American Academy of Forensic Sciences February 18, 2014 Seattle, WA

Organization of Scientific Area Committees (OSAC)

previously called "Guidance Groups"

Input Received and Proposed Plan Development



Welcome & Introductions

Mark Stolorow

Director, Law Enforcement Standards Office, NIST Office of Special Programs

AAFS Presentation Overview

Time	Topic	Presenter
10 min	Welcome & Introductions	Mark Stolorow
5 min	Brief Background on NIST	Rich Cavanagh
15 min	Notice of Inquiry Responses Received by NIST	Susan Ballou
30 min	Plan for the Organization of Scientific Area Committees (OSAC)	Barbara Guttman & John Butler
15 min	OSAC Membership	John Paul Jones
45 min	Q & A	All

Organization of Scientific Area Committees (OSAC)

Value

- Practitioner generated (forensic scientists)
- Courtroom connected (legal input)
- Scientifically valid (researchers and statisticians)
- Standards enforcement potential (standards developers & accreditation bodies)

Organization of Scientific Area Committees (OSAC)

Public Input – NIST seeks public input – and we listen

- Met with SWG Chairs at NIST (June 18, 2013)
- Sought public feedback with Notice of Inquiry (NOI) published in Federal Register - (Sept 27 – Nov 26, 2013)
- Met with AAFS, AFTE, IAI, NAME, and SOFT (Dec 2013 -Jan 2014)
- OSAC presentation before the National Commission on Forensic Science at first meeting - (Feb 4, 2014)
- OSAC presentation and plan posted on <u>nist.gov/forensics</u> after NCFS presentation - (Feb 5, 2014)
- Met with A2LA, ABFT, AFQAM, ANSI/ASQ-FQS, ASCLD-LAB, CAP, L-A-B) forensic science accreditation bodies on Feb 10, 2014
- Convene forum at AAFS (with webcast) (Feb 18, 2014)

Why Does this Matter to You?

As DOJ ends funding for most SWGs what's next?

- OSAC will maintain access to all legacy SWG documents &
- Populate SACs and Subcommittees with thought leaders

How will OSAC enhance standards development?

- Leverage consistency where appropriate among forensic science disciplines in 5 Scientific Area Committees (SACs)
- Strengthen best practices, guidelines and standards

How can you participate?

- Applications for self-nomination will be published shortly
- Relevant professional organizations can recommend

Brief Backgroundon NIST

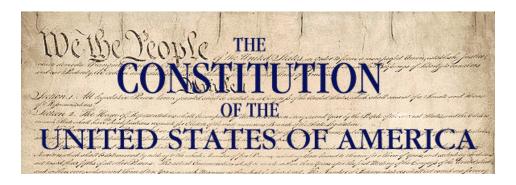
Dr. Richard Cavanagh

Director
NIST Office of Special Programs

National Institute of Standards and Technology (NIST)

Non-regulatory
 agency within
 U.S. Department
 of Commerce

 Founded in 1901 as National Bureau of Standards



Article I, Section 8: The Congress shall have the power to ...coin money, regulate the value thereof, and of foreign coin, and fix the standard of weights and measures

National Institute of Standards and Technology (NIST)

Unique Mission within the Federal Government ...

to promote U.S. innovation and industrial competitiveness by advancing

measurement science, standards, and technology in ways that enhance economic security and improve our quality of life

- Deep research expertise underpins technological innovation – e.g., new materials, advanced clinical diagnostics and therapies, advanced communications, forensic science etc.
- Non-regulatory status enables an important role as a convener that facilitates collaboration between agencies of the Federal Government, industry, private organizations, and state and local governments

NIST: A Premier Scientific Institution

A world-leading measurement science and standards program

- Work resulting in 4 + 1 Nobel Prizes since 1997
- Kyoto Prize winner in 2011
- MacArthur Fellowship winners in 2003 and 2013
- National Medal of Science winners in 1998 and 2007



Dan Shechtman
2011 Nobel Prize
in Chemistry
based on work while
Visiting Scientist at NIST



- ~120 National Society Fellows
- ~60 National/International Awards/year



Debbie Jin

2003 MacArthur

Genius Grant

2013 L'Oreal/UNESCO

"For Women in

Bill Phillips 1997 Nobel Prize in Physics



Eric Cornell 2001 Nobel Prize in Physics



John Hall 2005 Nobel Prize in Physics



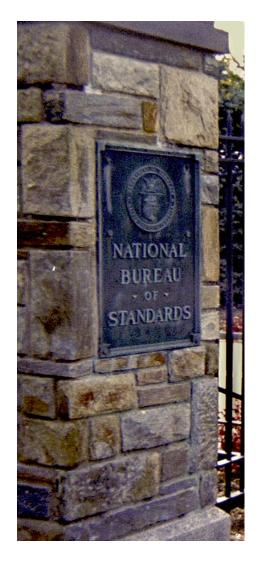
David Wineland 2007 National Medal of Science 2012 Nobel Prize

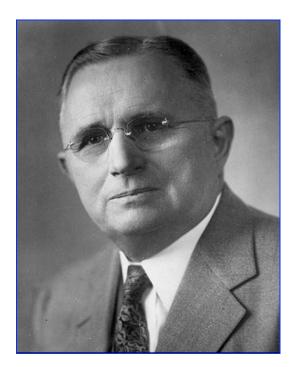


John Cahn 1997 National Medal of Science and 2011 Kyoto Prize in Materials Science

Forensics at NIST

NIST's involvement in Forensic Science began in 1913





NBS's William Souder

"one of the nation's best and least known criminologists."

