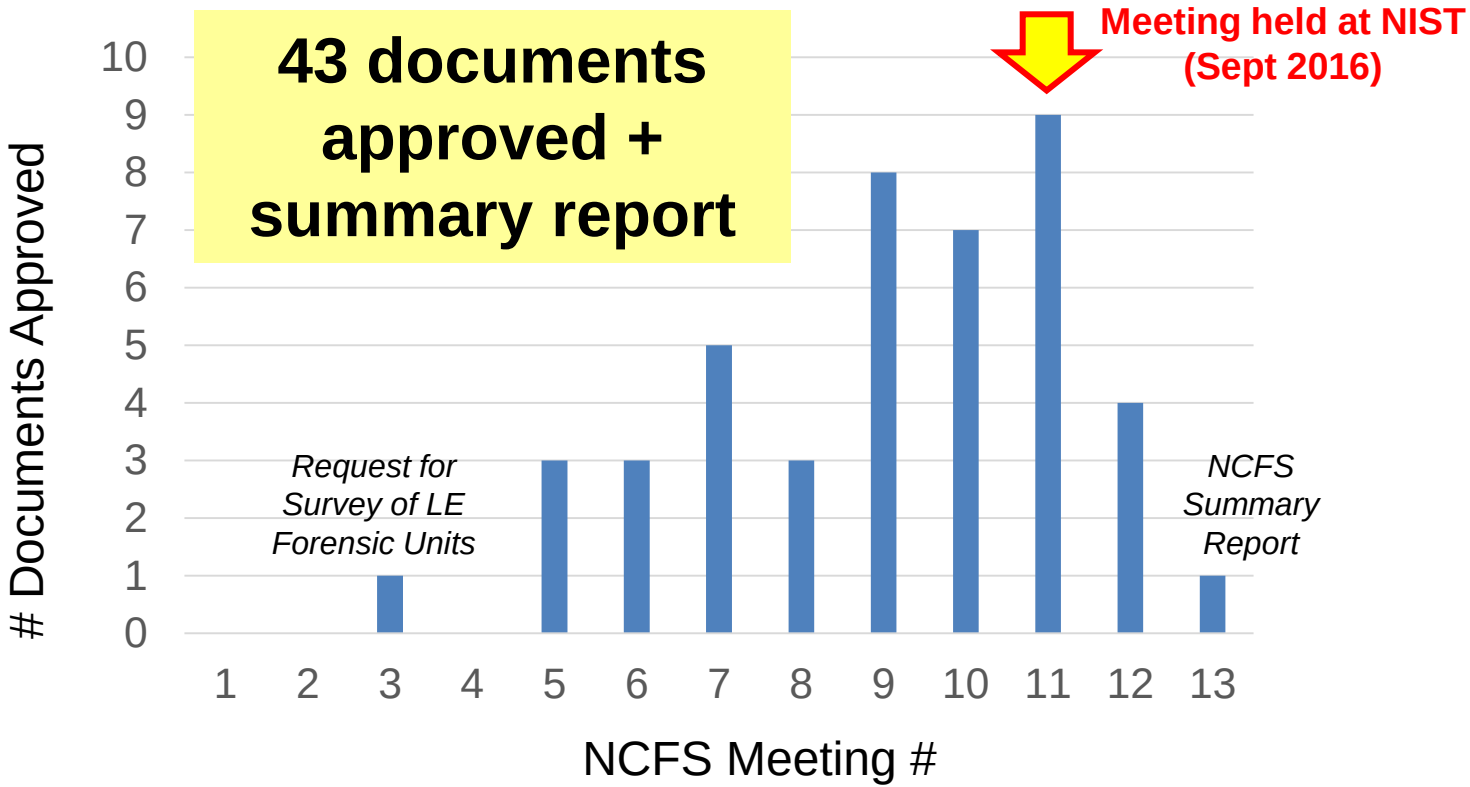
1. **Time and patience** are required for a newly organized group to align, pull together, and “gel”

2. **Respect and trust** involves listening to and seeking to understand the perspectives of others

3. **Receiving feedback can be uncomfortable** but in the end usually helps improve our efforts

4. **The community benefits when a dedicated group works together** and is open with its work products

Challenge of Ramping Up Activities and Impact of Ramping Down



Acknowledgments

- **Commissioners** (**49 in total across two terms**), meeting proxies, and subcommittee members (7 subcommittees + SPO; 15+17+1+7+10+4+6 = **60 additional SC members**)

- **Invited presenters** (8+7+10+6+8+15+4+8+7+12+10+17+28 = **140**)

- NIST leadership support
  - Pat Gallagher, **Willie May**, Kent Rochford, Rich Cavanagh

- DOJ leadership support
  - **Nelson Santos, my fellow Vice-Chair**
  - DAG James Cole, DAG Sally Yates
  - OLP: Kira Antell, Alex Krulic, Shimica Gaskins, Jonathan Wroblewski

- NCFS staff support
  - **DFO**: **Jonathan McGrath**, Andrew Bruck, Brette Steele, Armando Banilla (pre-NCFS initiation)
  - **Lindsay DePalma**, Danielle Weiss, Victor Weedn, Robin Jones
  - Contractor support with note taking at public meetings and subcommittee meetings and webcasts
  - Meeting logistics and planning people at OJP, NIST, and House of Sweden