Washington Post 1954

Forensics at NIST

NIST has a long and rich history of work in support of law enforcement.

Currently providing research and measurement services such as validated test methods, Standard Reference Materials, and Reference Data in areas such as:

- crime scene investigations
- computer forensics
- fire investigations
- drug detection
- drunk driving testing
- biometrics (fingerprints and handwriting analysis)
- firearms/ballistics
- standards for body armor, nonlethal weapons
- explosives detection technologies
- sports integrity/fairness
- genetics and DNA-based identification



Support the Departments of Defense, Justice, and Homeland Security in carrying out their programs

NIST as Convener/Facilitator in Standards Development

- Convened and formed National Conference on Weights and Measures (NCWM)
 - Provided standards and guidance for State regulators
 - Transitioned NCWM to the private sector
- Convened and formed Smart Grid Interoperability Panel (SGIP)
- Published Smart Grid Roadmap
 - Transitioned SGIP to the private sector
- Estimated 460 NIST staff are committee members of over 100 national and international Standards Development Organizations (SDO) and participate in over 1000 standards development activities

Notice of Inquiry (NOI) Responses Received by NIST

Susan Ballou

Program Manager for Forensic Sciences
NIST Office of Special Programs

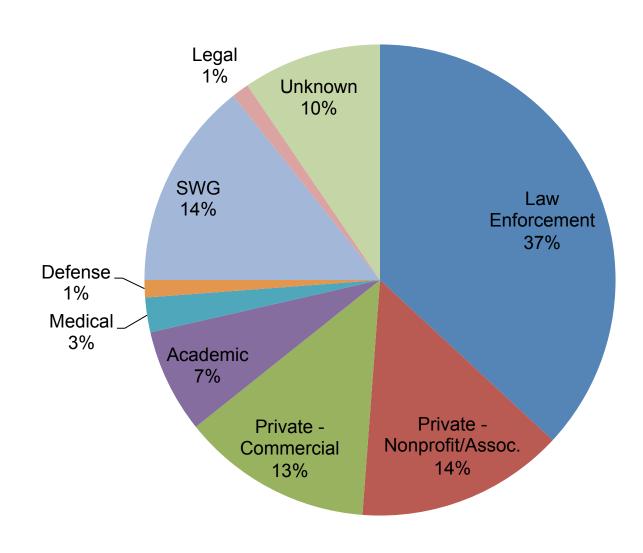
NOI Responses

Notice of Inquiry (NOI) published in Federal Register: Sept. 27 – Nov. 26, 2013

82 responses received

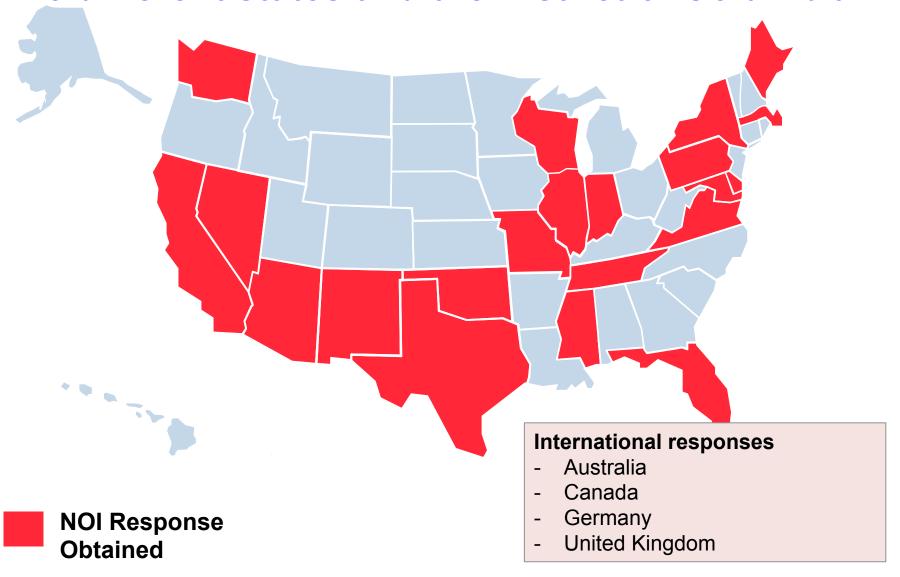
- 12 SWGs commented
- 15 other groups including ASCLD, CAC, CFSO,
 IAI, Innocence Project, NACDL
- More than a dozen labs and a half dozen companies
- Individuals from 20 states, D.C. and four countries (UK, Canada, Germany, and Australia)

NOI Responses by Organization



NOI Responses

were obtained from law enforcement agencies in 20 different states and the District of Columbia.



NOI Topic Areas

- 1. Structure of the Guidance Groups
 - 9 sub-topic questions
- 2. Impact of Guidance Groups
 - 3 sub-topic questions
- 3. Representation in the Guidance Groups
 - 4 sub-topic questions
- 4. Scope of the Guidance Groups
 - 4 sub-topic questions

Sub-topic:elements which make existing forensic scientific working groups (SWGs) successful?

- Responders offered:
 - Active membership/participation
 - Diversity in membership
 - Consistent funding
 - Strong leadership
 - An efficient website
 - An enforcement mechanism

"One thing I have always thought would be useful is to have a sort of overall coordinating committee for all the SWGs, TWGs. This could insure that they all had similar objectives, and could get into questions of standardizing language, report writing, interpretation guidelines, things that generally are too big in scope for any given TWG, SWG." - R. E. Gaensslen

Sub-topic: ...partnership with a standards development organization (SDO)...present obstacle for participation...?

60% feel it would be an obstacle

"Not all agencies who work in a given forensic field would be able to pay for the standard. Only when required by accreditation or other oversight would many agencies feel compelled to use, and therefore purchase, the standard. As there are not enough resources to provide accreditation of all entities of the forensic community, the broad adoption of a standard is not possible. Without the funding behind it, there will not be a broad adoption." – James Darnell

Sub-topic:

Would a fee-based membership model...present an obstacle for participation?

Fee-based model is not favorable

90% of respondents were opposed to a fee-based model of any form

"The fee-based membership would automatically result in the exclusion of lower funded organizations, which in turn will result in bias... create a system of the 'haves and have nots'"

— Scott Vajos

"If fees were implemented, they should be done in such a way that large agencies, small agencies, and even individuals were all able to afford them." – Heidi Eldridge

Topic 2: Impact of "Guidance Groups"

Sub-topic: Given that the Guidance Groups cannot mandate the adoption of standards, what can they do to best leverage their position and encourage adoption?

Incentivizing Adoption by Linking Standards to ...

"While ASCLD certainly supports the idea of accreditation for all crime laboratories, mandating this on the federal level without the proper organization and funding essentially creates an unfunded mandate that makes implementation impossible. Accreditation and certification is necessary and receipt of federal funds should be contingent on compliance or work towards compliance." – Jay Henry

"Without funding or **legislative mandates**, the impact and acceptance of the guidance group products may be limited." – Laura Hernandez

"There is some concern that the Guidance Groups could put forward recommendations that would result in unfunded mandates. Having said that, the CFSO organizations are supportive of mandating accreditation and certification and believe that **work with a legislative body** could result in a positive outcome favorable to the forensic practitioner community." – Pete Marone

Topic 2: Key Themes

Most respondents expressed a desire to include researchers in the process:

- Conduct events open to researchers that allow for information exchange
- Include researchers as members of discipline specific groups
- Form separate subgroups of researchers
- Include researchers in oversight board

Topic 3: Representation in the "Guidance Groups"

Sub-topic: Who are the stakeholders who should be represented on the Guidance Groups?

Range of responses included - academicians, attorneys, managers, practitioners, public and private sector, quality assurance managers, researchers, scientists, statisticians, vendors

31% - stated the majority composition of the guidance groups should be practitioners actively working in the field...25% stated all stakeholders should be represented

Topic 3: Representation in the "Guidance Groups"

Sub-topic: What does balanced representation mean and how can it be achieved?

- Allow each guidance group to evaluate its own balance
- Participation percentage of each stakeholder be equated to the needs of the particular discipline

"The balance of interests of stakeholders can be ensured by a proper appeals process in the 'Guidance Groups' bylaws." – Peter Tytell

Topic 4: Scope of the "Guidance Groups"

Sub-topic: Should all of the current forensic Scientific Working Groups (SWGs) transition to Guidance Groups?

Majority Responded – YES

"All should transition to alleviate confusion/ encourage collaboration." – Robert Horton "The current SWGs should "carry the torch" as NIST further refines the process...transition all SWGs under NIST's umbrella and allow them to keep their name..." – SWGDRUG

Topic 4: Scope of the "Guidance Groups"

"Each SWG should decide for itself if and how it should/could transition into a GG or whether they might benefit from combining or fragmenting." – SWGMDI

"NACDL opposes any effort to use existing organizations as the backbone of the Guidance Groups, and specifically opposes the transition of Scientific Working Groups (SWGs) into Guidance Groups...The SWGs are not independent of law enforcement..." – NACDL

In Brief

Public posting of comments on nist.gov/forensics

Highlights:

- Practitioner voice should be a major player
- Strongly urged to include all forensic science disciplines
- Concern about funding (no "pay-to-play" fees)
- Interest in publicly accessible documents posted on the web in a uniform and timely manner
- Interest in face-to-face and virtual meetings
- Encouragement to include existing professional organizations

Plan for the Organization of Scientific Area Committees (OSAC)

Barbara Guttman

Manager, NIST Computer Forensics Program

John M. Butler Special Assistant to the Director for Forensic Science



Harry T. Edwards U.S. Court of Appeals (DC) Co-Chair, Forensic Science Committee

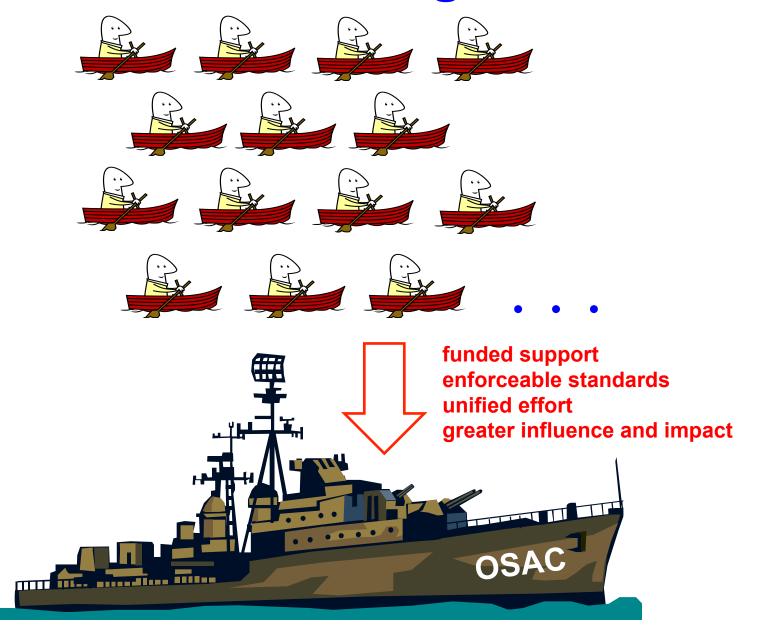
Some Concerns about Current Scientific Working Groups (SWGs)

from Judge Harry Edwards, co-chair of the 2009 NAS Committee

- Need regular source of funding
- Need membership criteria
- Need to produce specific, enforceable standards
- Need mandate for community to follow
- Need follow-up to measure impact of work

Source: Honorable Harry T. Edwards, Presentation at the Superior Court of the District of Columbia Conference on The Role of the Court in an Age of Developing Science & Technology: The National Academy of Sciences Report on Forensic Sciences: What it Means for the Bench and Bar (May 6, 2010)

Individual SWGs vs. Organized Effort



Department of Justice

Policy focused

Limited Term (FACA)

Attorney General

Recommendations

National Commission on Forensic Science (NCFS)

NIST

Practice focused

Ongoing (Forensic Science Quality Infrastructure)

Organization of Scientific Area Committees (OSAC)

Forensic Science Standards Board (FSSB)

NIST

Practice focused

Ongoing (Forensic Science Quality Infrastructure)

Organization of Scientific Area Committees (OSAC)

Forensic Science Standards Board (FSSB) Outputs

Forensic Science Code of Practice

Process & technical merit

FSSB Registry of Approved Standards Technical merit

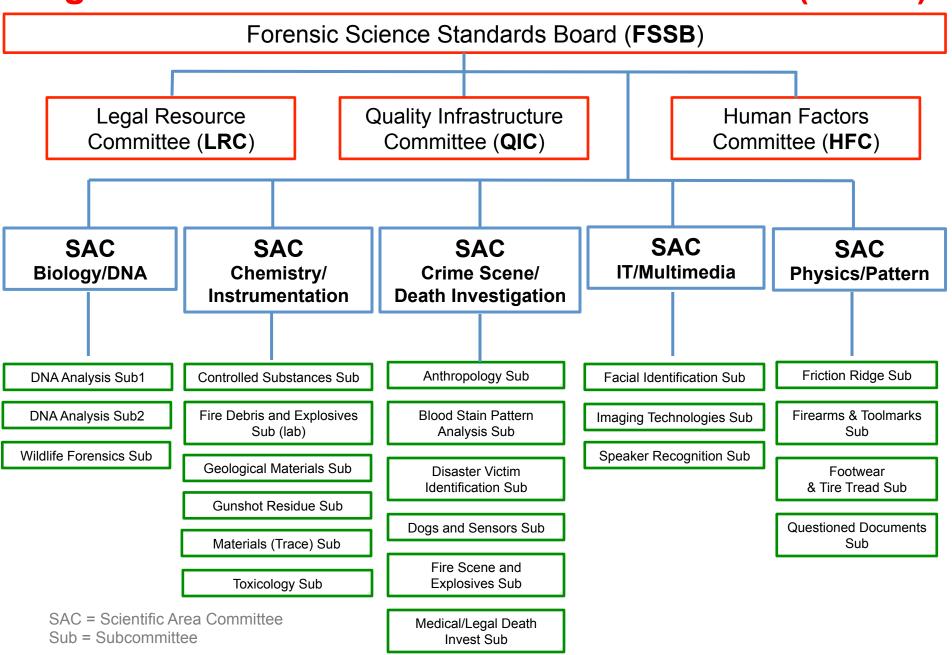
List of SAC Approved Best Practices and Guidelines

Accreditors
Appropriate ISO/IEC
documents, e.g. 17011

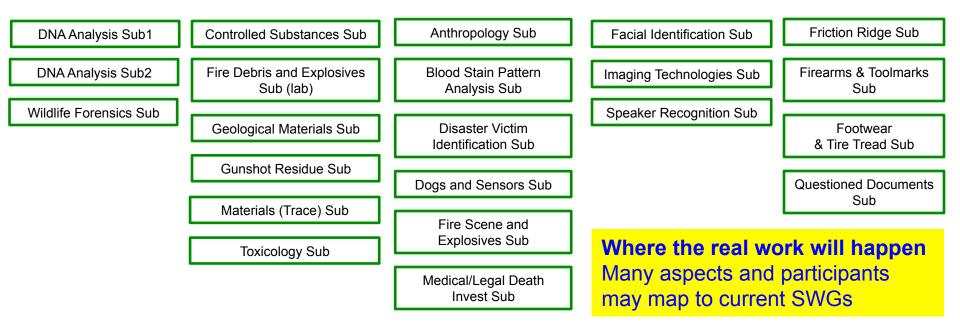
Laboratories
Appropriate ISO/IEC documents

and discipline-specific approved standards and documents

Organization of Scientific Area Committees (OSAC)



SAC Subcommittees



- Develops and vets formal documents to be submitted for approval by SAC (in case of guidelines) or SAC & FSSB (in case of standards)
- Communicates activities and progress to SACs
- Subcommittee deliberations are not public

Subcommittee Membership

Each subcommittee has a **maximum membership** of 20 voting members (and up to 5 invited guests per meeting)

Distribution goal of [70% practitioner* (20% federal, 30% state & local, 20% civil or other), 20% researchers (including statisticians, epidemiologists, etc.), and 10% R&D technology partners and providers] — [Under consideration!]

^{*} Practitioner is defined as someone actively doing or managing casework

Why is Digital Evidence Excluded from OSAC (and the NCFS charter)?

- Digital evidence is information stored or transmitted in digital form, including emails, the contents of computer memory, Internet browser histories, and many other items.
- Because of the complexity, diversity, and rapidly evolving technological advances of digital technologies, digital evidence will not be included in the partnership between DOJ and NIST at this time.
- The Scientific Working Group on Digital Evidence (SWGDE) will continue its work.

Will SWGDAM be transitioned to OSAC?

 Due to the unique statutory relationship between SWGDAM and the FBI, SWGDAM will remain with the FBI at this time.

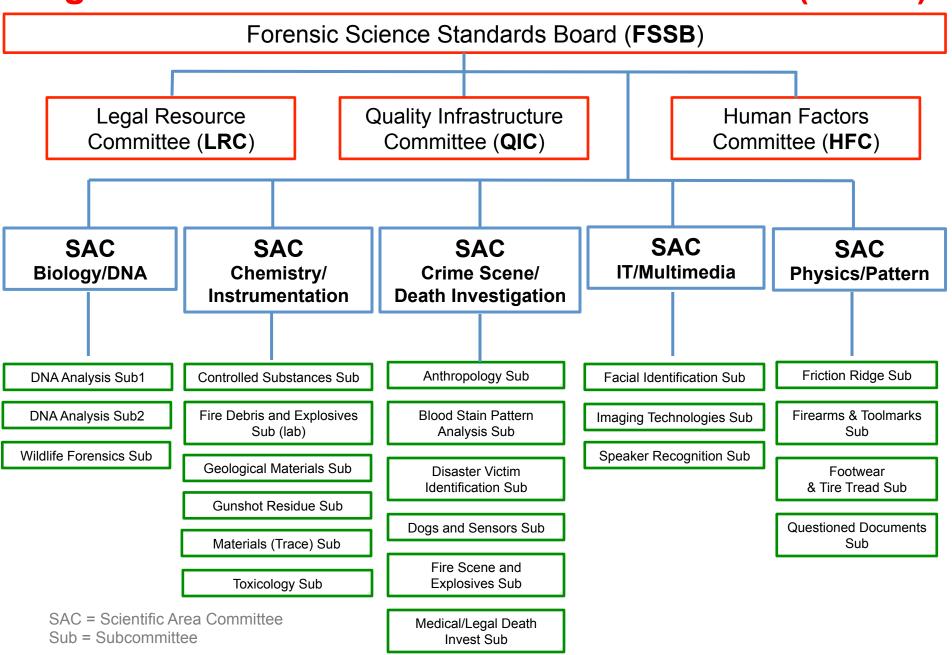
 The FBI has no initial objection to the possible transition of SWGDAM or appropriate portions of SWGDAM to OSAC and is open to considering this at some future time.

See http://swgdam.org/faq.html

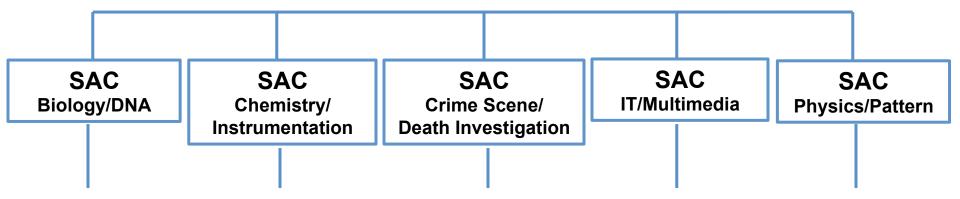
Why Two DNA Subcommittees?

- To provide an example that disciplines may need multiple subcommittees with specific focus (based on SAC input and FSSB decision)
 - DNA sub1 could be focused on Methods and have more researchers involved
 - DNA sub2 could be focused on Interpretation and have more statisticians involved
- Materials (Trace) subcommittee could also be subdivided, for example:
 - Materials (Trace) sub1: Paint and Glass
 - Materials (Trace) sub2: Hairs, Fiber, and Tape

Organization of Scientific Area Committees (OSAC)



Scientific Area Committees (SACs)



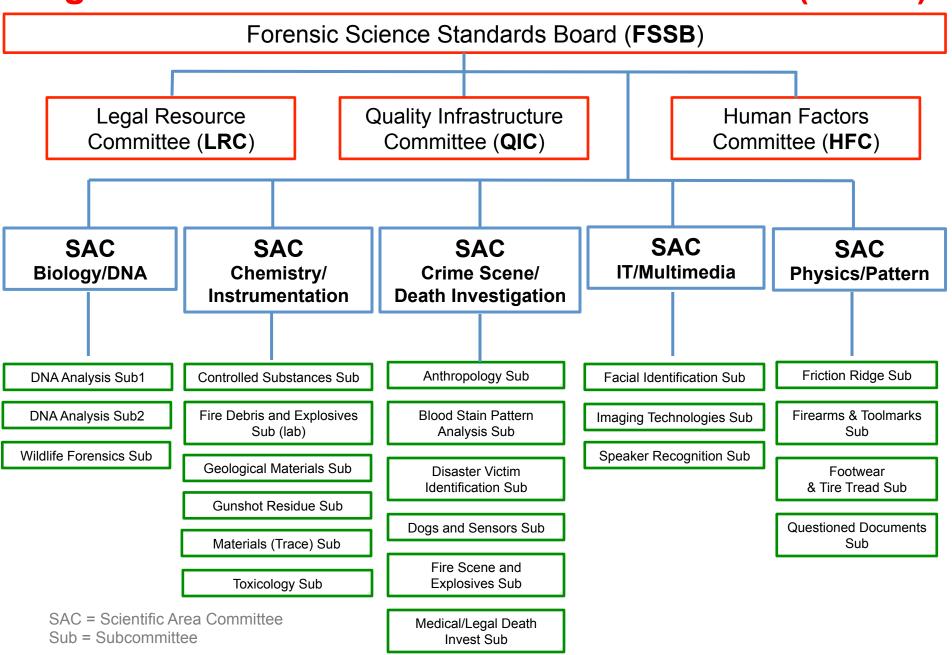
- Sets priorities for subcommittee work and enables a bigger picture view on topics like report wording and statistical analysis
- Recommends (to FSSB) creating, merging, or abolishing subcommittees
- SAC meetings will be open to the public and agendas made available prior to meetings

SAC Membership

Each SAC is comprised of up to 15 members including

- Subcommittee chairs
- Representatives of professional forensic science organizations appropriate to the scientific area (e.g., AAFS, AFTE, IAI, NAME, and SOFT)
- Researchers
- Measurement scientists (including statisticians, epidemiologists, etc.)

Organization of Scientific Area Committees (OSAC)



OSAC Oversight

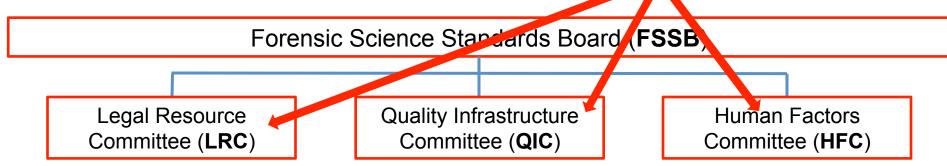
Forensic Science Standards Board (FSSB)

Legal Resource Committee (**LRC**) Quality Infrastructure Committee (QIC)

Human Factors
Committee (**HFC**)

- FSSB ensures communication flow among SACs and overall OSAC infrastructure and the forensic science community
- Approves standards for inclusion in Forensic Science Code of Practice and FSSB Registry of Approved Standards
- FSSB composed of 16 members initially appointed by NIST-DOJ leadership and membership selection committee
 - 5 SAC Chairs
 - 5 representatives of professional forensics organizations (e.g., AAFS, AFTE, IAI, NAME, SOFT)
 - 5 Members at large from the research and measurement science communities
 - 1 NIST ex-officio

OSAC Support



- LRC composed of up to 10 judges, lawyers, and legal experts who provide guidance about the legal ramifications of forensic standards under development and input on presentation of forensic results to the legal system
- QIC composed of up to 10 standards experts, quality systems managers, and accreditation and certification specialists who are responsible for writing and updating the Forensic Science Code of Practice
- **HFC** composed of up to 10 psychologists, quality systems managers, and usability experts who provide guidance on the influence of systems design on human performance and on ways to mitigate errors in complex tasks

FSSB Registry of Approved Standards

- Forensic science methods and protocols used shall be on the FSSB Registry of Approved Standards
- Exceptions:
 - If a method is not on the approved list, then the method most fit-for-purpose should be utilized and a justification for use shall be provided
 - If an applicable test method is on the approved list, but an alternative method is utilized, a justification for use shall be provided
 - If an approved method is used for an alternative use than specified in the method, a justification for use shall be provided

Standards Development Process

- Review and approval shall consistent of the following:
 - Technical merit
 - Detailed scope
 - Examination of fitness-for-purpose
 - Consideration of uncertainty of measurement and potential bias
 - Method validation, as appropriate
 - Reasonable standards development process
 - Due process
 - Consensus
 - Openness
 - Transparency
 - Freedom from undue influence
 - Balance of interests
- Approved standards may come from sources such as:
 - An existing SDO (must meet Code of Practice requirements)
 - Developed by an OSAC Subcommittee using a process that meets the above requirements

Administering Organization

- Funds travel for OSAC participants
- Handles logistics of in-person and virtual meetings
- Ensures communication support including regularly updating OSAC external website
- Responsible for rendering a decision in event of an appeal or dispute
- NIST will serve in this role with a goal to transition OSAC support to an independent professional organization with a target of 3 to 5 years, maintaining:
 - Quality and integrity
 - A participative role to ensure science and technology excellence

Organization of Scientific Area Committees (OSAC)

Creating a quality infrastructure for forensic science with a connection to accreditation bodies

- Practitioner generated (forensic scientists)
- Catalog existing SWG documents for continued access
- Courtroom connected (legal input)
- Scientifically valid (researchers)
- Standards enforcement



www.nist.gov/forensics

OSAC Membership How can each of you participate?

John Paul Jones II



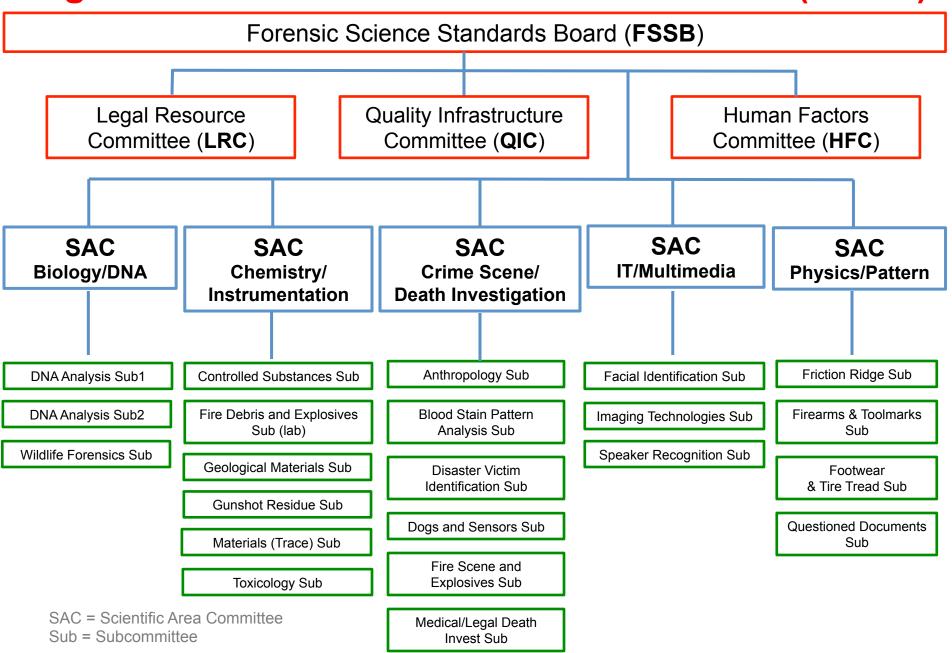
NIST Forensic Science Program,
Office of Special Programs



Many Positions to Fill on this Ship. . .



Organization of Scientific Area Committees (OSAC)



Time Commitment of Members (1)

- Length of membership staggered 3-year terms
- LRC, QIC, and HFC will conduct business using both in-person and virtual meetings
- SAC Committees & Subcommittees will conduct business using both in-person and virtual meetings
- SAC Committees & Subcommittees will conduct at least one in-person meeting per year
- Travel, lodging and per diem expenses for members will be paid by NIST



Time Commitment of Members (2)

- Virtual meetings will occur periodically to accomplish the objectives of Committees and Subcommittees
- Virtual meetings are expected to require a total of 5 days or less throughout the year
- Other time commitments include reviewing/ editing documents on a periodic basis



How Do I Apply?

- Online Application will be posted upon approval must submit through website
- www.nist.gov/forensics Click "OSAC" (top banner)
- Application period will be open for 30 days
- Self-nomination process
 - 3 Committees (seeking approximately 30 people)
 - 5 SACs (seeking approximately 75 people)
 - 22 Subcommittees (seeking approximately 400+ people)





What Do I Need to Submit?

- Online membership application
- Current CV
- Letter of support from employer if required by agency

Application Form Questions (1)

- Classification of Employer
 - Federal Government, State Government, Local Government,
 Tribal Government, FFRDC, Academic, Private Sector
- Education
 - BS, MS, MSFS, PhD, JD, etc.
- Relevant Professional Organization Affiliation
 - AAFS, ABA, ACS, AFTE, ASA, ASCLD, IAI, NACDL, NAME, NDAA, Regional Associations, SOFT, etc.
- Primary Job Classification
 - Forensic Practitioner, Researcher, R&D Technology Partner, Educator/Trainer, Quality Assurance Administrator, Attorney, Judge, Other

Application Form Questions (2)

- Years and type of relevant work experience in discipline/subject area
- Standards development experience, including positions held (e.g., SWGs, ASTM, ISO, NFPA)
- Relevant research experience related to subject matter
- Relevant publications authored or co-authored
- Other relevant experience (e.g., industry leadership)
- Key interests (e.g., terminology, conclusion scales, analytical techniques)

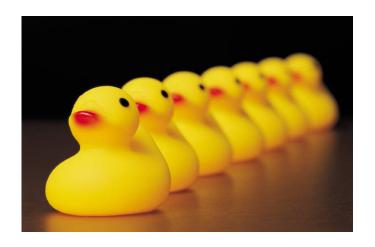
OSAC Position Connections to Note

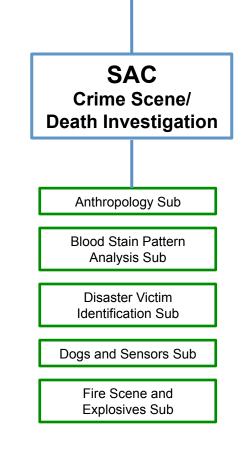
 SAC Chairs will sit on FSSB

Forensic Science Standards Board (FSSB)

 Subcommittee Chairs sit on relevant SAC

 SAC Chair cannot be a Subcommittee Chair





OSAC FSSB

Forensic Science Standards Board (FSSB)

- FSSB composed of 16 members
 - 5 SAC Chairs
 - 5 representatives of professional forensics organizations (e.g., AAFS, AFTE, IAI, NAME, SOFT)
 - 5 Members at large from the research and measurement science communities
 - 1 NIST ex-officio
- Initial selection of FSSB will be by NIST-DOJ leadership/membership committee

OSAC Support Committees

Legal Resource Committee (LRC) Quality Infrastructure Committee (QIC)

Human Factors Committee (**HFC**)

- LRC composed of up to 10 judges, lawyers, and legal experts
- QIC composed of up to 10 standards experts, quality systems managers, and accreditation and certification specialists
- HFC composed of up to 10 psychologists, quality systems managers, and usability experts
- Initial selection of LRC, QIC, and HFC by NIST-DOJ leadership/membership committee

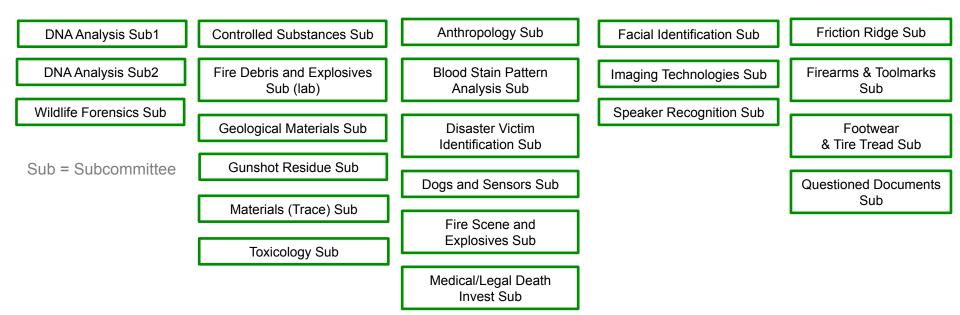
Scientific Area Committees (SACs)



SAC = Scientific Area Committee

- Each SAC is comprised of up to 15 members including
 - Subcommittee chairs
 - Representatives of professional forensic science organizations appropriate to the scientific area (e.g., AAFS, AFTE, IAI, NAME, and SOFT)
 - Researchers
 - Measurement scientists (including statisticians, epidemiologists, etc.)
- Note: The Chair of the SAC cannot be a Subcommittee Chair.
- Initial selection of SACs by NIST-DOJ leadership/membership committee

OSAC Subcommittees



- Each Subcommittee has a maximum of 20 voting members (and up to 5 invited guests per meeting) – see breakdown on next slide
- Subcommittee members selected by FSSB and SACs then reviewed by DOJ/NIST

Membership Targets for Subcommittees

- Membership balance goals may differ based on the specific Subcommittee – however general target is as follows: (<u>Under consideration</u>)
- 70% practitioner:
 - 20% federal
 - 30% state & local
 - 20% civil or other
- 20% researchers (including statisticians, epidemiologists, etc.)
- 10% R&D technology partners and providers

Subcommittee Selection Process

- Applications will be binned into specific Subcommittees as identified by applicant
- SAC will review and select a roster for each Subcommittee that best meets individual Subcommittee requirements
- SAC will present rosters for their respective
 Subcommittees as a package to the FSSB for approval
- FSSB approved inaugural roster will be submitted to NIST/DOJ for review/concurrence

Time Frame for Application Process

Planned Timeline

- Solicit applications and recruit potential OSAC members starting soon
- Appoint FSSB and meet in April
- Appoint LRC, QIC, HFC and SAC membership in May
- First SAC meetings to select Subcommittee membership in June (with NIST-DOJ review)
- Conduct OSAC training virtually over the summer via webinar
- Hold in-person meeting in September 2014
- All applicants will be notified of the outcome at the conclusion of the selection process



Question & Answer Time

www.nist.gov/forensics

mark.stolorow@nist.gov